

**LUSI**  
**WBS 1.6**

**Controls and Data System**

# **Work –Book Spreadsheet**

LUSI Project Controls

Re-examine per-experiment MPS

FTE Rates		Basis of Estimate (BOE) Codes	
Management	200	Catalog	1
Engineer	110	Vendor	2
Programmer	80	Drawings	3
Technician	60	Similar	4
		Analysis	5
		Expert	6
		Lien	7

Factor	Design Maturity, Labor Related Costs
1.45	The task/item is a conceptual design and/or advances the state of the art.
1.35	The task/item is a new design and/or requires some R&D (not beyond state of the art).
1.25	The task/item is a new design, not exotic, being estimated with no prior experience.
1.15	The task/item is a new design, not exotic, being estimated with prior experience.
1.1	The task/item is a modification of an existing design.
1	The task/item is fully invoiced/completed.

Factor	Design Maturity, Material and Subcontract Costs
1.35	The task/item has only a conceptual design or scaled from analogous system.
1.25	The task/item has an engineering estimate with sketches only.
1.15	The task/item has an engineering estimate with engineering drawings.
1.1	The task/item has a budgetary quote or is an off-the shelf item.
1	The task/item is fully invoiced/completed.

**Judgment Factors**

These factors can range from 1.0 to 1.1, but can be higher under unusual conditions.

**Multiple Use Items**

VME Crate	5400	PO #131094
VME CPU	3600	PO #123594
VME Crate/CPU	9000	
VME EVR	3800	PO #122842 EVR200
cPCI crate	2000	
cPCI CPU	3000	
PMC EVR	2000	
Control Room Workstation	8200	PO #128298
ProcurePrep	650	

Totals	Everything	M & S	Labor
	\$ 6,539,834	\$ 3,363,066	\$ 3,176,768

1.06.01 System Integration  
WBS Activity

BOE	Hours	Eng \$	Prog \$	Tech \$	Item	Item #	Count	\$/Unit	M & S \$	Activity Totals \$	Comments
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Details in P3

The \$ number in P3 is the correct one

1033258

WBS	Activity	BOE	Hours	Eng \$	Prog \$	Tech \$	Item	Item #	Count	\$/Unit	M & S \$	Activity Totals \$	Comments
1.06.02	LUSI Common Controls												
1.06.02.1	<u>Photon Beam Feedback</u>												
1.06.02.1.1	Design Photon Beam Feedback	5	40	\$ 4,400									
1.06.02.1.2	Final Design Review Photon Beam Feedback		5	\$ 550									
1.06.02.1.3	COMP: FDR for Photon Beam Feedback												
1.06.02.1.4	Procurement Preparation												
1.06.02.1.4	Procure Photon Beam Feedback						48 strand rad hardened	3000		\$ 9	\$	0	in XES
							Connectors	50		\$ 30	\$	0	in XES
							Switch	47		\$ 9,967	\$	9,967	
							Terminal Servers	16		\$ 1,262	\$	3,846	
							VME Crate/CPU	1,2		\$ 8,289	\$	8,289	
1.06.02.1.5	Dev Software Photon Beam Feedback	5	40		\$ 3,200							\$ 22,102	This activity M&S
1.06.02.1.6	Prepare Docs Photon Beam Feedback	5	5		\$ 400								
1.06.02.1.7	Fab/Delvr Photon Beam Feedback	5	60			\$ 3,600							
1.06.02.1.8	AVAIL: Photon Beam Feedback System											\$ 34,252	This activityTotal
1.06.02.2	<u>Electron Beam Feedback</u>												
1.06.02.2.1	Design Electron Beam Feedback	5	40	\$ 4,400									
1.06.02.2.2	Final Design Review Electron Beam Feedback		5	\$ 550									
1.06.02.2.3	COMP: FDR for Electron Beam Feedback												
1.06.02.2.4	Procurement Preparation												
1.06.02.2.4	Procure Electron Beam Feedback						VME Crate/CPU in M	1,2		\$ 8,289	\$	8,289	
							Switch - MCC & FEI	47		\$ 9,967	\$	9,967	one more in XES
1.06.02.2.5	Dev Software Electron Beam Feedback	5	20		\$ 1,600							\$ 18,256	This activity M&S
1.06.02.2.6	Prepare Docs Electron Beam Feedback	5	10		\$ 800								
1.06.02.2.7	Fab/Delvr Electron Beam Feedback	5	80			\$ 4,800							
1.06.02.2.8	AVAIL: Electron Beam Feedback System											\$ 30,406	This activityTotal
1.06.02.3	<u>Hutch Environmental Controls(3)</u>												
1.06.02.3.1	Design Hutch Environmental Controls	5	10	\$ 1,100									
	Misc.		5										
	PID Loop		5										
1.06.02.3.2	Final Design Review Hutch Environmental Controls		5	\$ 550									
1.06.02.3.3	COMP: FDR for Hutch Environmental Controls												
1.06.02.3.4	Procurement Preparation										\$ 600		
1.06.02.3.4	Procure Hutch Environmental Controls						Dell Workstation	10		\$ 4,082	\$	12,246	
							Ambient thermocou	36		\$ 105	\$	3,780	
							IP330E Analog Inpu	11		\$ 1,150	\$	3,450	
							24V Power Supply (any BK9	3		\$ 200	\$	600	
							BK9000 Coupler	54		\$ 263	\$	1,698	
							KL3314 Rail	55		\$ 229	\$	3,435	
1.06.02.3.5	Dev Software Hutch Environmental Controls	4	20		\$ 1,600							\$ 25,809	This activity M&S
1.06.02.3.6	Prepare Docs Hutch Environmental Controls	4	5		\$ 400								
1.06.02.3.7	Fab/Delvr Hutch Environmental Controls	4	40			\$ 2,400							
1.06.02.3.8	AVAIL: Hutch Environmental Controls Software												
1.06.02.3.8	AVAIL: Hutch Environmental Controls Hardware											\$ 31,859	This activityTotal
1.06.02.4	<u>FEH DAQ Data Storage</u>												
1.06.02.4.1	Design FEH DAQ Data Storage	4	40	\$ 4,400									
1.06.02.4.2	Final Design Review FEH DAQ Data Storage		10	\$ 1,100									
1.06.02.4.3	COMP: FDR for FEH DAQ Data Storage												
1.06.02.4.4	Procurement Preparation												
1.06.02.4.4	Procure FEH DAQ Data Storage						Sun Thumper serve:	49		\$ 27,000	\$	27,000	



**1.06.03 X-Ray Pump Probe NEH Hutch 3 (XPP)**

**1.06.03.1 XPP Requirements, Design, Setup**

WBS	Activity	BOE	DSNM	JUDG	Hours	Eng \$	Prog \$	Tech \$	Item	Count	\$/Unit	M & S \$	Activity Total \$	Comments
1.06.03.1.1	<u>Requirements, Design</u>													
1.06.03.1.1.1	Prepare XPP Requirements	5	1.15	1.15	20	\$ 2,200								
1.06.03.1.1.2	Prepare XPP - Controls ICD	5	1.15	1.15	20	\$ 2,200								
1.06.03.1.1.3	Prepare Final Device List for XPP	5	1.15	1.15	20	\$ 2,200								
1.06.03.1.1.4	Preliminary Design for XPP	5	1.15	1.15	130	\$ 14,300								
1.06.03.1.1.4.1	Display Screens				5									
1.06.03.1.1.4.2	Database				30									
1.06.03.1.1.4.3	Archive				5									
1.06.03.1.1.4.4	Scans				5									
1.06.03.1.1.4.5	Visualization				5									
1.06.03.1.1.4.6	Scripts				5									
1.06.03.1.1.4.7	State Machine				5									
1.06.03.1.1.4.8	DAQ FEE interface				5									
1.06.03.1.1.4.9	Electro Optic Laser Timing				5									
1.06.03.1.1.4.10	Monochromator				5									
1.06.03.1.1.4.11	Pump Laser Drivers				5									
1.06.03.1.1.4.12	Data Processing				5									
1.06.03.1.1.4.13	Feature Extraction				5									
1.06.03.1.1.4.14	Compile Design Document				40									
1.06.03.1.1.5	Preliminary Design Review (PDR)				30	\$ 3,300								
1.06.03.1.1.6	COMP: Preliminary Design Review (PDR)													
1.06.03.1.1.7	Post PDR Design Effort	5	1.15	1.15	5	\$ 550								
1.06.03.1.1.8	Preliminary Design Review Phase 2(PDR)				30	\$ 3,300								
1.06.03.1.1.9	COMP: Preliminary Design Review Phase 2(PDR)													
1.06.03.1.1.10	Post PDR Design Effort Phase 2	5	1.15	1.15	40	\$ 4,400								
1.06.03.1.2	<u>Development Test Setup</u>													
*	Procurement Preparation													
1.06.03.1.2.1	Procure XPP Specific Hardware & Software	5	1.15	1.15								\$ 25,000	\$ 25,000	This activity M&S
1.06.03.1.2.2	Install XPP Specific Hardware & Software	5	1.15	1.15	80			\$ 4,800						
1.06.03.1.2.3	Develop Software for XPP Test Setup	5	1.15	1.15	200		\$ 16,000							
1.06.03.1.2.4	COMP: XPP Test Setup													
	<b>Totals</b>					\$ 32,450	\$ 16,000	\$ 4,800				\$ 25,000	\$ 78,250	Total 1.06.03.1







1.06.03.3	XPP Specific Controls														
WBS	Activity	BOE Hours	Eng \$	Prog \$	Tech \$	Item	Item #	Count	\$/Unit	M & S \$	Activity Total \$				
<u>1.06.03.3.1</u>	<u>Data Acquisition (DAQ)</u>					<i>BNL 2-D Detector, not in vacuum</i>									
1.06.03.3.1.1	Design Data Acquisition	5	770 \$	84,700		motion under robot arm/diffractometer									
1.06.03.3.1.1.1	FPGA Image Processing		40			(use modules from XES production)									
1.06.03.3.1.1.2	DAQ Front End Electronics Interface		50			(only includes veto processing, movement, calibration correction)									
1.06.03.3.1.1.3	EVR Triggers		20												
1.06.03.3.1.1.4	Data Binning		60												
1.06.03.3.1.1.5	Layout/testing		600												
1.06.03.3.1.2	Final Design Review Data Acquisition	4	20 \$	2,200											
1.06.03.3.1.3	COMP: FDR for Data Acquisition														
*	Procurement Preparation														
1.06.03.3.1.4	Procure Data Acquisition	4													
1.06.03.3.1.4.1	CE Module					Cluster Interconnect Module	39	1	\$ 4,000	\$ 4,000					
						Interface Module	40	1	\$ 4,000	\$ 4,000					
						ATCA crate	42	1	\$ 6,922	\$ 6,922					
						CIM backplane	41	1	\$ 2,000	\$ 2,000					
						PCB fabrication for ASIC		1	\$ 25,000	\$ 25,000					
						Elec parts/assembly		1	\$ 5,000	\$ 5,000					
											\$	46,922			
1.06.03.3.1.5	Develop Software Data Acquisition	5	400	\$ 32,000											
1.06.03.3.1.5.1	DAQ Front End Electronics Interface		60												
1.06.03.3.1.5.2	FPGA Image Processing		20												
1.06.03.3.1.5.3	Brookhaven Imager Integration		80												
1.06.03.3.1.5.4	Data Binning		80												
1.06.03.3.1.5.5	EPICS Database		40												
1.06.03.3.1.5.6	Display Screens		20												
1.06.03.3.1.6	Fab/Delivr Data Acquisition	4	140		\$ 8,400										
1.06.03.3.1.6.1	CE Modules		20												
1.06.03.3.1.6.2	Brookhaven 2D Detector		20												
1.06.03.3.1.6.3	120 Hz Network		20												
1.06.03.3.1.6.4	Quick View Rendering Node		40												
1.06.03.3.1.6.4	Build/Test CE Compatible Front End Board		40												
1.06.03.3.1.7	System Test Data Acquisition	5	40	\$ 3,200											
1.06.03.3.1.8	Prepare Docs Data Acquisition	4	20	\$ 1,600											
1.06.03.3.1.9	AVAIL: Data Acquisition Hardware														
1.06.03.3.1.10	AVAIL: Data Acquisition Software										\$	179,022			
<u>1.06.03.3.2</u>	<u>DAQ Hutch Data Management</u>					<i>(based on XES)</i>									
1.06.03.3.2.1	Design DAQ Hutch Data Management	5	60 \$	6,600											
1.06.03.3.2.1.1	DAQ to Cache		20												
1.06.03.3.2.1.2	Hutch Local DAQ Processing		20												
1.06.03.3.2.1.3	Cache to SCCS		20												
1.06.03.3.2.2	Final Design Review DAQ Hutch Data Management	4	20 \$	2,200											
1.06.03.3.2.3	COMP: FDR for DAQ Hutch Data Management														
1.06.03.3.2.5	Develop Software DAQ Hutch Data Management	5	60	\$ 4,800											
1.06.03.3.2.5.1	DAQ to Cache		20												
1.06.03.3.2.5.2	Hutch Local DAQ Processing		20												
1.06.03.3.2.5.3	Cache to SCCS		20												
1.06.03.3.2.6	Fab/Delivr DAQ Hutch Data Management	4	40		\$ 2,400										
1.06.03.3.2.7	System Test DAQ Hutch Data Management	5	80	\$ 6,400											
1.06.03.3.2.8	Prepare Docs DAQ Hutch Data Management	4	20	\$ 1,600											
1.06.03.3.2.9	AVAIL: DAQ Hutch Data Management Hardware														
1.06.03.3.2.10	AVAIL: DAQ Hutch Data Management Software										\$	24,000			

1.06.03.3.3	<u>Experiment Configuration Control</u>											
1.06.03.3.3.1	Design Experiment Configuration Control	5	80	\$	8,800							
1.06.03.3.3.2	Final Design Review Experiment Configuration Control	4	20	\$	2,200							
1.06.03.3.3.3	COMP: FDR for Experiment Configuration Control											
*	Procurement Preparation								\$	300		
1.06.03.3.3.4	Procure Experiment Configuration Control											
						Serial Cables & Racks		\$	2,000			
						Terminal server	15	2	\$	1,176	\$	2,352
						Switch	47	1	\$	9,967	\$	9,967
						VME Crate/CPU for all of XP	1,2	8	\$	8,289	\$	66,312
						PMC EVR	8	11	\$	2,500	\$	27,500
											\$	108,431
1.06.03.3.3.5	Develop Software Experiment Configuration Control	5	320		\$	25,600						
1.06.03.3.3.5.1	EPICS Database		80									
1.06.03.3.3.5.2	Display Screens		40									
	Archives		40									
	Scripts		80									
	State Machine programs		80									
1.06.03.3.3.6	Fab/Delvr Experiment Configuration Control	5	60		\$	4,800						
1.06.03.3.3.7	Prepare Docs Experiment Configuration Control	4	20		\$	1,600						
1.06.03.3.3.8	AVAIL: Experiment Configuration Control											
											\$	151,431
1.06.03.3.4	<u>Valve Controls</u>											
1.06.03.3.4.1	Design Valve Controls	4	10	\$	1,100							
1.06.03.3.4.2	Final Design Review Valve Controls	4	10	\$	1,100							
1.06.03.3.4.3	COMP: FDR for Valve Controls											
*	Procurement Preparation											
1.06.03.3.4.4	Procure Valve Controls	4										
						valve control, vacuum under vacuun						
						Profile monitor (valve control)	29	1	\$	4,000	\$	4,000
						Acromag IP-440	12	1	\$	515	\$	515
						8002 IP carrier board	36	1	\$	1,492	\$	1,492
											\$	6,007
1.06.03.3.4.5	Develop Software Valve Controls	4	10		\$	800						
1.06.03.3.4.5.1	EPICS Database		5									
1.06.03.3.4.5.2	Display Screens		5									
1.06.03.3.4.6	Fab/Delvr Valve Controls	4	16		\$	960						
1.06.03.3.4.7	Prepare Docs Valve Controls	4	0		\$	-						
1.06.03.3.4.8	AVAIL: Valve Controls Hardware											
1.06.03.3.4.9	AVAIL: Valve Controls Software										\$	9,967
1.06.03.3.5	<u>Vacuum Controls</u>											
1.06.03.3.5.1	Design Vacuum Controls	4	100	\$	11,000							
1.06.03.3.5.2	Final Design Review Vacuum Controls	4	10	\$	1,100							
1.06.03.3.5.3	COMP: FDR for Vacuum Controls											
*	Procurement Preparation											
1.06.03.3.5.4	Procure Vacuum Controls	4										
						(\$7641+modules+connects)						
						AB PLC + modules	53	2	\$	10,860	\$	21,720
						<b>Beamline/Sample Environment</b>						
						Primary Pump ctl	17	1	\$	4,675	\$	4,675
						Ion Gauge Controller option1	18	3	\$	2,085	\$	6,255
						Turbo Pump PS ctl	23	1	\$	3,550	\$	3,550
						Cold Cathode gauge MKS 93	18	2	\$	2,085	\$	4,170
						<b>Small Angle Detector Stage (descoped)</b>						
						Turbo Pump PS ctl.	23	0	\$	6,000	\$	-
						Ion Gauge Controller option1	18	0	\$	2,100	\$	-
						Primary Pump ctl		0	\$	1,000	\$	-
						Cold Cathode gauge MKS 93	18	0	\$	2,100	\$	-
						<b>Laser Optics Control</b>						
						Turbo Pump PS ctl.	23	1	\$	3,550	\$	3,550

Primary Pump ctl	17	3	\$ 4,675	\$ 14,025	
Cold Cathode gauge MKS 93	18	1	\$ 2,085	\$ 2,085	
IP 440A Dig input	12	1	\$ 515	\$ 515	
					\$ 60,545















<u>1.06.03.3.16</u> <u>Diffractometer/Wide Angle Detector Controls</u>				<i>18 stepper, encoder, limit switch</i>			
1.06.03.3.16.1	Design Diffractometer/Wide Angle Detector Controls	5	80	\$	8,800		
	Misc.		40				
1.06.03.3.16.1.1	Convert/Interface SPEC code		40				
1.06.03.3.16.1.2	Move in reciprocal space		20				
1.06.03.3.16.2	Final Design Review Diffractometer/Wide Angle Detect	4	20	\$	2,200		
1.06.03.3.16.3	COMP: FDR for Diffractometer/Wide Angle Detector Controls						
*	Procurement Preparation						
1.06.03.3.16.4	Procure Diffractometer/Wide Angle Detector Controls	5					
						SDS4 Motor + PS (18 ch)	21 5 \$ 4,969 \$ 24,845
						IP-S-8602 4 chan motor ctl	22 5 \$ 876 \$ 4,380
						LVDT or encoder 8 chan	34 3 \$ 3,080 \$ 9,240
						Hytex 8304 transition board	35 2 \$ 584 \$ 1,168
						Hytex 8002 IP carrier	36 2 \$ 1,492 \$ 2,984
						8 chan breakout chassis	33 3 \$ 2,000 \$ 6,000
						IP 440A Dig input	12 2 \$ 515 \$ 1,030
							\$ 49,647
1.06.03.3.16.5	Develop Software Diffractometer/Wide Angle Detector	5	300	\$	24,000		
1.06.03.3.16.5.1	EPICS Database		40				
1.06.03.3.16.5.2	Display Screens		20				
1.06.03.3.16.5.3	Convert/Interface SPEC code		160				
1.06.03.3.16.5.4	Move in reciprocal space		80				
1.06.03.3.16.6	Fab/Delvr Diffractometer/Wide Angle Detector Control	5	30	\$	1,800		
1.06.03.3.16.7	Prepare Docs Diffractometer/Wide Angle Detector Con	4	20	\$	1,600		
1.06.03.3.16.8	AVAIL: Diffractometer/Wide Angle Detector Controls Hardware						
1.06.03.3.16.9	AVAIL: Diffractometer/Wide Angle Detector Controls Software						\$ 88,047
<u>1.06.03.3.17</u> <u>Small Angle Detector Stage Controls (HAS BEEN DESCOPEd)</u>				<i>4 stepper, encoder, limit switch</i>			
1.06.03.3.17.1	Design Small Angle Detector Stage Controls	5	0	\$	-		
1.06.03.3.17.2	Final Design Review Small Angle Detector Stage Conti	5	0	\$	-		
1.06.03.3.17.3	COMP: FDR for Small Angle Detector Stage Controls						
*	Procurement Preparation						\$ -
1.06.03.3.17.4	Procure Small Angle Detector Stage Controls	5					
						SDS4 Motor + PS	21 0 \$ 4,969 \$ -
						IP-S-8602 4 chan motor ctl	22 0 \$ 876 \$ -
						LVDT scanner/encoder 8 cha	34 0 \$ 3,080 \$ -
						Hytex 8304 transition board	35 0 \$ 584 \$ -
						Hytex 8002 IP carrier	36 0 \$ 1,492 \$ -
						8 chan breakout chassis	33 0 \$ 2,000 \$ -
						IP 440A Dig input	12 0 \$ 515 \$ -
							\$ -
1.06.03.3.17.5	Develop Software Small Angle Detector Stage Control	5	0	\$	-		
1.06.03.3.17.5.1	EPICS Database		0				
1.06.03.3.17.5.2	Display Screens		0				
1.06.03.3.17.5.3	Collect SAXS Patterns		0				
1.06.03.3.17.6	Fab/Delvr Small Angle Detector Stage Controls	5	0	\$	-		
1.06.03.3.17.7	Prepare Docs Small Angle Detector Stage Controls	4	0	\$	-		
1.06.03.3.17.8	AVAIL: Small Angle Detector Stage Controls Hardware						
1.06.03.3.17.9	AVAIL: Small Angle Detector Stage Controls Software						\$ -







1.06.03.3.24.8 AVAIL: EO Vacuum Controls Hardware  
1.06.03.3.24.9 AVAIL: EO Vacuum Controls Software

\$ -

1.06.03.3.25 EO Vision Camera Controls (3)

EO HAS BEEN MOVED OFF LUSI

1 sync, 2 non-sync

1.06.03.3.25.1	Design EO Vision Camera Controls	\$	0	\$	-
1.06.03.3.25.2	Final Design Review EO Vision Camera Controls		0	\$	-
1.06.03.3.25.3	COMP: FDR for EO Vision Camera Controls				
*	Procurement Preparation				
1.06.03.3.25.4	Procure EO Vision Camera Controls				

Web Cam controller		0	\$	2,000	\$	-
VME Crate/CPU	1,2	0	\$	9,000	\$	-
VME EVR	3	0	\$	3,800	\$	-
EDT PMC frame grabber	28	0	\$	1,000	\$	-
EDT RCX Camera to fiber	27	0	\$	760	\$	-
PMCSpan2 card extension	59	0	\$	530	\$	-
IP 440A Dig input	12	0	\$	520	\$	-
IP 445 Dig output	14	0	\$	520	\$	-
Trans 200	5	0	\$	250	\$	-
12V Pwr Suppl	60	0	\$	100	\$	-
Agilent 33220A func gen	24	0	\$	1,700	\$	-
Networks & Cabling		0	\$	2,000	\$	-
break-out box		0	\$	200	\$	-

1.06.03.3.25.5	Develop Software EO Vision Camera Controls	0	\$	-	
1.06.03.3.25.5.1	EPICS Database	0			
1.06.03.3.25.5.2	Display Screens	0			
1.06.03.3.25.6	Fab/Delvr EO Vision Camera Controls	0		\$	-
1.06.03.3.25.7	Prepare Docs EO Vision Camera Controls	0	\$	-	
1.06.03.3.25.8	AVAIL: EO Vision Camera Controls Hardware				
1.06.03.3.25.9	AVAIL: EO Vision Camera Controls Software				\$ -

1.06.03.3.26 EO Power Controls

EO HAS BEEN MOVED OFF LUSI

1.06.03.3.26.1	Design EO Power Controls	0	\$	-
1.06.03.3.26.2	Final Design Review EO Power Controls	0	\$	-
1.06.03.3.26.3	COMP: FDR for EO Power Controls			
*	Procurement Preparation			
1.06.03.3.26.4	Procure EO Power Controls			

IP 445 Dig output?		0	\$	520	\$	-
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1.06.03.3.26.5	Develop Software EO Power Controls	0	\$	-	
1.06.03.3.26.5.1	EPICS Database	0			
1.06.03.3.26.5.2	Display Screens	0			
1.06.03.3.26.6	Fab/Delvr EO Power Controls	0		\$	-
1.06.03.3.26.7	Prepare Docs EO Power Controls	0	\$	-	
1.06.03.3.26.8	AVAIL: EO Power Controls Hardware				
1.06.03.3.26.9	AVAIL: EO Power Controls Software				\$ -



1.06.03.3.27	<b><u>EO Environmental Controls</u></b>		<i>EO HAS BEEN MOVED OFF LUSI</i>								
1.06.03.3.27.1	Design EO Environmental Controls	0	\$	-							
1.06.03.3.27.2	Final Design Review EO Environmental Controls	0	\$	-							
1.06.03.3.27.3	COMP: FDR for EO Environmental Controls										
*	Procurement Preparation										
1.06.03.3.27.4	Procure EO Environmental Controls										
					Ambient thermocouples	0	\$	100	\$	-	
					IP330E Analog Input 16 char	11	0	\$	1,150	\$	-
					BK9000 Coupler	54	0	\$	300	\$	-
					Environmental Monitor		0	\$	3,000	\$	-
					KL3314 Rail	55	0	\$	230	\$	-
					Air Conditioning controls?						
					Pressure monitor controls?						
									\$		-
1.06.03.3.27.5	Develop Software EO Environmental Controls	0	\$	-							
1.06.03.3.27.5.1	EPICS Database	0									
1.06.03.3.27.5.2	Display Screens	0									
	PID loop	0									
1.06.03.3.27.6	Fab/Delvr EO Environmental Controls	0		\$	-						
1.06.03.3.27.7	Prepare Docs EO Environmental Controls	0	\$	-							
1.06.03.3.27.8	AVAIL: EO Environmental Controls Hardware										
1.06.03.3.27.9	AVAIL: EO Environmental Controls Software								\$		-
1.06.03.3.28	<b><u>EO Laser System Controls</u></b>				<i>EO HAS BEEN MOVED OFF LUSI</i>						
1.06.03.3.28.1	Design EO Laser System Controls	0	\$	-							
1.06.03.3.28.2	Final Design Review EO Laser System Controls	0	\$	-							
1.06.03.3.28.3	COMP: FDR for EO Laser System Controls										
*	Procurement Preparation								\$		-
1.06.03.3.28.4	Procure EO Laser System Controls										
					Assume ethernet IO						
1.06.03.3.28.5	Develop Software EO Laser System Controls	0	\$	-							
1.06.03.3.28.5.1	EPICS Database	0									
1.06.03.3.28.5.2	Display Screens	0									
1.06.03.3.28.5.3	EPICS Driver & Record Support	0									
1.06.03.3.28.6	Fab/Delvr EO Laser System Controls	0		\$	-						
1.06.03.3.28.7	Prepare Docs EO Laser System Controls	0	\$	-							
1.06.03.3.28.8	AVAIL: EO Laser System Controls Hardware										
1.06.03.3.28.9	AVAIL: EO Laser System Controls Software								\$		-
1.06.03.3.29	<b><u>EO Laser Synchronization Controls</u></b>				<i>EO HAS BEEN MOVED OFF LUSI</i>						
1.06.03.3.29.1	Design EO Laser Synchronization Controls	0	\$	-							
1.06.03.3.29.2	Final Design Review EO Laser Synchronization Controls	0	\$	-							
1.06.03.3.29.3	COMP: FDR for EO Laser Synchronization Controls										
*	Procurement Preparation								0		
1.06.03.3.29.4	Procure EO Laser Synchronization Controls										
					RF phase shifter ICS-121-32-B	0	\$	11,000	\$		-
									\$		0
1.06.03.3.29.5	Develop Software EO Laser Synchronization Controls	0	\$	-							
1.06.03.3.29.6	Fab/Delvr EO Laser Synchronization Controls	0		\$	-						
1.06.03.3.29.7	Prepare Docs EO Laser Synchronization Controls	0	\$	-							
1.06.03.3.29.8	AVAIL: EO Laser Synchronization Controls Hardware										
1.06.03.3.29.9	AVAIL: EO Laser Synchronization Controls Software								\$		-





**1.06.04 Coherent X-Ray Imaging FEH Hutch 2 (CXI)**

1.06.04.1	CXI Req, Design, Test Setup												
WBS	Activity	BOE	DSNM	JUDG	Hours	Eng \$	Prog \$	Tech \$	Item	Count	\$/Unit	M & S \$	Activity Total \$
1.06.04.1.1	<u>Requirements, Design</u>	5	1.15	1.15									
1.06.04.1.1.1	Prepare CXI Requirements	5	1.15	1.15	20	\$ 2,200							
1.06.04.1.1.2	Prepare CXI - Controls ICD	5	1.15	1.15	20	\$ 2,200							
1.06.04.1.1.3	Prepare Final Device List for CXI	5	1.15	1.15	20	\$ 2,200							
1.06.04.1.1.4	<b>Preliminary Design for CXI</b>	5	1.15	1.15	130	\$14,300							
1.06.04.1.1.4.1	Display Screens				10								
1.06.04.1.1.4.2	Database				40								
1.06.04.1.1.4.3	Archive				5								
1.06.04.1.1.4.4	Scans				5								
1.06.04.1.1.4.5	Visualization				5								
1.06.04.1.1.4.6	Scripts				5								
1.06.04.1.1.4.7	State Machine				5								
1.06.04.1.1.4.8	DAQ FEE Interface				5								
1.06.04.1.1.4.9	Electron/ION TOF				5								
1.06.04.1.1.4.10	Particle Injector				5								
1.06.04.1.1.4.11	Wavefront Sensor				5								
1.06.04.1.1.4.12	Data Prprocessing				5								
1.06.04.1.1.4.13	Feature Extraction				10								
1.06.04.1.1.4.14	Compile Design Document				20								
1.06.04.1.1.5	<b>Preliminary Design Review (PDR)</b>	5	1.15	1.15	30	\$ 3,300							
1.06.04.1.1.6	<b>COMP: Preliminary Design Review (PDR)</b>												
1.06.04.1.1.7	<b>Post PDR Design Effort</b>	5	1.15	1.15	5	\$ 550							
1.06.04.1.1.8	<b>Preliminary Design Review Phase 2(PDR)</b>	5	1.15	1.15	30	\$ 3,300							
1.06.04.1.1.9	<b>COMP: Preliminary Design Review Phase 2(PDR)</b>												
1.06.04.1.1.10	<b>Post PDR Design Effort Phase 2</b>	5	1.15	1.15	40	\$ 4,400							
1.06.04.1.2	<u>Development Test Setup</u>												
*	<b>Procurement Preparation</b>												
1.06.04.1.2.1	<b>Procure CXI Specific Hardware &amp; Software</b>	5	1.15	1.15								\$ 25,000	\$ 25,000
1.06.04.1.2.2	<b>Install CXI Specific Hardware &amp; Software</b>	5	1.15	1.15	80			\$ 4,800					
1.06.04.1.2.3	<b>Develop Software for CXI Test Setup</b>	5	1.15	1.15	200		\$ 16,000						
1.06.04.1.2.4	<b>COMP: CXI Test Setup</b>											\$	78,250
	<b>Totals</b>					\$ 32,450	\$ 16,000	\$ 4,800				\$ 25,000	\$ 78,250















Item ID	Description	QTY	Rate	Unit	Cost	Subtotal	Notes
1.06.04.3.9	<u>X-ray Focusing Lens Controls (~ same as for XPP) (HAS BEEN DESCOPEd)</u>						3 stepper motors/encoders, limit switches
1.06.04.3.9.1	Design X-ray Focusing Lens Controls	5	1.15	1.1	0 \$	-	
1.06.04.3.9.1.1	Slow Feedback				0		
1.06.04.3.9.1.2	Calibration				0		
	Misc.				0		
1.06.04.3.9.2	Final Design Review X-ray Focusing Lens Controls	5	1.15	1.1	0 \$	-	
1.06.04.3.9.3	COMP: FDR for X-ray Focusing Lens Controls						
*	Procurement Preparation					\$ -	
1.06.04.3.9.4	Procure X-ray Focusing Lens Controls						
	SDS4 Motor + PS	21	0 \$		4,969 \$	-	
	IP-S-8602 4 chan motor c	22	0 \$		876 \$	-	
	LVDT or encoder 8 chan	34	0 \$		3,080 \$	-	
	Hytec 8304 transition box	35	0 \$		584 \$	-	
	Hytec 8002 IP carrier	36	0 \$		1,492 \$	-	
	8 chan breakout chassis	33	0 \$		2,000 \$	-	
	IP 440A Dig input	12	0 \$		515 \$	-	
						\$ -	
1.06.04.3.9.5	Develop Software X-ray Focusing Lens Controls	5	1.15	1.1	0	\$ -	
1.06.04.3.9.5.1	EPICS Database				0		
1.06.04.3.9.5.2	Display Screens				0		
1.06.04.3.9.5.3	Slow Feedback				0		
1.06.04.3.9.5.4	Calibration				0		
1.06.04.3.9.6	Fab/Delvr X-ray Focusing Lens Controls	5	1.15	1.1	0	\$ -	
1.06.04.3.9.7	Prepare Docs X-ray Focusing Lens Controls	4	1.15	1.1	0	\$ -	
1.06.04.3.9.8	AVAIL: X-ray Focusing Lens Controls Hardware						
1.06.04.3.9.9	AVAIL: X-ray Focusing Lens Controls Software					\$ -	
1.06.04.3.10	<u>Slit Controls (4)</u>						each 4 motors, limit sw, encoder
1.06.04.3.10.1	Design Slit Controls	5	1.15	1.1	5 \$	550	
1.06.04.3.10.2	Final Design Review Slit Controls	4	1.15	1.1	0 \$	-	
1.06.04.3.10.3	COMP: FDR for Slit Controls						
*	Procurement Preparation						
1.06.04.3.10.4	Procure Slit Controls	5	1.15	1.1			
	SDS4 Motor + PS	21	0 \$		4,969 \$	-	
	IP-S-8602 4 chan motor c	22	0 \$		876 \$	-	
	LVDT or encoder 8 chan	34	2 \$		3,080 \$	6,160	
	Hytec 8304 transition box	35	0 \$		584 \$	-	
	Hytec 8002 IP carrier	36	0 \$		1,492 \$	-	
	Serial motor control/powe	68	4 \$		3,982 \$	15,928	
	8 chan breakout chassis	33	0 \$		2,000 \$	-	
	IP 440A Dig input	12	1 \$		515 \$	515	
						\$ 22,603	
1.06.04.3.10.5	Develop Software Slit Controls	5	1.15	1.1	20	\$ 1,600	
1.06.04.3.10.5.1	EPICS Database				10		
1.06.04.3.10.5.2	Display Screens				10		
1.06.04.3.10.6	Fab/Delvr Slit Controls	5	1.15	1.1	60	\$ 3,600	
1.06.04.3.10.7	Prepare Docs Slit Controls	4	1.15	1.1	10	\$ 800	
1.06.04.3.10.8	AVAIL: Slit Controls Hardware						
1.06.04.3.10.9	AVAIL: Slit Controls Software					\$ 29,153	
1.06.04.3.11	<u>Attenuator Controls</u>						1, each 5 pneumatic actuators
1.06.04.3.11.1	Design Attenuator Controls	5	1.15	1.1	5 \$	550	
1.06.04.3.11.2	Final Design Review Attenuator Controls				0 \$	-	
1.06.04.3.11.3	COMP: FDR for Attenuator Controls						

* Procurement Preparation										
1.06.04.3.11.4	Procure Attenuator Controls									
						IP 440A Dig input	12	1	\$ 515	\$ 515
						IP 445 Dig output	14	1	\$ 515	\$ 515
						IP Carrier AVME-9670E	4	1	\$ 700	\$ 700
						Trans 200 rear board	5	1	\$ 250	\$ 250
						Prof. Monitor	29	2	\$ 4,000	\$ 8,000
										\$ 9,980
1.06.04.3.11.5	Develop Software Attenuator Controls	5	1.15	1.1	15				\$ 1,200	
1.06.04.3.11.5.1	EPICS Database				10					
1.06.04.3.11.5.2	Display Screens				5					
1.06.04.3.11.6	Fab/Delvr Attenuator Controls				20				\$ 1,200	
1.06.04.3.11.7	Prepare Docs Attenuator Controls				5				\$ 400	
1.06.04.3.11.8	AVAIL: Attenuator Controls Hardware									
1.06.04.3.11.9	AVAIL: Attenuator Controls Software									\$ 13,330
1.06.04.3.12	<u>Pulse Picker Controls (added back in)</u>									
1.06.04.3.12.1	Design Pulse Picker Controls	5	1.15	1.1	0				\$ -	
	Phase Lock to LCLS Beam				0					
	Misc.				0					
1.06.04.3.12.2	Final Design Review Pulse Picker Controls				0				\$ -	
1.06.04.3.12.3	COMP: FDR for Pulse Picker Controls									
*	Procurement Preparation									
1.06.04.3.12.4	Procure Pulse Picker Controls									\$ 1,450
						2 stepper, one TTL				\$ 1,450
						SDS4 Motor Cntrl + PS	21	0	\$ 4,969	\$ -
						PMC EVR	8	0	\$ 2,500	\$ -
						IP-S-8602 4 chan motor c	22	0	\$ 3,080	\$ -
						LVDT or encoder 8 chan	34	1	\$ 584	\$ 584
						Hytec 8304 transition box	35	0	\$ 1,492	\$ -
						Hytec 8002 IP carrier	36	0	\$ 2,000	\$ -
						Serial motor control/powe	68	1	\$ 3,982	\$ 3,982
						8 chan breakout chassis	33	0	\$ 515	\$ -
						IP 440A Dig input	12	1	\$ 515	\$ 515
						EDT PMC frame grabber	28	1	\$ 900	\$ 900
						EDT RCX Camera to fibe	27	1	\$ 810	\$ 810
						PMCSpan2 card extensi	59	1	\$ 975	\$ 975
						IP 445 Dig output		1	\$ 515	\$ 515
						IP 440A Dig output	12	0	\$ 515	\$ -
										\$ 9,731
1.06.04.3.12.5	Develop Software Pulse Picker Controls	5	1.15	1.1	0				\$ -	
1.06.04.3.12.5.1	EPICS Database				0					
1.06.04.3.12.5.2	Display Screens				0					
1.06.04.3.12.5.3	Phase Lock to LCLS Beam				0					
1.06.04.3.12.6	Fab/Delvr Pulse Picker Controls				30				\$ 1,800	
1.06.04.3.12.7	Prepare Docs Pulse Picker Controls				0				\$ -	
1.06.04.3.12.8	AVAIL: Pulse Picker Controls Hardware									
1.06.04.3.12.9	AVAIL: Pulse Picker Controls Software									\$ 12,981
1.06.04.3.13	<u>KB Mirror Controls ( 2 each)</u>									
1.06.04.3.13.1	Design KB Mirror Controls	5	1.15	1.1	40				\$ 4,400	
1.06.04.3.13.2	Final Design Review KB Mirror Controls				10				\$ 1,100	
1.06.04.3.13.3	COMP: FDR for KB Mirror Controls									
*	Procurement Preparation									
1.06.04.3.13.4	Procure KB Mirror Controls									
						2 sets of following				
						10 stepper,encoder/limit in vacuum				
						2 stepper,encoder/limit in air				















WBS	Activity	BOE	DSNM	JUDG	Hours	Eng \$	Prog \$	Tech \$	Item	Count	\$/Unit	M & S \$	Activity Total \$	Comments
1.06.05	X-ray Correlation Spectroscopy FEH Hutch 1 (XCS)													
1.06.05.1	XCS Req, Design, Test Setup													
1.06.05.1.1	<u>Requirements, Design</u>	5	1.15	1.15										
1.06.05.1.1.1	<b>Prepare XCS Requirements</b>	5	1.15	1.15	15	\$1,650								
1.06.05.1.1.2	<b>Prepare XCS - Controls ICD</b>	5	1.15	1.15	15	\$1,650								
1.06.05.1.1.3	<b>Prepare Final Device List for XCS</b>	5	1.15	1.15	15	\$1,650								
1.06.05.1.1.4	<b>Preliminary Design for XCS</b>	5	1.15	1.15	75	\$8,250								
1.06.05.1.1.4.1	Display Screens				5									
1.06.05.1.1.4.2	Database				5									
1.06.05.1.1.4.3	Archive				5									
1.06.05.1.1.4.4	Scans				5									
1.06.05.1.1.4.5	Visualization				5									
1.06.05.1.1.4.6	Scripts				5									
1.06.05.1.1.4.7	State Machine				5									
1.06.05.1.1.4.8	DAQ FEE Interface				5									
1.06.05.1.1.4.9	Split and Delay Integration				5									
1.06.05.1.1.4.10	Data Processing				5									
1.06.05.1.1.4.11	Feature Extraction				5									
1.06.05.1.1.4.12	Compile Design Document				20									
1.06.05.1.1.5	<b>Preliminary Design Review (PDR)</b>	5	1.15	1.15	20	\$2,200								
1.06.05.1.1.6	<b>COMP: Preliminary Design Review (PDR)</b>													
1.06.05.1.1.7	<b>Post PDR Design Effort</b>	5	1.15	1.15	5	\$550								
1.06.05.1.1.5	<b>Preliminary Design Review Phase 2(PDR)</b>	5	1.15	1.15	20	\$2,200								
1.06.05.1.1.6	<b>COMP: Preliminary Design Review Phase 2(PDR)</b>													
1.06.05.1.1.7	<b>Post PDR Design Effort Phase 2</b>	5	1.15	1.15	20	\$2,200								
1.06.05.1.2	<u>Development Test Setup</u>													
*	<b>Procurement Preparation</b>													
1.06.05.1.2.1	<b>Procure XCS Specific Hardware &amp; Software</b>	5	1.15	1.15								\$ 25,000	\$ 25,000	
1.06.05.1.2.2	<b>Install XCS Specific Hardware &amp; Software</b>	5	1.15	1.15	30			\$ 1,800						
1.06.05.1.2.3	<b>Develop Software for XCS Test Setup</b>	5	1.15	1.15	80		\$ 6,400							
1.06.05.1.2.4	<b>COMP: XCS Test Setup</b>													
	<b>Totals</b>					\$20,350	\$ 6,400	\$ 1,800				\$ 25,000	\$ 53,550	Total 1.06.04

BOE	DSNM	JUDG	Hours	Eng \$	Prog \$	Tech \$	Item	Item #	Count	\$/Unit	M & S \$	Activity Total \$	Comments
1.06.05.2							XCS Standard Hutch Controls						
WBS							Activity						
1.06.05.2.1							Cables & Racks						
1.06.05.2.1.1				80	8,800		Prepare Parts List for Cables & Racks		4	1.15	1.0		
1.06.05.2.1.2				100	11,000		Design Layout for Cables & Racks		4	1.15	1.0		
1.06.05.2.1.3							Procurement Preparation						
1.06.05.2.1.3							Procure Cables & Racks		4	1.15	1.0		
							Hutch Racks		56	5	\$ 10,000	\$ 50,000	
							Cabling		200	\$ 150	\$ 30,000		
							Tunnel Racks		56	4	\$ 10,000	\$ 40,000	
							plumbing		1	\$ 1,000	\$ 1,000		
							trays & floor system		1	\$ 10,000	\$ 10,000		
							Terminal server		15	3	1176	3528	
							switch		47	7	9967	69769	
							KL3314 Rail		55	5	279	1145	
							Installation Contract		200		427	85400	
							Misc. PS etc.		1	\$ 3,000	\$ 3,000		
1.06.05.2.1.4				300		\$ 18,000	EDIA					\$ 293,842	This activity M&S
1.06.05.2.1.5				80		\$ 4,800							
1.06.05.2.1.6							AVAIL: Cables & Racks					\$ 336,442	This activity total
1.06.05.2.2							Workstation						
1.06.05.2.2.1							Procurement Preparation						
1.06.05.2.2.1							Procure Workstation						
1.06.05.2.2.2				50		\$ 3,000	Fab/Delivr Workstation		4	1.15	1.0		
1.06.05.2.2.2.1							CPU & Display		4	1.15	1.0		
1.06.05.2.2.2.2							Local Subnet						
1.06.05.2.2.2.3							WAN to SCCS						
1.06.05.2.2.2.4							Operating System						
1.06.05.2.2.2.5							EPICS						
1.06.05.2.2.2.6							Displays						
1.06.05.2.2.2.7							Database						
1.06.05.2.2.2.8							EELCG						
1.06.05.2.2.3				20		\$ 1,600	System Test Workstation		4	1.15	1.0		
1.06.05.2.2.4				5		\$ 400	Prepare Docs Workstation		4	1.15	1.0		
1.06.05.2.2.5							AVAIL: Workstation Hardware						
1.06.05.2.2.6							AVAIL: Workstation Software					\$ 13,200	This activity total
1.06.05.2.3							Beam Line Processor						
1.06.05.2.3.1							Procurement Preparation						
1.06.05.2.3.1							Procure Beam Line Processor						
1.06.05.2.3.1.1							Crate/CPU		1.2	1	\$ 8,289	\$ 8,289	
1.06.05.2.3.1.2							Global EPICS Network		3	1	\$ 3,705	\$ 3,705	
1.06.05.2.3.1.3							Global 120 Hz Network		3		\$ 90	\$ 270	
1.06.05.2.3.1.3							cPCI crate/cpu		6.7	1	\$ 5,775	\$ 5,775	
1.06.05.2.3.1.4				20		\$ 1,600	Local 120 Hz Network		4	1.15	1.0		
1.06.05.2.3.2				4			Fab/Delivr Beam Line Processor		4	1.15	1.0		
1.06.05.2.3.2.1				4			Operating System		4	1.15	1.0		
1.06.05.2.3.2.2				4			EPICS						
1.06.05.2.3.2.3				4			Displays						
1.06.05.2.3.2.4				4			Database						
1.06.05.2.3.2.5				5		\$ 400	DAQ Comm Software		4	1.15	1.0		
1.06.05.2.3.3				10		\$ 800	System Test Beam Line Processor		4	1.15	1.0		
1.06.05.2.3.4							Prepare Docs Beam Line Processor						
1.06.05.2.3.5							AVAIL: Beam Line Processor Hardware						
1.06.05.2.3.6							AVAIL: Beam Line Processor Software					\$ 20,839	This activity total
1.06.05.2.4							Channel Access Gateway						
1.06.05.2.4.1							Procurement Preparation						
1.06.05.2.4.1.1							Procure Channel Access Gateway		1	1.0	1.0		
1.06.05.2.4.1.2							Crate/CPU		1.2	1	\$ 8,289	\$ 8,289	
1.06.05.2.4.1.2							Local EPICS Network		2	\$ 90	\$ 180		
1.06.05.2.4.2				20		\$ 1,600	Fab/Delivr Channel Access Gateway		1	1.0	1.0		
1.06.05.2.4.2.1				4			Operating System						
1.06.05.2.4.2.2				4			EPICS						
1.06.05.2.4.2.3				12			Configure Gateway Software						
1.06.05.2.4.3				20		\$ 1,600	System Test Channel Access Gateway		4	1.1	1.0		
1.06.05.2.4.4				5		\$ 400	Prepare Docs Channel Access Gateway		4	1.1	1.0		
1.06.05.2.4.5							AVAIL: Channel Access Gateway Hardware						
1.06.05.2.4.6							AVAIL: Channel Access Gateway Software					\$ 12,069	This activity total





1.06.05.3.3.5	Develop Software Experiment Configuration Contrc	5	1.15	1.1	220		\$	17,600		
1.06.05.3.3.5.1	EPICS Database				80					
1.06.05.3.3.5.2	Display Screens				40					
	Archives				20					
	Scripts				40					
	State Machine programs				40					
1.06.05.3.3.6	Fab/Delvr Experiment Configuration Control	5	1.15	1.1	20		\$	1,600		
1.06.05.3.3.7	Prepare Docs Experiment Configuration Control	4	1.15	1.1	20		\$	1,600		
1.06.05.3.3.8	AVAIL: Experiment Configuration Control								\$	117,042
1.06.05.3.4	<u>Valve Controls 0)</u>									
1.06.05.3.4.1	Design Valve Controls	5	1.1	1.1	0	\$	-			0 valves
1.06.05.3.4.2	Final Design Review Valve Controls	4	1.1	1.1	0	\$	-			
1.06.05.3.4.3	COMP: FDR for Valve Controls									
*	Procurement Preparation									
1.06.05.3.4.4	Procure Valve Controls	4	1.1	1.1						
										Profile monitor (valve control) 29 0 \$ 4,000 \$ -
										Acromag IP-440 12 0 \$ 415 \$ -
										8002 IP carrier board 36 0 \$ 1,355 \$ -
									\$	-
1.06.05.3.4.5	Develop Software Valve Controls	4	1.1	1.1	0	\$	-			
1.06.05.3.4.5.1	EPICS Database				0					
1.06.05.3.4.5.2	Display Screens				0					
1.06.05.3.4.6	Fab/Delvr Valve Controls	4	1.1	1.1	0	\$	-			
1.06.05.3.4.7	Prepare Docs Valve Controls	4	1.1	1.1	0	\$	-			
1.06.05.3.4.8	AVAIL: Valve Controls Hardware									
1.06.05.3.4.9	AVAIL: Valve Controls Software								\$	-
1.06.05.3.5	<u>Vacuum Controls</u>									Large&small angle stage, 2-d detector
1.06.05.3.5.1	Design Vacuum Controls	4	1.1	1.1	5	\$	550			
1.06.05.3.5.2	Final Design Review Vacuum Controls	4	1.1	1.1	0	\$	-			
1.06.05.3.5.3	COMP: FDR for Vacuum Controls									
*	Procurement Preparation									
1.06.05.3.5.4	Procure Vacuum Controls	4	1.1	1.1						
										AB PLC + modules 53 2 \$ 10,860 \$ 21,720
										<b>large angle detector stage</b>
										Turbo Pump PS ctl. 23 2 \$ 3,550 \$ 7,100
										Primary Pump ctl 2 \$ 1,000 \$ 2,000
										Ion pump PS ctl 17 2 \$ 4,675 \$ 9,350
										Cold Cathode gauge MKS 937 18 1 \$ 2,085 \$ 2,085
										<b>small angle detector stage (descoped)</b>
										Turbo Pump PS ctl. 23 0 \$ 3,550 \$ -
										Primary Pump ctl 0 \$ 1,000 \$ -
										Ion pump PS ctl 17 0 \$ 4,675 \$ -
										Cold Cathode gauge MKS 937 18 0 \$ 2,085 \$ -
										<b>2-D detector</b>
										Cold Cathode gauge MKS 937 18 2 \$ 2,085 \$ 4,170
										IP 440A Dig input 12 1 \$ 515 \$ 515
									\$	46,940
1.06.05.3.5.5	Develop Software Vacuum Controls	4	1.1	1.1	40	\$	3,200			
1.06.05.3.5.5.1	EPICS Database				10					
1.06.05.3.5.5.2	Display Screens				10					
1.06.05.3.5.5.3	Ladder Logic				20					
1.06.05.3.5.6	Fab/Delvr Vacuum Controls	4	1.1	1.1	40	\$	2,400			





1.06.05.3.8.2	Final Design Review Intensity-Position Monitor Cor	4	1.15	1.1	0	\$	-		Amplifier PS + ADC					
1.06.05.3.8.3	COMP: FDR for Intensity-Position Monitor Controls								each 4 to 16 diode amp outputs					
*	Procurement Preparation													
1.06.05.3.8.4	Procure Intensity-Position Monitor Controls	5	1.15	1.1										
									SDS4 Motor Driver + PS	21	0	\$	4,969	\$ - (4-ch each)
									IP-S-8602 4 chan motor ctrl	22	0	\$	876	\$ -
									LVDT or encoder 8 chan	34	1	\$	3,080	\$ 3,080
									Hytec 8304 transition board	35	0	\$	584	\$ -
									Hytec 8002 IP carrier	36	0	\$	1,492	\$ -
									8 chan breakout chassis	33	0	\$	2,000	\$ -
									IP 440A Dig input	12	0	\$	515	\$ -
									ICS-121-32-B	30	1	\$	10,995	\$ 10,995
									Serial motor control/power	68	1	\$	3,982	\$ 3,982
									ICS-130-32	31	1	\$	11,995	\$ 11,995
									Power Supply	1	1	\$	2,000	\$ 2,000
									CBL-130	32	1	\$	160	\$ 160
														\$ 32,212
1.06.05.3.8.5	Develop Software Intensity-Position Monitor Contr	5	1.15	1.1	20	\$	1,600							
1.06.05.3.8.5.1	EPICS Database				10									
1.06.05.3.8.5.2	Display Screens				10									
1.06.05.3.8.6	Fab/Delvr Intensity-Position Monitor Controls	5	1.15	1.1	20		\$ 1,200							
1.06.05.3.8.7	Prepare Docs Intensity-Position Monitor Controls	4	1.15	1.1	10	\$	800							
1.06.05.3.8.8	AVAIL: Intensity-Position Monitor Controls Hardware													
1.06.05.3.8.9	AVAIL: Intensity-Position Monitor Controls Software													\$ 36,362
1.06.05.3.9	<u>Slit Controls (7)</u>								each 4 motors, limit sw, encoder					
1.06.05.3.9.1	Design Slit Controls	5	1.15	1.1	5	\$	550		5 in tunnel, 3 in hutch, all costed here (historically)					
1.06.05.3.9.2	Final Design Review Slit Controls	4	1.15	1.1	0	\$	-							
1.06.05.3.9.3	COMP: FDR for Slit Controls													
*	Procurement Preparation													
1.06.05.3.9.4	Procure Slit Controls	5	1.15	1.1										
									SDS4 Motor + PS	21	0	\$	4,969	\$ -
									IP-S-8602 4 chan motor ctrl	22	0	\$	876	\$ -
									LVDT or encoder 8 chan	34	2	\$	3,080	\$ 6,160
									Hytec 8304 transition board	35	0	\$	584	\$ -
									Hytec 8002 IP carrier	36	0	\$	1,492	\$ -
									Serial motor control/power	68	5	\$	3,982	\$ 19,910
									8 chan breakout chassis	33	0	\$	2,000	\$ -
									IP 440A Dig input	12	1	\$	515	\$ 515
														\$ 26,585
1.06.05.3.9.5	Develop Software Slit Controls	5	1.15	1.1	20	\$	1,600							
1.06.05.3.9.5.1	EPICS Database				10									
1.06.05.3.9.5.2	Display Screens				10									
1.06.05.3.9.6	Fab/Delvr Slit Controls	5	1.15	1.1	20		\$ 1,200							
1.06.05.3.9.7	Prepare Docs Slit Controls	4	1.15	1.1	10	\$	800							
1.06.05.3.9.8	AVAIL: Slit Controls Hardware													
1.06.05.3.9.9	AVAIL: Slit Controls Software													\$ 30,735
1.06.05.3.10	<u>Attenuator Controls</u>								one of this, each 10 pneumatic actuators					
1.06.05.3.10.1	Design Attenuator Controls	5	1.15	1.1	20	\$	2,200							
1.06.05.3.10.2	Final Design Review Attenuator Controls				5	\$	550							
1.06.05.3.10.3	COMP: FDR for Attenuator Controls													
*	Procurement Preparation													
1.06.05.3.10.4	Procure Attenuator Controls													
									IP 440A Dig input	12	1	\$	515	\$ 515







1.06.05.4 *Beam Transport to FEH*  
WBS Activity

BOE	DSNM	JUDG	Hours	Eng \$	Prog \$	Tech \$	Item	Item #	Count	\$/Unit	M & S \$	Activity Total \$	
							<i>8 valves + 2 stoppers (just down stream of the mono and split&amp;delay)</i>						
1.06.05.4.1	<b><u>Valve Controls ( 8)</u></b>												
1.06.05.4.1.1	5	1.1	1.1	5	\$ 550								
1.06.05.4.1.2	4	1.1	1.1	0	\$ -								
1.06.05.4.1.3	COMP: FDR for Valve Controls												
*	Procurement Preparation												
1.06.05.4.1.4	4	1.1	1.1										
							Profile monitor (valve control)	29	2	\$ 4,000	\$ 8,000		
							Acromag IP-440	12	1	\$ 515	\$ 515		
							8002 IP carrier board	36	1	\$ 1,492	\$ 1,492		
												\$ 10,007	
1.06.05.4.1.5	4	1.1	1.1	20	\$ 1,600								
1.06.05.4.1.5.1	EPICS Database			10									
1.06.05.4.1.5.2	Display Screens			10									
1.06.05.4.1.6	4	1.1	1.1	30		\$ 1,800							
1.06.05.4.1.7	4	1.1	1.1	10		\$ 600							
1.06.05.4.1.8	AVAIL: Valve Controls Hardware												
1.06.05.4.1.9	AVAIL: Valve Controls Software											\$ 14,557	
1.06.05.4.2	<b><u>Vacuum Controls</u></b>						<i>added Monochromator, split&amp;delay</i>						
1.06.05.4.2.1	4	1.1	1.1	5	\$ 550								
1.06.05.4.2.2	4	1.1	1.1	0	\$ -								
1.06.05.4.2.3	COMP: FDR for Vacuum Controls												
*	Procurement Preparation												
1.06.05.4.2.4	4	1.1	1.1										
							AB PLC + modules	53	2	\$ 10,860	\$ 21,720		
							XRT						
							Primary Pump ctl	23	3	\$ 3,550	\$ 10,650		
							Ion pump PS ctl	17	3	\$ 4,675	\$ 14,025		
							Cold Cathode gauge MKS 937	18	3	\$ 2,085	\$ 6,255		
							<b>Monochromator</b>						
							Primary Pump ctl	23	1	\$ 3,550	\$ 3,550		
							Ion pump PS ctl	17	2	\$ 4,675	\$ 9,350		
							Cold Cathode gauge MKS 937	18	1	\$ 2,085	\$ 2,085		
							<b>Split&amp;Delay</b>						
							Turbo Pump PS ctl.	23	1	\$ 3,550	\$ 3,550		
							Ion pump PS ctl	17	2	\$ 4,675	\$ 9,350		
							Cold Cathode gauge MKS 937	18	1	\$ 2,085	\$ 2,085		
												\$ 82,620	
1.06.05.4.2.5	4	1.1	1.1	40	\$ 3,200								
1.06.05.4.2.5.1	EPICS Database			10									
1.06.05.4.2.5.2	Display Screens			10									
1.06.05.4.2.5.3	Ladder Logic			20									
1.06.05.4.2.6	4	1.1	1.1	60		\$ 3,600							
1.06.05.4.2.7	4	1.1	1.1	10		\$ 800							
1.06.05.4.2.8	AVAIL: Vacuum Controls Hardware												
1.06.05.4.2.9	AVAIL: Vacuum Controls Software											\$ 90,770	
1.06.05.4.3	<b><u>Pop-In Profile Monitor Controls (4)</u></b>						<i>Pneumatic Actuator</i>						
1.06.05.4.3.1	5	1.15	1.1	5	\$ 550								
1.06.05.4.3.2	4	1.15	1.1	0	\$ -								
1.06.05.4.3.3	COMP: FDR for Pop-In Profile Monitor Controls												
*	Procurement Preparation												
							Camera, 120Hz, one at a time						
							3 at 30Hz, 1 at 120Hz						









1.06.06  
WBS Offline Data Management  
Activity

BOE	Hours	Eng \$	Prog \$	Tech \$	Item	Item #	Count	\$/Unit	M & S \$	Activity Totals \$	Comments
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Details in P3

The S number in P3 is the correct one

408500

# **Component Item List**

Num	Item	Description	PO.# CC	Price	Supplier
1	VME Crate	VME Crate	Quote	\$ 4,695	Elma Electronics Inc.
2	VME CPU	VME 6100 PPC CPU	123594	\$ 3,594	Arrow Electronics Inc
3	VME EVR	VME Event Receiver	122842	\$ 3,705	Micro Research Finland Oy
4	AVME9670	VME 64X 6U IP carrier Board w/ 4 ports	133242	\$ 700	Acromag Inc
5	TRANS-200	VME 64X Transition Module	133242	\$ 250	Acromag Inc
6	cPCI crate	Compact PCI Crate	131014	\$ 2,695	Elma Electronics Inc.
7	cPCI CPU	Compact PCI CPU	131010	\$ 3,080	Concurrent Technologoies
8	PMC EVR	PMC Event Receiver	134019	\$ 2,500	Micro Research Finland Oy
9	EVR Transition	EVR TTB-200 Transition module	134019	\$ 1,541	Micro Research Finland Oy
10	Workstation	Dell with dual screens	128298	\$ 4,082	Dell Marketing Lp
11	IP330E	Analog input module with 16 differential	133242	\$ 1,150	Acromag Inc
12	IP440A-2E	Digital Input, 32 Channel	133242	\$ 515	Acromag Inc
13	IP231-16E	Analog output module; 16 channels	133242	\$ 1,176	Acromag Inc
14	IP445-E	Digital Output 32 Channels	133242	\$ 515	Acromag Inc
15	70001978	Terminal Server Digi TS MEI RJ-45	133240	\$ 1,176	Cdw/Computer Centers Inc
16	70000901	Terminal Server Digi II 16 port RJ45	133240	\$ 1,282	Cdw/Computer Centers Inc
17	MPC-2-110-232-N-N 001	Ion pump power supply controller	133253	\$ 4,675	Gamma Vacuum
18	IGC100/13	Ion gauge controller option 1,3	133238	\$ 2,085	Stanford Research Systems
19	O100IG	Second ion gauge channel	133238	\$ 195	Stanford Research Systems
20	O100IGRM	Rack mount tray for one or two IGC100s	133238	\$ 150	Stanford Research Systems
21	SMDS4-5P Five phase	Stepper motor driver with power supply	121830	\$ 4,969	Wiener Plein & Baus Corp
22	IP-SM-8601	4 channels of stepper motor control	133351	\$ 876	Hytec Electronics
23	Turbo pump PS ctl	Turbo pump power supply controller	From XES	\$ 3,550	Varian
24	33220A	20Mhz Funtion/Arbitrary Waveform Generator	133234	\$ 1,667	Agilent Technologies
25	Cold Cathode Vacuum Guage	MKS 937 Guage and controller	124554	\$ 1,311	Mks Instruments Inc
26	Pulnix Camera	Camera, PS link, UV option, PS	121203	\$ 2,357	Visys Inc
27	Camera to Fiber	Fiber optic adapter for camera link	132096	\$ 810	Engineering Design Team Inc
28	Frame Grabber	PCI (DV) digital video interface board with	133290	\$ 900	Engineering Design Team Inc
29	SLAc Profile Monitor		SLAC #385-002	\$ 4,000	SLAC custom
30	ICS-121-32-B Sig. cond.	32 chan 300 kHz	quote	\$ 10,995	Radstone Technology Corporation
31	ICS-130-32	32 Chan ADC	quote	\$ 11,995	Radstone Technology Corporation
32	CBL-130	26 conductor ribbon cable	Lewis Email	\$ 160	
33	LVDT Break Out Box	8 channels	SLAC #380-211	\$ 2,000	SLAC custom
34	LVDT Model V550	VME module Model V550, 8 channel LVDT	133251	\$ 3,080	Highland Technology
35	8304 transition	8304 transistion board	121830	\$ 584	Wiener Plein & Baus Corp
36	8002 IP VME Carrier	8002 IP VME Carrier Board	121830	\$ 1,492	Wiener Plein & Baus Corp
37	Computar Smart Lens	H10Z1218M Lens	123748	\$ 533	Adi
38	Acqiris Digitizer	DC282 8GHz 10 bit 4 channel cPCI	131123	\$ 22,790	Agilent Technologies
39	CIM	Cluster Interconnect Module	Gunther	\$ 4,000	SLAC custom
40	CEM	Reconfigurable Cluster Element Module	Gunther	\$ 4,000	SLAC custom
41	CIM backplane	CIM backplane	Gunther	\$ 2,000	SLAC custom
42	ATCA Crate	ATCA Crate 14 slot	120444	\$ 6,922	Kaparel Corp
43	5KV Power Supply controler	5KV Power Supply controler	134029	\$ 3,193	Wiener Plein & Baus Corp

44	6Kv bias PS ctl	6Kv bias PS ctl	134029	\$ 3,208	Wiener Plein & Baus Corp
45	Pulsed 2KV extraction PS ctl	Pulsed 2KV extraction PS ctl	AVRH-2-B Price	\$ 13,182	Avtech avrh-2-b pulser/
46	Big Switch	MCC network switch	133833	\$ 64,910	Alaska Native Technologies Llc
47	Small Switch	Cisco Catalyst 3750G-48TS	From XES	\$ 9,967	Microware Inc
48	Disk farm	Raid array	R33407	\$ 148,700	Electronix Corp
49	Sun Server	X4500 + 17 Gbytes	Luitz email	\$ 27,000	
50	NIC card	Gigabit Network Interface Card	R13202	\$ 58	Dell Marketing Lp
51	Experiment specific H/W	Experiment specific H/W	LCLS Test Stand	\$ 54,872	Spreadsheet from Sheng
52	Isolation Valves Control	Not yet decided, don't need for slow valves		\$ 15,000	
53	PLC	One per hutch	136308	\$ 10,860	Buckles-Smith Electric
54	BK9000/KL9010 Coupler	BK9000 Coupler	Email from Sheng	\$ 283	Credit Card
55	KL3314 Rail	KL3314 Rail	Email from Sheng	\$ 229	Credit Card
56	Racks	Rack, double bay, and cooling	131603	\$ 10,000	Optima Electronic Packaging Systems
57	SLAC Solenoid Controller 8-channel		SLAC #385-001	\$ 4,000	SLAC custom
58	Newport motor controller		125507	\$ 6,897	
59	PMC expander card		124162	\$ 975	Arrow/Zeus Electronics
60	12V power supply		121203	\$ 91	Visys Inc.
61	N/A				
62	N/A				
63	N/A				
64	MPS link-node		email from Norum	\$ 7,236	SLAC custom
65	Cables	for each cable, labor install		\$ 427	email from previous contract
66	Motor Power Supply	Power Supply for 8 motors incl cables		\$2,200	SLAC custom
67	Motor Controls Serial			\$ 1,782	for up to 16 motors TS \$1282 (see #16) +
68	Set of power-supply and control	#66 plus #67		\$ 3,982	



# QUOTES



## QUOTATION

John Dusatko  
 Stanford Liner Accelerator Center  
 2575 Sand Hill Road, M/s 50  
 Menlo Park, CA94025

Date: 10/11/07  
 Quote#: AA74201a

(P) 650-926-4017  
 (E) Jedu@slac.stanford.edu

ELMA Electronic, Inc. is pleased to offer Stanford Liner Accelerator Center the following BUDGETARY pricing. The quotation is based upon ELMA's standard terms and conditions.

Item	Part Number	Price Ea.	Qty	Delivery
1.	3908OPX48Y3HQ21-SLAC	\$3,875.00	100 +	6 - 8 Weeks ARO
		\$4,045.00	50 - 99	
		\$4,175.00	25 - 49	
		\$4,295.00	10 - 24	
		\$4,485.00	5 - 9	
		<del>\$4,695.00</del>	1 - 4	
2.	DNRE	\$650.00	1 Lot	

**Description:**

The Above part number 39C08OPX48Y3HQ21-SLAC is based on an Elma Express Chassis type 39C; desktop/rack mount enclosure. This is configured to meet SLAC specification for the LCLS VME Crate Specification dated July 23, 2007: Following are the technical details:

- 39C = Type 39C with overall dimension of 4U high x 84HP wide x 290mm deep
- 08 = 8 slot card cage to accommodate 6U x 160 mm cards in the front and 6U x 80 mm cards in the rear, compliant to IEEE 1101.10/11
- OP = 8 slot high performance VME64x backplane with 160 pin, 5.5mm J1, 17mm 160 pin J2 with shrouds, with J0 connector
- X = Without mounting provisions for drives
- 4 = height is 4U
- 8 = 84 HP wide
- Y = with Rear IO
- 3 = 290mm depth
- H = horizontal card orientation
- Q2 = Has qty 3, 250 watt plug-in power supplies, PowerOne P/n CPA250-4530; Input 90 -264 VAC; each psu has outputs of 5V@40A; 3.3V@40A; 12V@5.5V; -12V@2A (See attached spec sheet)
- 1 - Type 39, Level 1 shielding
- SLAC - Has the ELMA Sys Mon for monitoring the power supply voltages and temperature ( attached is the spec sheet)
- All extrusions and card guides fully compliant to IEEE 1101.10/11 standards
- Integrated cooling with side-to-side air flow.
- On/Off switch, AC in, and AC power cord
- All units are shipped fully assembled, wired and tested with a two Year Warranty

<http://www.elma.com/Admin/ProductionFiles1/ProductTypeFile/226/English/cpciType394uh.pdf>



2.	3904OPX38Y3HP21-SLAC	\$2,945.00	100 +	6 - 8 Weeks ARO
		\$2,995.00	50 - 99	
		\$3,095.00	25 - 49	
		\$3,195.00	10 - 24	
		\$3,285.00	5 - 9	
		\$3,395.00	1 - 4	
2.	DNRE	\$650.00	1 Lot	

**Description:**

The Above part number 39C04OPX28Y3HG21-SLAC is based on an Elma Express Chassis type 39C; desktop/rack mount enclosure. This is configured to meet SLAC specification for the LCLS VME Crate Specification dated July 23, 2007: Following are the technical details:

- 39C = Type 39C with overall dimension of 2U high x 84HP wide x 290mm deep
- 04 = 4 slot card cage to accommodate 6U x 160 mm cards in the front and 6U x 80 mm cards in the rear, compliant to IEEE1101.10/11
- OP = 4 slot high performance VME64x backplane with 160 pin, 5.5mm J1, 17mm 160 pin J2 with shrouds, with J0 connector
- X = Without mounting provisions for drives
- 3 = height is 3U
- 8 = 84 HP wide
- Y = with Rear IO
- 3 = 290mm depth
- H = horizontal card orientation
- P2 = Has dual, 250 watt plug-in power supplies, PowerOne P/n CPA250-4530; Input 90 -264 VAC; each psu has outputs of 5V@40A; 3.3V@40A; 12V@5.5V; -12V@2A (See attached spec sheet)
- 1 - Type 39, Level 1 shielding
- SLAC - Has the ELMA Sys Mon for monitoring the power supply voltages and temperature ( attached is the spec sheet)
- All extrusions and card guides fully compliant to IEEE 1101.10/11 standards
- Integrated cooling with side-to-side air flow.
- On/Off switch, AC in, and AC power cord
- All units are shipped fully assembled, wired and tested with a two Year Warranty

[http://www.elma.com/Admin/ProductionFiles1/ProductTypeFile/94/English/vme39\\_2u.pdf](http://www.elma.com/Admin/ProductionFiles1/ProductTypeFile/94/English/vme39_2u.pdf)



Home SLAC Directory Purchasing Property Stores Financials Tools Forms Travel Security Feedback Use

[Printable Version](#)

2

0000132407

Search Req

Approved

Type: **Regular Purchase Requisition**

Requisition: **0000132407**

Date: 05/24/07

Buyer: Freeman, Beverly J.

Entered by: LUPE

[All Comments](#)

Requestor: Haller, Gunther

Suggested Vendor: Arrow Electronics Inc

Item	Qty	Unit \$	Unit	Est Cost	Description	P.O.	Charge No.	Dlvr To	PO Cost
1	6	3,594.000	EA	21,564.000	B280 - LCLS-MVME6100-0163 PowerPc Processor Boards	69584	9242406	084 - B208	20,988.000
<< CPU's for XES Buyer: Beverly Freeman. >>									
Totals				\$21,564.000					\$20,988.000

**Purchase Order: 69584**

TYPE: Regular Purchase Order

PO Date: 6/7/2007

Buyer: FREY

Comment: Stanford Linear Accelerator Center Terms and Conditions for Commercial Supplies M366 Rev 2 (10/06), are attached hereto and incorporated by reference.

Approved: Arrow Electronics Inc

Vendor:

PO Line	Req Line	Qty	Unit Price	Unit	P.O. Cost	Description	Due Date	Charge No.	Lo
						(B280) Motorola PowerPc Processors,			084

1	1	6	3,498.00	EA	20,988.00	#MVME6100-0163. (ref. vendor quote dated 5/31/2007)	6/29/2007	9242406	B2
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**Voucher Information:**

Vndr	Invoice	Invoice Date	Vchr	Acctg Date	PO ID	PO Line	Description	Chrg No.	Qty	Am
3704	7585437	6/25/2007	244090	7/5/2007	69584	1.1	(B280) Motorola PowerPc Proces	9242406	6	\$20,9
<b>Totals</b>									<b>6</b>	<b>\$20,9</b>

**Payment Information:**

Voucher	Vendor	Payment Method	Date	Paid Check#	Amount
244090	3704	System Check	7/25/2007	058702	\$20,988.00
244090	3704	System Check	7/25/2007	058702	\$ .00
<b>Totals</b>					<b>\$20,988.00</b>

[ [Feedback](#) | [SLAC](#) ]  
 Owner: [bis-admin](#)

3

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0000134019

Search Req

Approved

Type: **Regular Purchase Requisition**

Requisition: **0000134019**

Date: 08/21/07

Buyer: Villanueva, Vincent C.

Entered by: LUPE

All Comments

Requestor: Haller, Gunther

Suggested Vendor: Micro Research Finland Oy

Item	Qty	Unit \$	Unit	Est Cost	Description	P.O.	Charge No.	Dlvr To	PO Cost
1	3	1,186.000	EA	3,558.000	(B280) LCLS, Model EVR-TTB- 200 VME TTL Rear Transition Module	70951	9242407	084 - B208	3,558.000
<< Delivery 4-weeks, to place order email: Jukka Pietarinen, jukka.pietarinen@mrf.fi >>									
2	8	1,991.000	EA	15,928.000	(B280) LCLS, Model PMC-EVR- 200 PMC Event Receiver Module	70951	9242407	084 - B208	15,928.000
<< Delivery 4-weeks, to place order email: Jukka Pietarinen, jukka.pietarinen@mrf.fi >>									
3	1	3,705.000	EA	3,705.000	(B280) LCLS, Model VME-EVR- 230RF VME Event Receiver module with RF	70951	9242407	084 - B208	3,705.000

3

					recovery outputs			
<< Delivery 4-weeks, to place order email: Jukka Pietarinen, jukka.pietarinen@mrf.fi >>								
Totals				\$23,191.000				\$23,191.000

**Purchase Order: 70951**

TYPE: Regular Purchase Order

PO Date: 8/27/2007

Buyer: CRUMB

Comment: Stanford Linear Accelerator Center Terms and Conditions for Commercial Supplies ar 3 (07/07), are attached hereto and incorporated by reference. You are hereby authorized on this order based upon a Waiver of the "Buy American Act" Article of the Terms an has been made by the Department of Energy or Stanford Linear Accelerator Center on

Approved Micro Research Finland Oy

Vendor:

PO Line	Req Line	Qty	Unit Price	Unit	P.O. Cost	Description	Due Date	Charge No.
1	<u>1</u>	3	1,186.00	EA	3,558.00	Model EVR-TTB-200 VME TTL Rear Transition Module	10/8/2007	9242407
2	<u>2</u>	8	1,991.00	EA	15,928.00	Model PMC-EVR-200 PMC Event Receiver Module	10/8/2007	9242407
3	<u>3</u>	1	3,705.00	EA	3,705.00	Model VME-EVR-230RF VME Event Receiver module with RF recovery outputs	10/8/2007	9242407

**Voucher Information:**

Vndr	Invoice	Invoice Date	Vchr	Acctg Date	PO ID	PO Line	Description	Chrg No.	Qty
<u>12122</u>	MRF07026	9/10/2007	250578	9/25/2007	70951	1.1	Model EVR-TTB- 200 VME TTL Rear	9242407	3
<u>12122</u>	MRF07026	9/10/2007	250578	9/25/2007	70951	2.1	Model PMC-EVR- 200 PMC Event Re	9242407	8

4

0000133242

Search Req

Approved

Type: **Regular Purchase Requisition**

Requisition: **0000133242**

Date: 07/11/07

Buyer: Villanueva, Vincent C.

Entered by: LUPE

All Comments

Requestor: Salgado, Guadalupe

Suggested Vendor: Acromag Inc

Item	Qty	Unit \$	Unit	Est Cost	Description	P.O.	Charge No.	Dlvr To	PO Cost
1	2	700.000	EA	1,400.000	LCLS Project, AVME9670, VME 64X 6U IP carrier Board w/ 4 ports	70210	9242406	084 - B252	1,400.000
<< Stock item Per Quote number: DY071107-02 >>									
2	2	250.000	EA	500.000	LCLS Project, TRANS-200 VME 64X Transition Module w/ four SCSI-2 ports	70210	9242406	084 - B252	500.000
<< Stock Item per Quote number: DY071107-02 >>									
3	1	515.000	EA	515.000	LCLS Project, IP440A-2E Digital Input, 32 Channel +/-16V to +/-40V	70210	9242406	084 - B252	515.000
<< Stock Item per Quote number: DY071107-02 >>									
4	1	515.000	EA	515.000	LCLS Project, IP445-E Digital Output 32 Channels,	70210	9242406	084 - B252	515.000

					Optically Isolated +/- 60V						
<< Stock Item per quote number: DY071107-02 >>											
5	1	1,150.000	EA	1,150.000	LCLS Project, IP330E Analog input module with 16 differential or 32 single-ended inputs with 16-bit A/D	70210	9242406	084 - B252	1,150.000		
<< stock item per Quote: DY071107-02 >>											
6	1	1,350.000	EA	1,350.000	LSCLS Project, IP231-16E, Analog output module; 16 channels; extended temperature range	70210	9242406	084 - B252	1,350.000		
<< Stock item per quote number: DY071107-02 >>											
Totals				\$5,430.000						\$5,430.000	

**Purchase Order: 70210**

Dispa

Rec

TYPE: Regular Purchase Order  
 PO Date: 7/16/2007  
 Buyer: CRUMB  
 Comment: Stanford Linear Accelerator Center Terms and Conditions for Commercial Supplies and Services, M Rev 2 (10/06), are attached hereto and incorporated by reference.  
 Approved: Acromag Inc  
 Vendor:

PO Line	Req Line	Qty	Unit Price	Unit	P.O. Cost	Description	Due Date	Charge No.	Location	Da Rece
1	1	2	700.00	EA	1,400.00	LCLS Project, AVME9670, VME 64X 6U IP carrier Board w/ 4 ports	7/31/2007	9242406	084 - B252	07
2	2	2	250.00	EA	500.00	LCLS Project, TRANS-200 VME 64X Transition Module w/ four SCSI-2 ports	7/31/2007	9242406	084 - B252	07/30

3	<u>3</u>	1	515.00	EA	515.00	LCLS Project, IP440A-2E Digital Input, 32 Channel +/- 16V to +/-40V	7/31/2007	9242406	084 - B252	07/30
4	<u>4</u>	1	515.00	EA	515.00	LCLS Project, IP445-E Digital Output 32 Channels, Optically Isolated +/-60V	7/31/2007	9242406	084 - B252	07/30
5	<u>5</u>	1	1,150.00	EA	1,150.00	LCLS Project, IP330E Analog input module with 16 differential or 32 single- ended inputs with 16-bit A/D	7/31/2007	9242406	084 - B252	07/30
6	<u>6</u>	1	1,350.00	EA	1,350.00	LSCLS Project, IP231-16E, Analog output module; 16 channels; extended temperature range	8/24/2007	9242406	084 - B252	07/30

## Voucher Information:

Vndr	Invoice	Invoice Date	Vchr	Acctg Date	PO ID	PO Line	Description	Chrg No.	Qty	Amount
<u>4043</u>	28158	7/24/2007	246055	8/1/2007	70210	1.1	LCLS Project, AVME9670, VME 64	9242406	2	\$1,403.47
<u>4043</u>	28158	7/24/2007	246055	8/1/2007	70210	2.1	LCLS Project, TRANS-200 VME 64	9242406	2	\$501.24
<u>4043</u>	28158	7/24/2007	246055	8/1/2007	70210	3.1	LCLS Project, IP440A-2E Digita	9242406	1	\$516.28
<u>4043</u>	28158	7/24/2007	246055	8/1/2007	70210	4.1	LCLS Project, IP445-E Digital	9242406	1	\$516.28
<u>4043</u>	28158	7/24/2007	246055	8/1/2007	70210	5.1	LCLS Project, IP330E Analog in	9242406	1	\$1,152.85
<u>4043</u>	28158	7/24/2007	246055	8/1/2007	70210	6.1	LSCLS Project, IP231-16E, Anal	9242406	1	\$1,353.34
<u>4043</u>	CM28549	8/9/2007	247525	8/22/2007	70210	1.1	LCLS Project, AVME9670, VME 64	9242406	2	(\$1,400.00)

Totals	10	\$4,043.46
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**Payment Information:**

Voucher	Vendor	Payment Method	Date	Paid Check#	Amount
246055	<u>4043</u>	System Check	8/23/2007	060052	\$5,443.46
<b>Totals</b>					<b>\$5,443.46</b>

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[ [Feedback](#) | [SLAC](#) ]

Owner: *bis-admin*



0000133242

Approved

Search Req

Type: **Regular Purchase Requisition**

Requisition: **0000133242**

Date: 07/11/07

Buyer: Villanueva, Vincent C.

Entered by: LUPE

All Comments

Requestor: Salgado, Guadalupe

Suggested Vendor: Acromag Inc

Item	Qty	Unit \$	Unit	Est Cost	Description	P.O.	Charge No.	Dlvr To	PO Cost
1	2	700.000	EA	1,400.000	LCLS Project, AVME9670, VME 64X 6U IP carrier Board w/ 4 ports	70210	9242406	084 - B252	1,400.000
<< Stock item Per Quote number: DY071107-02 >>									
2	2	250.000	EA	500.000	LCLS Project, TRANS-200 VME 64X Transition Module w/ four SCSI-2 ports	70210	9242406	084 - B252	500.000
<< Stock Item per Quote number: DY071107-02 >>									
3	1	515.000	EA	515.000	LCLS Project, IP440A-2E Digital Input, 32 Channel +/-16V to +/-40V	70210	9242406	084 - B252	515.000
<< Stock Item per Quote number: DY071107-02 >>									
4	1	515.000	EA	515.000	LCLS Project, IP445-E Digital Output 32 Channels,	70210	9242406	084 - B252	515.000

					Optically Isolated +/- 60V				
<< Stock Item per quote number: DY071107-02 >>									
5	1	1,150.000	EA	1,150.000	LCLS Project, IP330E Analog input module with 16 differential or 32 single-ended inputs with 16-bit A/D	70210	9242406	084 - B252	1,150.000
<< stock item per Quote: DY071107-02 >>									
6	1	1,350.000	EA	1,350.000	LSCLS Project, IP231-16E, Analog output module; 16 channels; extended temperature range	70210	9242406	084 - B252	1,350.000
<< Stock item per quote number: DY071107-02 >>									
Totals				\$5,430.000					\$5,430.000

Purchase Order: 70210

Dispa

Rec

TYPE: Regular Purchase Order  
 PO Date: 7/16/2007  
 Buyer: CRUMB  
 Comment: Stanford Linear Accelerator Center Terms and Conditions for Commercial Supplies and Services, M Rev 2 (10/06), are attached hereto and incorporated by reference.  
 Approved: Acromag Inc  
 Vendor:

PO Line	Req Line	Qty	Unit Price	Unit	P.O. Cost	Description	Due Date	Charge No.	Location	Da Rece
1	1	2	700.00	EA	1,400.00	LCLS Project, AVME9670, VME 64X 6U IP carrier Board w/ 4 ports	7/31/2007	9242406	084 - B252	07/30
2	2	2	250.00	EA	500.00	LCLS Project, TRANS-200 VME 64X Transition Module w/ four SCSI-2 ports	7/31/2007	9242406	084 - B252	07/30

3	<u>3</u>	1	515.00	EA	515.00	LCLS Project, IP440A-2E Digital Input, 32 Channel +/- 16V to +/-40V	7/31/2007	9242406	084 - B252	07/30
4	<u>4</u>	1	515.00	EA	515.00	LCLS Project, IP445-E Digital Output 32 Channels, Optically Isolated +/-60V	7/31/2007	9242406	084 - B252	07/30
5	<u>5</u>	1	1,150.00	EA	1,150.00	LCLS Project, IP330E Analog input module with 16 differential or 32 single- ended inputs with 16-bit A/D	7/31/2007	9242406	084 - B252	07/30
6	<u>6</u>	1	1,350.00	EA	1,350.00	LSCLS Project, IP231-16E, Analog output module; 16 channels; extended temperature range	8/24/2007	9242406	084 - B252	07/30

## Voucher Information:

Vndr	Invoice	Invoice Date	Vchr	Acctg Date	PO ID	PO Line	Description	Chrg No.	Qty	Amount
<u>4043</u>	28158	7/24/2007	246055	8/1/2007	70210	1.1	LCLS Project, AVME9670, VME 64	9242406	2	\$1,403.47
<u>4043</u>	28158	7/24/2007	246055	8/1/2007	70210	2.1	LCLS Project, TRANS-200 VME 64	9242406	2	\$501.24
<u>4043</u>	28158	7/24/2007	246055	8/1/2007	70210	3.1	LCLS Project, IP440A-2E Digita	9242406	1	\$516.28
<u>4043</u>	28158	7/24/2007	246055	8/1/2007	70210	4.1	LCLS Project, IP445-E Digital	9242406	1	\$516.28
<u>4043</u>	28158	7/24/2007	246055	8/1/2007	70210	5.1	LCLS Project, IP330E Analog in	9242406	1	\$1,152.85
<u>4043</u>	28158	7/24/2007	246055	8/1/2007	70210	6.1	LSCLS Project, IP231-16E, Anal	9242406	1	\$1,353.34
<u>4043</u>	CM28549	8/9/2007	247525	8/22/2007	70210	1.1	LCLS Project, AVME9670, VME 64	9242406	2	(\$1,400.00)

		Totals	10	\$4,043.46
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**Payment Information:**

Voucher	Vendor	Payment Method	Date	Paid Check#	Amount
246055	<u>4043</u>	System Check	8/23/2007	060052	\$5,443.46
<b>Totals</b>					<b>\$5,443.46</b>

[ [Feedback](#) | [SLAC](#) ]  
Owner: *bis-admin*



6

3.	3904OPX28Y3HG21-SLAC	\$2,275.00	100 +	6 - 8 Weeks ARO
		\$2,325.00	50 - 99	
		\$2,395.00	25 - 49	
		\$2,475.00	10 - 24	
		\$2,585.00	5 - 9	
		\$2,695.00	1 - 4	
2.	DNRE	\$650.00	1 Lot	

**Description:**

The Above part number 39C04OPX28Y3HG21-SLAC is based on an Elma Express Chassis type 39C; desktop/rack mount enclosure. This is configured to meet SLAC specification for the LCLS VME Crate Specification dated July 23, 2007: Following are the technical details:

- 39C = Type 39C with overall dimension of 2U high x 84HP wide x 290mm deep
- 04 = 4 slot card cage to accommodate 6U x 160 mm cards in the front and 6U x 80 mm cards in the rear, compliant to IEEE1101.10/11
- OP = 4 slot high performance VME64x backplane with 160 pin, 5.5mm J1, 17mm 160 pin J2 with shrouds, with J0 connector
- X = Without mounting provisions for drives
- 2 = height is 2U
- 8 = 84 HP wide
- Y = with Rear IO
- 3 = 290mm depth
- H = horizontal card orientation
- G2 = Has a, 250 watt plug-in power supplies, PowerOne P/n CPA250-4530; Input 90 -264 VAC; each psu has outputs of 5V@40A; 3.3V@40A; 12V@5.5V; -12V@2A (See attached spec sheet)
- 1 - Type 39, Level 1 shielding
- SLAC - Has the ELMA Sys Mon for monitoring the power supply voltages and temperature ( attached is the spec sheet)
- All extrusions and card guides fully compliant to IEEE 1101.10/11 standards
- Integrated cooling with side-to-side air flow.
- On/Off switch, AC in, and AC power cord
- All units are shipped fully assembled, wired and tested with a two Year Warranty

[http://www.elma.com/Admin/ProductionFiles1/ProductTypeFile/94/English/vme39\\_2u.pdf](http://www.elma.com/Admin/ProductionFiles1/ProductTypeFile/94/English/vme39_2u.pdf)

**Notes:**

1. The above is an estimated shipment date and is based on component availability, design complexity, and manufacturing backlog at the time of quotation. Orders are subject to Elma's standard terms and conditions and warranty statement.
2. For standard catalog and repeat orders a committed ship date will be provided within 2 weeks of order entry into Elma's system. Orders that are designated prototype a committed ship date will be provided within 2 weeks of final design approval (customer sign off).
3. COTS products may contain a combination of RoHS compliant and non-compliant parts at Elma's discretion. Certified compliant or non-compliant RoHS configurations can be quoted upon request.

**ELMA**  
Your Solution Partner



ELMA Electronic Inc.  
44350 Grimmer Blvd  
Fremont, CA 94538  
Phone: 510.656.3400  
Fax: 510.656.3783  
www.elma.com  
sales@elma.com

**Terms:** Net 30 – Pending Credit Approval  
**FOB:** Fremont, CA  
**Expires:** 90 Days

John, if you have questions or require further information, please contact Terry Cobb with L.A. Sales or I.

Best Regards,

Alfred Almeida  
*Regional Sales Manager*  
PHONE: (510) 656-5829  
FAX: (510) 656-3783  
E-MAIL: [Alfreda@elma.com](mailto:Alfreda@elma.com)

7

0000131010

Approved

Search Req

Type: **Regular Purchase Requisition**

Requisition: **0000131010**

Date: 03/12/07

Buyer: Azevedo, John S.

Entered by: DARLENE

All Comments

Requestor: Rogind, Erik

Suggested Vendor: Concurrent Technologies Inc

Item	Qty	Unit \$	Unit	Est Cost	Description	P.O.	Charge No.	Dlvr To	PO Cost
1	3	3,080.000	EA	9,240.000	B280- Concurrent Technologies part #: PP 410/032-12 ; 2 GHz Core Duo, 1 GB DRAM, cPCI 6U form factor	68291	9242536	280A-287	9,240.000
<< This is not a sole source product. However, there are many subtle differences between manufactures of like Single Board Computers. Some of those differences could cost us a fair amount in software engineering effort. So, every effort should be given to using this vendor. They have been in this business for 20+ years. They have quoted 2-4 ARO on all 3 line items. Regional Sales Rep is Alan Daniels: 760.885.8088 if the 2 supplied contacts don't work. >>									
2	3	405.000	EA	1,215.000	B280- Concurrent Technologies part #: AD PP5/002-00 ; RoHS Transition Module for the PP410	68291	9242536	280A-287	1,215.000
<< This is a Transition Module for the CT SBC. It gives us needed Ethernet port RJ45 access. Same Concurrent Technologies vendor >>									
3	3	37.000	EA	111.000	B280- Concurrent Technologies part #: CB 26D/125-00.	68291	9242536	280A-287	111.000

						26way multi-way breakout cable for PP-410				
<< cable from Concurrent Technologies for the PP410 >>										
Totals					\$10,566.000					\$10,566.000

Purchase Order: 68291

Dispatch:  
Full  
Receive:

TYPE: Regular Purchase Order  
 PO Date: 3/19/2007  
 Buyer: TIGGER  
 Comment: Stanford Linear Accelerator Center Terms and Conditions for Commercial Supplies and Services, M366 Rev 2 (10/06), are attached hereto and incorporated by reference.  
 Approved Vendor: Concurrent Technologies Inc

PO Line	Req Line	Qty	Unit Price	Unit	P.O. Cost	Description	Due Date	Charge No.	Location	Date Receive
1	1	3	3,080.00	EA	9,240.00	B280-Concurrent Technologies part #: PP 410/032-12 ; 2 GHz Core Duo, 1 GB DRAM, cPCI 6U form factor	4/23/2007	9242536	280A - 287	04/19/07
Lead-Time: 2 - 4 weeks ARO or SOONER.										
2	2	3	405.00	EA	1,215.00	B280-Concurrent Technologies part #: AD PP5/002-00 ; RoHS Transition Module for the PP410	4/23/2007	9242536	280A - 287	04/19/07
3	3	3	37.00	EA	111.00	B280-Concurrent Technologies part #: CB 26D/125-00. 26way multi-way breakout cable for PP-410	4/23/2007	9242536	280A - 287	04/19/07

Voucher Information:

Vndr	Invoice	Invoice Date	Vchr	Acctg Date	PO ID	PO Line	Description	Chrg No.	Qty	Amount
14143	000399	4/13/2007	239420	5/2/2007	68291	1.1	B280-Concurrent Technologies p	9242536	3	\$9,256.14
							B280-			



7

14143	000399	4/13/2007	239420	5/2/2007	68291	2.1	Concurrent Technologies P	9242536	3	\$1,217.12
14143	000399	4/13/2007	239420	5/2/2007	68291	3.1	B280-Concurrent Technologies P	9242536	3	\$111.20
<b>Totals</b>									<b>9</b>	<b>\$10,584.46</b>

**Payment Information:**

Voucher	Vendor	Payment Method	Date	Paid Check#	Amount
239420	14143	System Check	5/10/2007	055584	\$10,584.46
<b>Totals</b>					<b>\$10,584.46</b>

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 Owner: [bis-admin](#)



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0000139181

Search Req

Approved

Type: **Regular Purchase Requisition**

Requisition: **0000139181**

Date: 07/18/08

Buyer: Rooney, Gerald F.

Entered by: BABLUM

[All Comments](#)

Requestor: Luchini, Kristi L.

Suggested Vendor: Micro Research Finland Oy

Item	Qty	Unit \$	Unit	Est Cost	Description	P.O.	Charge No.	Dlvr To	PO Cost
1	2	2,500.000	EA	5,000.000	Model PMC-EVR-200 PMC Event Receiver Module	N/A	1896310	005 - 210	N/A
<< AIP LI22/LI23 Magnet PS & Controls >>									
Totals				\$5,000.000					\$0.000

**Voucher Information:**

No voucher information available at this time

[ [Feedback](#) | [SLAC](#) ]

Owner: bis-admin

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0000138449

Search Req

Approved

Type: **Regular Purchase Requisition**  
 Requisition: **0000138449**  
 Date: 06/02/08  
 Buyer: Freeman, Beverly J.  
 Entered by: DLILLY  
 Comment: 7-9-08 Returned Req. Reason: Additional Fundings. Buyer: Bev F. Approved by: David Pindroh. -- Cory

All Comments

Requestor: Browne, Michael J.  
 Suggested Vendor: Micro Research Finland Oy

Item	Qty	Unit \$	Unit	Est Cost	Description	P.O.	Charge No.	Dlvr To	PO Cost
1	4	6,932.000	EA	27,728.000	B280-VME-EVG-230 VME Event Generator Module - 280A LCLS Model	N/A	9242437	034 - 266	N/A
2	8	3,038.000	EA	24,304.000	B280-Model VME-EVR-230 Event Receiver Module	N/A	9242437	034 - 266	N/A
3	4	2,930.000	EA	11,720.000	B280-Model VME FOUT-12 VME 12-way Fiber Optical Fanout Module	N/A	9242437	034 - 266	N/A
4	8	2,458.000	EA	19,664.000	B280-Model PMC-EVR-200 PMC Event Receiver Module	N/A	9242437	034 - 266	N/A
5	4	1,541.000	EA	6,164.000	B280-Model EVR-TTB-200 VME TTL Rear Transition Module	N/A	9242437	034 - 266	N/A
Totals				\$89,580.000					\$0.00

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**Voucher Information:**

No voucher information available at this time

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[ [Feedback](#) | [SLAC](#) ]

Owner: [bis-admin](#)

**10**

0000128298

Approved

**Search Req**

Type: **Regular Purchase Requisition**  
 Requisition: **0000128298**  
 Date: 10/11/06  
 Buyer: Wright-Brunache,Pamela D.  
 Entered by: TERI  
 Comment: Mcc control room workstations  
All Comments  
 Requestor: Knopf,James G.  
 Suggested Vendor: Dell Marketing Lp

Item	Qty	Unit \$	Unit	Est Cost	Description	P.O.	Charge No.	Dlvr To	PO Cost
1	2	4,082.780	LOT	8,165.560	LCLS-COMP 690n Workstation with dual 24 inch monitors- reference e- quote: E008438749	65796	9242229	005 -215	8,197.560
Totals				\$8,165.560					\$8,197.560

Purchase Order: 65796

Disp  
Re

TYPE: Regular Purchase Order  
 PO Date: 10/12/2006  
 Buyer: PDWB  
 Comment: Order placed on line.

This Purchase Order is placed under the Terms & Conditions of Dell Marketing L.P.'s Government BC Contract #B02-999999.

In accordance with Article 9 - SITE SPECIFIC TERMS & CONDITIONS of the Basic Ordering Agree No. B02-999999, the following SLAC Site Specific Terms and Conditions are hereby incorporated in t purchase order from SLAC Terms and Conditions For Commercial Supplies And Services, Form M36' 03 (11/98):

"DEAR 970.5204-58 WORKPLACE SUBSTANCE ABUSE PROGRAMS AT DOE SITES (AUG. 19 and Clauses 20 through 34."

Approved Dell Marketing Lp

Vendor:

PO Line	Req Line	Qty	Unit Price	Unit	P.O. Cost	Description	Due Date	Charge No.	Location	
1	1	2	4,098.78	LOT	8,197.56	LCLS-COMP 690n Workstation with dual 24 inch monitors- reference e-quote: E008438749	10/20/2006	9242229	005 -215	10%

**Voucher Information:**

Vndr	Invoice	Invoice Date	Vchr	Acctg Date	PO ID	PO Line	Description	Chrg No.	Qty	Amount
2711	R38334101	10/17/2006	226127	10/25/2006	65796	1.1	LCLS-COMP 690n Workstation wit	9242229	2	\$8,165.56
<b>Totals</b>									2	\$8,165.56

**Payment Information:**

Voucher	Vendor	Payment Method	Date	Paid Check#	Amount
226127	2711	System Check	11/16/2006	048778	\$8,165.56
<b>Totals</b>					\$8,165.56

[ Feedback | SLAC ]  
 Owner: *bis-admin*

0000133242

Approved

Search Req

Type: **Regular Purchase Requisition**

Requisition: **0000133242**

Date: 07/11/07

Buyer: Villanueva, Vincent C.

Entered by: LUPE

All Comments

Requestor: Salgado, Guadalupe

Suggested Vendor: Acromag Inc

Item	Qty	Unit \$	Unit	Est Cost	Description	P.O.	Charge No.	Delv To	PO Cost
1	2	700.000	EA	1,400.000	LCLS Project, AVME9670, VME 64X 6U IP carrier Board w/ 4 ports	70210	9242406	084 - B252	1,400.000
<< Stock item Per Quote number: DY071107-02 >>									
2	2	250.000	EA	500.000	LCLS Project, TRANS-200 VME 64X Transition Module w/ four SCSI-2 ports	70210	9242406	084 - B252	500.000
<< Stock Item per Quote number: DY071107-02 >>									
3	1	515.000	EA	515.000	LCLS Project, IP440A-2E Digital Input, 32 Channel +/-16V to +/-40V	70210	9242406	084 - B252	515.000
<< Stock Item per Quote number: DY071107-02 >>									
4	1	515.000	EA	515.000	LCLS Project, IP445-E Digital Output 32 Channels,	70210	9242406	084 - B252	515.000

					Optically Isolated +/- 60V				
<< Stock item per Quote number: DY071107-02 >>									
5	1	1,150.000	EA	1,150.000	LCLS Project, IP330E Analog input module with 16 differential or 32 single-ended inputs with 16-bit A/D	70210	9242406	084 - B252	1,150.000
<< Stock item per Quote number: DY071107-02 >>									
6	1	1,350.000	EA	1,350.000	LSCLS Project, IP231-16E, Analog output module; 16 channels; extended temperature range	70210	9242406	084 - B252	1,350.000
<< Stock item per quote number: DY071107-02 >>									
Totals					\$5,430.000				\$5,430.000

**Purchase Order: 70210**

Dispa

Rec

TYPE: Regular Purchase Order  
 PO Date: 7/16/2007  
 Buyer: CRUMB  
 Comment: Stanford Linear Accelerator Center Terms and Conditions for Commercial Supplies and Services, M Rev 2 (10/06), are attached hereto and incorporated by reference.  
 Approved: Acromag Inc  
 Vendor:

PO Line	Req Line	Qty	Unit Price	Unit	P.O. Cost	Description	Due Date	Charge No.	Location	Da Rece
1	1	2	700.00	EA	1,400.00	LCLS Project, AVME9670, VME 64X 6U IP carrier Board w/ 4 ports	7/31/2007	9242406	084 - B252	07/30
2	2	2	250.00	EA	500.00	LCLS Project, TRANS-200 VME 64X Transition Module w/ four SCSI-2 ports	7/31/2007	9242406	084 - B252	07/30



11

3	<u>3</u>	1	515.00	EA	515.00	LCLS Project, IP440A-2E Digital Input, 32 Channel +/- 16V to +/-40V	7/31/2007	9242406	084 - B252	07/30
4	<u>4</u>	1	515.00	EA	515.00	LCLS Project, IP445-E Digital Output 32 Channels, Optically Isolated +/-60V	7/31/2007	9242406	084 - B252	07/30
5	<u>5</u>	1	1,150.00	EA	1,150.00	LCLS Project, IP330E Analog input module with 16 differential or 32 single- ended inputs with 16-bit A/D	7/31/2007	9242406	084 - B252	07/30
6	<u>6</u>	1	1,350.00	EA	1,350.00	LSCLS Project, IP231-16E, Analog output module; 16 channels; extended temperature range	8/24/2007	9242406	084 - B252	07/30

Voucher Information:

Vndr	Invoice	Invoice Date	Vchr	Acctg Date	PO ID	PO Line	Description	Chrg No.	Qty	Amount
4043	28158	7/24/2007	246055	8/1/2007	70210	1.1	LCLS Project, AVME9670, VME 64	9242406	2	\$1,403.47
4043	28158	7/24/2007	246055	8/1/2007	70210	2.1	LCLS Project, TRANS-200 VME 64	9242406	2	\$501.24
4043	28158	7/24/2007	246055	8/1/2007	70210	3.1	LCLS Project, IP440A-2E Digita	9242406	1	\$516.28
4043	28158	7/24/2007	246055	8/1/2007	70210	4.1	LCLS Project, IP445-E Digital	9242406	1	\$516.28
4043	28158	7/24/2007	246055	8/1/2007	70210	5.1	LCLS Project, IP330E Analog in	9242406	1	\$1,152.85
4043	28158	7/24/2007	246055	8/1/2007	70210	6.1	LSCLS Project, IP231-16E, Anal	9242406	1	\$1,353.34
4043	CM28549	8/9/2007	247525	8/22/2007	70210	1.1	LCLS Project, AVME9670, VME 64	9242406	2	(\$1,400.00)

Totals	10	\$4,043.46
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**Payment Information:**

Voucher	Vendor	Payment Method	Date	Paid Check#	Amount
246055	<u>4043</u>	System Check	8/23/2007	060052	\$5,443.46
<b>Totals</b>					<b>\$5,443.46</b>

[ [Feedback](#) | [SLAC](#) ]  
Owner: [bis-admin](#)

12

Approved

0000133242

Search Req

Type: **Regular Purchase Requisition**  
 Requisition: **0000133242**  
 Date: 07/11/07  
 Buyer: Villanueva, Vincent C.  
 Entered by: LUPE  
All Comments  
 Requestor: Salgado, Guadalupe  
 Suggested Vendor: Acromag Inc

Item	Qty	Unit \$	Unit	Est Cost	Description	P.O.	Charge No.	Dlvr To	PO Cost
1	2	700.000	EA	1,400.000	LCLS Project, AVME9670, VME 64X 6U IP carrier Board w/ 4 ports	70210	9242406	084 - B252	1,400.000
<< Stock item Per Quote number: DY071107-02 >>									
2	2	250.000	EA	500.000	LCLS Project, TRANS-200 VME 64X Transition Module w/ four SCSI-2 ports	70210	9242406	084 - B252	500.000
<< Stock Item per Quote number: DY071107-02 >>									
3	1	515.000	EA	515.000	LCLS Project, IP440A-2E Digital Input, 32 Channel +/-16V to +/-40V	70210	9242406	084 - B252	515.000
<< Stock Item per Quote number: DY071107-02 >>									
4	1	515.000	EA	515.000	LCLS Project, IP445-E Digital Output 32 Channels,	70210	9242406	084 - B252	515.000

					Optically Isolated +/- 60V				
<< Stock Item per quote number: DY071107-02 >>									
5	1	1,150.000	EA	1,150.000	LCLS Project, IP330E Analog input module with 16 differential or 32 single-ended inputs with 16-bit A/D	70210	9242406	084 - B252	1,150.000
<< stock item per Quote: DY071107-02 >>									
6	1	1,350.000	EA	1,350.000	LSCLS Project, IP231-16E, Analog output module; 16 channels; extended temperature range	70210	9242406	084 - B252	1,350.000
<< Stock item per quote number: DY071107-02 >>									
Totals				\$5,430.000					\$5,430.000

Purchase Order: 70210

Dispa

Rec:

TYPE: Regular Purchase Order  
 PO Date: 7/16/2007  
 Buyer: CRUMB  
 Comment: Stanford Linear Accelerator Center Terms and Conditions for Commercial Supplies and Services, M Rev 2 (10/06), are attached hereto and incorporated by reference.  
 Approved: Acromag Inc  
 Vendor:

PO Line	Req Line	Qty	Unit Price	Unit	P.O. Cost	Description	Due Date	Charge No.	Location	Da Rece
1	1	2	700.00	EA	1,400.00	LCLS Project, AVME9670, VME 64X 6U IP carrier Board w/ 4 ports	7/31/2007	9242406	084 - B252	07/
2	2	2	250.00	EA	500.00	LCLS Project, TRANS-200 VME 64X Transition Module w/ four SCSI-2 ports	7/31/2007	9242406	084 - B252	07/3C

3	<u>3</u>	1	515.00	EA	515.00	LCLS Project, IP440A-2E Digital Input, 32 Channel +/- 16V to +/-40V	7/31/2007	9242406	084 - B252	12 07/30
4	<u>4</u>	1	515.00	EA	515.00	LCLS Project, IP445-E Digital Output 32 Channels, Optically Isolated +/-60V	7/31/2007	9242406	084 - B252	07/30
5	<u>5</u>	1	1,150.00	EA	1,150.00	LCLS Project, IP330E Analog input module with 16 differential or 32 single- ended inputs with 16-bit A/D	7/31/2007	9242406	084 - B252	07/30
6	<u>6</u>	1	1,350.00	EA	1,350.00	LSCLS Project, IP231-16E, Analog output module; 16 channels; extended temperature range	8/24/2007	9242406	084 - B252	07/30

## Voucher Information:

Vndr	Invoice	Invoice Date	Vchr	Acctg Date	PO ID	PO Line	Description	Chrg No.	Qty	Amount
<u>4043</u>	28158	7/24/2007	246055	8/1/2007	70210	1.1	LCLS Project, AVME9670, VME 64	9242406	2	\$1,403.47
<u>4043</u>	28158	7/24/2007	246055	8/1/2007	70210	2.1	LCLS Project, TRANS-200 VME 64	9242406	2	\$501.24
<u>4043</u>	28158	7/24/2007	246055	8/1/2007	70210	3.1	LCLS Project, IP440A-2E Digita	9242406	1	\$516.28
<u>4043</u>	28158	7/24/2007	246055	8/1/2007	70210	4.1	LCLS Project, IP445-E Digital	9242406	1	\$516.28
<u>4043</u>	28158	7/24/2007	246055	8/1/2007	70210	5.1	LCLS Project, IP330E Analog in	9242406	1	\$1,152.85
<u>4043</u>	28158	7/24/2007	246055	8/1/2007	70210	6.1	LSCLS Project, IP231-16E, Anal	9242406	1	\$1,353.34
<u>4043</u>	CM28549	8/9/2007	247525	8/22/2007	70210	1.1	LCLS Project, AVME9670, VME 64	9242406	2	(\$1,400.00)

Totals	10	\$4,043.46
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**Payment Information:**

Voucher	Vendor	Payment Method	Date	Paid Check#	Amount
246055	4043	System Check	8/23/2007	060052	\$5,443.46
<b>Totals</b>					<b>\$5,443.46</b>

[ [Feedback](#) | [SLAC](#) ]  
 Owner: [bis-admin](#)

13

0000133242

Approved

Search Req

Type: **Regular Purchase Requisition**

Requisition: **0000133242**

Date: 07/11/07

Buyer: Villanueva, Vincent C.

Entered by: LUPE

All Comments

Requestor: Salgado, Guadalupe

Suggested Vendor: Acromag Inc

Item	Qty	Unit \$	Unit	Est Cost	Description	P.O.	Charge No.	Dlvr To	PO Cost
1	2	700.000	EA	1,400.000	LCLS Project, AVME9670, VME 64X 6U IP carrier Board w/ 4 ports	70210	9242406	084 - B252	1,400.000
<< Stock item Per Quote number: DY071107-02 >>									
2	2	250.000	EA	500.000	LCLS Project, TRANS-200 VME 64X Transition Module w/ four SCSI-2 ports	70210	9242406	084 - B252	500.000
<< Stock Item per Quote number: DY071107-02 >>									
3	1	515.000	EA	515.000	LCLS Project, IP440A-2E Digital Input, 32 Channel +/-16V to +/-40V	70210	9242406	084 - B252	515.000
<< Stock Item per Quote number: DY071107-02 >>									
4	1	515.000	EA	515.000	LCLS Project, IP445-E Digital Output 32 Channels,	70210	9242406	084 - B252	515.000

					Optically Isolated +/- 60V				
<< Stock item per quote number: DY071107-02 >>									
5	1	1,150.000	EA	1,150.000	LCLS Project, IP330E Analog input module with 16 differential or 32 single-ended inputs with 16-bit A/D	70210	9242406	084 - B252	1,150.000
<< Stock item per Quote: DY071107-02 >>									
6	1	1,350.000	EA	1,350.000	LSCLS Project, IP231-16E, Analog output module; 16 channels; extended temperature range	70210	9242406	084 - B252	1,350.000
<< Stock item per quote number: DY071107-02 >>									
Totals				\$5,430.000					\$5,430.000

Purchase Order: 70210

Dispa

Rec

TYPE: Regular Purchase Order  
 PO Date: 7/16/2007  
 Buyer: CRUMB  
 Comment: Stanford Linear Accelerator Center Terms and Conditions for Commercial Supplies and Services, M Rev 2 (10/06), are attached hereto and incorporated by reference.  
 Approved: Acromag Inc  
 Vendor:

PO Line	Req Line	Qty	Unit Price	Unit	P.O. Cost	Description	Due Date	Charge No.	Location	Da Rece
1	1	2	700.00	EA	1,400.00	LCLS Project, AVME9670, VME 64X 6U IP carrier Board w/ 4 ports	7/31/2007	9242406	084 - B252	07/30
2	2	2	250.00	EA	500.00	LCLS Project, TRANS-200 VME 64X Transition Module w/ four SCSI-2 ports	7/31/2007	9242406	084 - B252	07/30



13

3	<u>3</u>	1	515.00	EA	515.00	LCLS Project, IP440A-2E Digital Input, 32 Channel +/- 16V to +/-40V	7/31/2007	9242406	084 - B252	07/3C
4	<u>4</u>	1	515.00	EA	515.00	LCLS Project, IP445-E Digital Output 32 Channels, Optically Isolated +/-60V	7/31/2007	9242406	084 - B252	07/3C
5	<u>5</u>	1	1,150.00	EA	1,150.00	LCLS Project, IP330E Analog input module with 16 differential or 32 single- ended inputs with 16-bit A/D	7/31/2007	9242406	084 - B252	07/3C
6	<u>6</u>	1	1,350.00	EA	1,350.00	LSCLS Project, IP231-16E, Analog output module; 16 channels; extended temperature range	8/24/2007	9242406	084 - B252	07/3C

## Voucher Information:

Vndr	Invoice	Invoice Date	Vchr	Acctg Date	PO ID	PO Line	Description	Chrg No.	Qty	Amount
<u>4043</u>	28158	7/24/2007	246055	8/1/2007	70210	1.1	LCLS Project, AVME9670, VME 64	9242406	2	\$1,403.47
<u>4043</u>	28158	7/24/2007	246055	8/1/2007	70210	2.1	LCLS Project, TRANS-200 VME 64	9242406	2	\$501.24
<u>4043</u>	28158	7/24/2007	246055	8/1/2007	70210	3.1	LCLS Project, IP440A-2E Digita	9242406	1	\$516.28
<u>4043</u>	28158	7/24/2007	246055	8/1/2007	70210	4.1	LCLS Project, IP445-E Digital	9242406	1	\$516.28
<u>4043</u>	28158	7/24/2007	246055	8/1/2007	70210	5.1	LCLS Project, IP330E Analog in	9242406	1	\$1,152.85
<u>4043</u>	28158	7/24/2007	246055	8/1/2007	70210	6.1	LSCLS Project, IP231-16E, Anal	9242406	1	\$1,353.34
<u>4043</u>	CM28549	8/9/2007	247525	8/22/2007	70210	1.1	LCLS Project, AVME9670, VME 64	9242406	2	(\$1,400.00)

Totals	10	\$4,043.46
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**Payment Information:**

Voucher	Vendor	Payment Method	Date	Paid Check#	Amount
246055	<u>4043</u>	System Check	8/23/2007	060052	\$5,443.46
<b>Totals</b>					<b>\$5,443.46</b>

[ [Feedback](#) | [SLAC](#) ]  
 Owner: [bis-admin](#)

14

0000133242

Approved

Search Req

Type: **Regular Purchase Requisition**

Requisition: **0000133242**

Date: 07/11/07

Buyer: Villanueva, Vincent C.

Entered by: LUPE

All Comments

Requestor: Salgado, Guadalupe

Suggested Vendor: Acromag Inc

Item	Qty	Unit \$	Unit	Est Cost	Description	P.O.	Charge No.	Dlvr To	PO Cost
1	2	700.000	EA	1,400.000	LCLS Project, AVME9670, VME 64X 6U IP carrier Board w/ 4 ports	70210	9242406	084 - B252	1,400.000
<< Stock item Per Quote number: DY071107-02 >>									
2	2	250.000	EA	500.000	LCLS Project, TRANS-200 VME 64X Transition Module w/ four SCSI-2 ports	70210	9242406	084 - B252	500.000
<< Stock Item per Quote number: DY071107-02 >>									
3	1	515.000	EA	515.000	LCLS Project, IP440A-2E Digital Input, 32 Channel +/-16V to +/-40V	70210	9242406	084 - B252	515.000
<< Stock Item per Quote number: DY071107-02 >>									
4	1	515.000	EA	515.000	LCLS Project, IP445-E Digital Output 32 Channels,	70210	9242406	084 - B252	515.000

					Optically Isolated +/- 60V				
<< Stock item per quote number: DY071107-02 >>									
5	1	1,150.000	EA	1,150.000	LCLS Project, IP330E Analog input module with 16 differential or 32 single-ended inputs with 16-bit A/D	70210	9242406	084 - B252	1,150.000
<< stock item per Quote: DY071107-02 >>									
6	1	1,350.000	EA	1,350.000	LSCLS Project, IP231-16E, Analog output module; 16 channels; extended temperature range	70210	9242406	084 - B252	1,350.000
<< Stock item per quote number: DY071107-02 >>									
Totals				\$5,430.000					\$5,430.000

Purchase Order: 70210

Dispa

Rec

TYPE: Regular Purchase Order  
 PO Date: 7/16/2007  
 Buyer: CRUMB  
 Comment: Stanford Linear Accelerator Center Terms and Conditions for Commercial Supplies and Services, M Rev 2 (10/06), are attached hereto and incorporated by reference.  
 Approved Vendor: Acromag Inc

PO Line	Req Line	Qty	Unit Price	Unit	P.O. Cost	Description	Due Date	Charge No.	Location	Da Rece
1	1	2	700.00	EA	1,400.00	LCLS Project, AVME9670, VME 64X 6U IP carrier Board w/ 4 ports	7/31/2007	9242406	084 - B252	07/30
2	2	2	250.00	EA	500.00	LCLS Project, TRANS-200 VME 64X Transition Module w/ four SCSI-2 ports	7/31/2007	9242406	084 - B252	07/30

14

3	<u>3</u>	1	515.00	EA	515.00	LCLS Project, IP440A-2E Digital Input, 32 Channel +/- 16V to +/-40V	7/31/2007	9242406	084 - B252	07/30
4	<u>4</u>	1	515.00	EA	515.00	LCLS Project, IP445-E Digital Output 32 Channels, Optically Isolated +/-60V	7/31/2007	9242406	084 - B252	07/30
5	<u>5</u>	1	1,150.00	EA	1,150.00	LCLS Project, IP330E Analog input module with 16 differential or 32 single- ended inputs with 16-bit A/D	7/31/2007	9242406	084 - B252	07/30
6	<u>6</u>	1	1,350.00	EA	1,350.00	LSCLS Project, IP231-16E, Analog output module; 16 channels; extended temperature range	8/24/2007	9242406	084 - B252	07/30

## Voucher Information:

Vndr	Invoice	Invoice Date	Vchr	Acctg Date	PO ID	PO Line	Description	Chrg No.	Qty	Amount
<u>4043</u>	28158	7/24/2007	246055	8/1/2007	70210	1.1	LCLS Project, AVME9670, VME 64	9242406	2	\$1,403.47
<u>4043</u>	28158	7/24/2007	246055	8/1/2007	70210	2.1	LCLS Project, TRANS-200 VME 64	9242406	2	\$501.24
<u>4043</u>	28158	7/24/2007	246055	8/1/2007	70210	3.1	LCLS Project, IP440A-2E Digita	9242406	1	\$516.28
<u>4043</u>	28158	7/24/2007	246055	8/1/2007	70210	4.1	LCLS Project, IP445-E Digital	9242406	1	\$516.28
<u>4043</u>	28158	7/24/2007	246055	8/1/2007	70210	5.1	LCLS Project, IP330E Analog in	9242406	1	\$1,152.85
<u>4043</u>	28158	7/24/2007	246055	8/1/2007	70210	6.1	LSCLS Project, IP231-16E, Anal	9242406	1	\$1,353.34
<u>4043</u>	CM28549	8/9/2007	247525	8/22/2007	70210	1.1	LCLS Project, AVME9670, VME 64	9242406	2	(\$1,400.00)

Totals	10	\$4,043.46
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**Payment Information:**

Voucher	Vendor	Payment Method	Date	Paid Check#	Amount
246055	4043	System Check	8/23/2007	060052	\$5,443.46
<b>Totals</b>					<b>\$5,443.46</b>

[ [Feedback](#) | [SLAC](#) ]  
 Owner: [bis-admin](#)

15

0000133240

Approved

Search Req

Type: **Regular Purchase Requisition**

Requisition: **0000133240**

Date: 07/11/07

Buyer: Rooney, Gerald F.

Entered by: LUPE

All Comments

Requestor: Salgado, Guadalupe

Suggested Vendor: Cdw/Computer Centers Inc

\$1176

Item	Qty	Unit \$	Unit	Est Cost	Description	P.O.	Charge No.	Dlvr To	PO Cost
1	1	1,275.000	EA	1,275.000	LCLS Project, Digi PortServer TS MEI RJ-45 - terminal server, CDW Part: 647220, Mfg. Part: 70001978	70191	9242406	084 - B252	1,175.760
<< Stock item per Quote number: GVG1736 >>									
2	1	1,419.860	EA	1,419.860	LCLS Project, Digi PortServer II 16 port RJ45 Terminal Server, CDW Part: 072501, Mfg. Part: 70000901	70191	9242406	084 - B252	1,282.310
<< Stock item per Quote number: GVG1736 >>									
Totals				\$2,694.860					\$2,458.070

Purchase Order: 70191

Dispatch  
Ful  
Receive

TYPE: Regular Purchase Order

PO Date: 7/13/2007

Buyer: JROONEY

Comment: Purchase order confirmed with and faxed to Jackie McCarthy at (312) 705-9469 on July 13, 2007.

Reference quote #GVG1736 dated 7/11/2007 and modified on July 13, 2007 to reflect GSA Schedule pricing.

This Purchase Order is placed under the terms and conditions of GSA Contract No.: GS-35F-019

This order is placed pursuant to written authorization from the U.S. Department of Energy on March 29, 2004. In the event of any inconsistency between the terms and conditions of this order and those of your Federal Supply Schedule contract, the latter will govern.

Approved Vendor: Cdw/Computer Centers Inc

PO Line	Req Line	Qty	Unit Price	Unit	P.O. Cost	Description	Due Date	Charge No.	Location	Date Received
1	1	1	1,175.76	EA	1,175.76	LCLS Project, Digi PortServer TS MEI RJ-45 - terminal server, CDW Part: 647220, Mfg. Part: 70001978	7/25/2007	9242406	084 - B252	08/24/07
2	2	1	1,282.31	EA	1,282.31	LCLS Project, Digi PortServer II 16 port RJ45 Terminal Server, CDW Part: 072501, Mfg. Part: 70000901	7/25/2007	9242406	084 - B252	08/24/07

**Voucher Information:**

Vndr	Invoice	Invoice Date	Vchr	Acct Date	PO ID	PO Line	Description	Chrg No.	Qty	Amount
118	GNN0539	8/24/2007	248386	9/4/2007	70191	1.1	LCLS Project, Digi PortServer	9242406	1	\$1,207.22
118	GNN0539	8/24/2007	248386	9/4/2007	70191	2.1	LCLS Project, Digi PortServer	9242406	1	\$1,316.62
<b>Totals</b>									<b>2</b>	<b>\$2,523.84</b>

**Payment Information:**

Voucher	Vendor	Payment Method	Date	Paid Check#	Amount
248386	118	System Check	9/21/2007	061323	\$2,523.84
<b>Totals</b>					<b>\$2,523.84</b>



16

0000133240

Approved

Search Req

Type: **Regular Purchase Requisition**

Requisition: **0000133240**

Date: 07/11/07

Buyer: Rooney, Gerald F.

Entered by: LUPE

All Comments

Requestor: Salgado, Guadalupe

Suggested Vendor: Cdw/Computer Centers Inc

Item	Qty	Unit \$	Unit	Est Cost	Description	P.O.	Charge No.	Divr To	PO Cost
1	1	1,275.000	EA	1,275.000	LCLS Project, Digi PortServer TS MEI RJ-45 - terminal server, CDW Part: 647220, Mfg. Part: 70001978	70191	9242406	084 - B252	1,175.760
<< Stock item per Quote number: GVG1736 >>									
2	1	1,419.860	EA	1,419.860	LCLS Project, Digi PortServer II 16 port RJ45 Terminal Server, CDW Part: 072501, Mfg. Part: 70000901	70191	9242406	084 - B252	1,282.310
<< Stock item per Quote number: GVG1736 >>									
Totals				\$2,694.860					\$2,458.070

Purchase Order: 70191

Dispatch  
Ful  
Receive

TYPE: Regular Purchase Order

PO Date: 7/13/2007

Buyer: JROONEY

Comment: Purchase order confirmed with and faxed to Jackie McCarthy at (312) 705-9469 on July 13, 2007.

Reference quote #GVG1736 dated 7/11/2007 and modified on July 13, 2007 to reflect GSA Schedule pricing.

This Purchase Order is placed under the terms and conditions of GSA Contract No.: GS-35F-019

This order is placed pursuant to written authorization from the U.S. Department of Energy on March 29, 2004. In the event of any inconsistency between the terms and conditions of this order and those of your Federal Supply Schedule contract, the latter will govern.

Approved Vendor: Cdw/Computer Centers Inc

PO Line	Req Line	Qty	Unit Price	Unit	P.O. Cost	Description	Due Date	Charge No.	Location	Date Received
1	<u>1</u>	1	1,175.76	EA	1,175.76	LCLS Project, Digi PortServer TS MEI RJ-45 - terminal server, CDW Part: 647220, Mfg. Part: 70001978	7/25/2007	9242406	084 - B252	08/24/07
2	<u>2</u>	1	1,282.31	EA	1,282.31	LCLS Project, Digi PortServer II 16 port RJ45 Terminal Server, CDW Part: 072501, Mfg. Part: 70000901	7/25/2007	9242406	084 - B252	08/24/07

**Voucher Information:**

Vndr	Invoice	Invoice Date	Vchr	Acctg Date	PO ID	PO Line	Description	Chrg No.	Qty	Amount
<u>118</u>	GNN0539	8/24/2007	248386	9/4/2007	70191	1.1	LCLS Project, Digi PortServer	9242406	1	\$1,207.22
<u>118</u>	GNN0539	8/24/2007	248386	9/4/2007	70191	2.1	LCLS Project, Digi PortServer	9242406	1	\$1,316.62
<b>Totals</b>									<b>2</b>	<b>\$2,523.84</b>

**Payment Information:**

Voucher	Vendor	Payment Method	Date	Paid Check#	Amount
248386	<u>118</u>	System Check	9/21/2007	061323	\$2,523.84
<b>Totals</b>					<b>\$2,523.84</b>

17

0000133253

Approved

Search Req

Type: **Regular Purchase Requisition**  
 Requisition: **0000133253**  
 Date: 07/12/07  
 Buyer: Villanueva, Vincent C.  
 Entered by: LUPE  
All Comments  
 Requestor: Salgado, Guadalupe  
 Suggested Vendor: Gamma Vacuum

Item	Qty	Unit \$	Unit	Est Cost	Description	P.O.	Charge No.	Dlvr To	PO Cost
1	1	4,675.000	EA	4,675.000	LCLS Project, Ion pump power supply MPC-2-110-232-N-N 001: DIGITAL MPCe with: HV Supply One: 500-POS-7KV-K2: HV Supply Two: 500-POS-7KV-K2	70234	9242406	084 - B252	4,675.500
<< 4weeks ARO per Quote number:1001769 >>									
Totals				\$4,675.000					\$4,675.500

0000133238

Approved

Search Req

Type: **Regular Purchase Requisition**

Requisition: **0000133238**

Date: 07/11/07

Buyer: Villanueva, Vincent C.

Entered by: LUPE

All Comments

Requestor: Salgado, Guadalupe

Suggested Vendor: Stanford Research Systems

Item	Qty	Unit \$	Unit	Est Cost	Description	P.O.	Charge No.	Dlvr To	PO Cost
1	1	2,085.000	EA	2,085.000	LCLS Project, IGC100/13 Ion gauge controller (with RS-232), Option 1 (GPIB computer interface), Option 3 (Eight-channel process control)	70232	9242406	084 - B252	2,085.000
<< Delivery 10days after receipt of order. >>									
2	1	195.000	EA	195.000	LCLS Project, Product O100IG Second ion gauge channel	70232	9242406	084 - B252	195.000
<< Delivery 10days after receipt of order. >>									
3	1	150.000	EA	150.000	LCLS Project, Product: O100IGRM Rack mount tray for one or two IGC100s	70232	9242406	084 - B252	150.000

<< Delivery 10days after receipt of order >>			
Totals	\$2,430.000		\$2,430.000

**Purchase Order: 70232**

Dispatch  
Full  
Receive

TYPE: Regular Purchase Order  
 PO Date: 7/17/2007  
 Buyer: CRUMB  
 Comment: Stanford Linear Accelerator Center Terms and Conditions for Commercial Supplies and Services, M366 Rev 3 (07/07), are attached hereto and incorporated by reference.  
 Approved Vendor: Stanford Research Systems

PO Line	Req Line	Qty	Unit Price	Unit	P.O. Cost	Description	Due Date	Charge No.	Location	Date Received
1	1	1	2,085.00	EA	2,085.00	LCLS Project, IGC100/13 Ion gauge controller (with RS-232), Option 1 (GPIB computer interface), Option 3 (Eight-channel process control)	7/31/2007	9242406	084 - B252	07/20/07
2	2	1	195.00	EA	195.00	LCLS Project, Product O100IG Second ion gauge channel	7/31/2007	9242406	084 - B252	07/20/07
3	3	1	150.00	EA	150.00	LCLS Project, Product: O100IGRM Rack mount tray for one or two IGC100s	7/31/2007	9242406	084 - B252	07/20/07

**Voucher Information:**

Vndr	Invoice	Invoice Date	Vchr	Acctg Date	PO ID	PO Line	Description	Chrg No.	Qty	Amount
2240	519877C	7/19/2007	245326	7/24/2007	70232	1.1	LCLS Project, IGC100/13 Ion ga	9242406	1	\$2,107.96
2240	519877C	7/19/2007	245326	7/24/2007	70232	2.1	LCLS Project, Product O100IG S	9242406	1	\$197.15
2240	519877C	7/19/2007	245326	7/24/2007	70232	3.1	LCLS Project, Product: O100IGR	9242406	1	\$151.65

Totals	3	\$2,456.76
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18

ment Information:

Voucher	Vendor	Payment Method	Date	Paid Check#	Amount
245326	2240	System Check	8/17/2007	059809	\$2,456.76
Totals					\$2,456.76

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 Owner: [bis-admin](#)

19

0000133238

Approved

Search Req

Type: **Regular Purchase Requisition**

Requisition: **0000133238**

Date: 07/11/07

Buyer: Villanueva, Vincent C.

Entered by: LUPE

All Comments

Requestor: Salgado, Guadalupe

Suggested Vendor: Stanford Research Systems

Item	Qty	Unit \$	Unit	Est Cost	Description	P.O.	Charge No.	Dlvr To	PO Cost
1	1	2,085.000	EA	2,085.000	LCLS Project, IGC100/13 Ion gauge controller (with RS-232), Option 1 (GPIB computer interface), Option 3 (Eight-channel process control)	70232	9242406	084 - B252	2,085.000
<< Delivery 10days after receipt of order. >>									
2	1	195.000	EA	195.000	LCLS Project, Product O100IG Second ion gauge channel	70232	9242406	084 - B252	195.000
<< Delivery 10days after receipt of order. >>									
3	1	150.000	EA	150.000	LCLS Project, Product: O100IGRM Rack mount tray for one or two IGC100s	70232	9242406	084 - B252	150.000

<< Delivery 10days after receipt of order >>			
Totals	\$2,430.000		\$2,430.000



<< Delivery 10days after receipt of order >>			
Totals	\$2,430.000	\$2,430.000	

19

**Purchase Order: 70232**

Dispatch  
Full  
Receive

TYPE: Regular Purchase Order  
 PO Date: 7/17/2007  
 Buyer: CRUMB  
 Comment: Stanford Linear Accelerator Center Terms and Conditions for Commercial Supplies and Services, M366 Rev 3 (07/07), are attached hereto and incorporated by reference.  
 Approved: Stanford Research Systems  
 Vendor:

PO Line	Req Line	Qty	Unit Price	Unit	P.O. Cost	Description	Due Date	Charge No.	Location	Date Received
1	<u>1</u>	1	2,085.00	EA	2,085.00	LCLS Project, IGC100/13 Ion gauge controller (with RS-232), Option 1 (GPIB computer interface), Option 3 (Eight-channel process control)	7/31/2007	9242406	084 - B252	07/20/07
2	<u>2</u>	1	195.00	EA	195.00	LCLS Project, Product O100IG Second ion gauge channel	7/31/2007	9242406	084 - B252	07/20/07
3	<u>3</u>	1	150.00	EA	150.00	LCLS Project, Product: O100IGRM Rack mount tray for one or two IGC100s	7/31/2007	9242406	084 - B252	07/20/07

**Voucher Information:**

Vndr	Invoice	Invoice Date	Vchr	Acctg Date	PO ID	PO Line	Description	Chrg No.	Qty	Amount
<u>2240</u>	519877C	7/19/2007	245326	7/24/2007	70232	1.1	LCLS Project, IGC100/13 Ion ga	9242406	1	\$2,107.96
<u>2240</u>	519877C	7/19/2007	245326	7/24/2007	70232	2.1	LCLS Project, Product O100IG S	9242406	1	\$197.15
<u>2240</u>	519877C	7/19/2007	245326	7/24/2007	70232	3.1	LCLS Project, Product: O100IGR	9242406	1	\$151.65

	<b>Totals</b>	<b>3</b>	<b>\$2,456.76</b>
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**Payment Information:**

Voucher	Vendor	Payment Method	Date	Paid Check#	Amount
245326	<u>2240</u>	System Check	8/17/2007	059809	\$2,456.76
<b>Totals</b>					<b>\$2,456.76</b>

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 Owner: *bis-admin*

20

Approved

0000133238

Search Req

Type: **Regular Purchase Requisition**

Requisition: **0000133238**

Date: 07/11/07

Buyer: Villanueva, Vincent C.

Entered by: LUPE

All Comments

Requestor: Salgado, Guadalupe

Suggested Vendor: Stanford Research Systems

Item	Qty	Unit \$	Unit	Est Cost	Description	P.O.	Charge No.	Dlvr To	PO Cost
1	1	2,085.000	EA	2,085.000	LCLS Project, IGC100/13 Ion gauge controller (with RS-232), Option 1 (GPIB computer interface), Option 3 (Eight-channel process control)	70232	9242406	084 - B252	2,085.000
<< Delivery 10days after receipt of order. >>									
2	1	195.000	EA	195.000	LCLS Project, Product O100IG Second ion gauge channel	70232	9242406	084 - B252	195.000
<< Delivery 10days after receipt of order. >>									
3	1	150.000	EA	150.000	LCLS Project, Product: O100IGRM Rack mount tray for one or two IGC100s	70232	9242406	084 - B252	150.000

<< Delivery 10days after receipt of order >>		
Totals	\$2,430.000	\$2,430.000

**Purchase Order: 70232**

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TYPE: Regular Purchase Order  
 PO Date: 7/17/2007  
 Buyer: CRUMB  
 Comment: Stanford Linear Accelerator Center Terms and Conditions for Commercial Supplies and Services, M366 Rev 3 (07/07), are attached hereto and incorporated by reference.  
 Approved: Stanford Research Systems  
 Vendor:

PO Line	Req Line	Qty	Unit Price	Unit	P.O. Cost	Description	Due Date	Charge No.	Location	Date Received
1	<u>1</u>	1	2,085.00	EA	2,085.00	LCLS Project, IGC100/13 Ion gauge controller (with RS-232), Option 1 (GPIB computer interface), Option 3 (Eight-channel process control)	7/31/2007	9242406	084 - B252	07/20/07
2	<u>2</u>	1	195.00	EA	195.00	LCLS Project, Product O100IG Second ion gauge channel	7/31/2007	9242406	084 - B252	07/20/07
3	<u>3</u>	1	150.00	EA	150.00	LCLS Project, Product: O100IGRM Rack mount tray for one or two IGC100s	7/31/2007	9242406	084 - B252	07/20/07

**Voucher Information:**

Vndr	Invoice	Invoice Date	Vchr	Acctg Date	PO ID	PO Line	Description	Chrg No.	Qty	Amount
2240	519877C	7/19/2007	245326	7/24/2007	70232	1.1	LCLS Project, IGC100/13 Ion ga	9242406	1	\$2,107.96
2240	519877C	7/19/2007	245326	7/24/2007	70232	2.1	LCLS Project, Product O100IG S	9242406	1	\$197.15
2240	519877C	7/19/2007	245326	7/24/2007	70232	3.1	LCLS Project, Product: O100IGR	9242406	1	\$151.65

Totals | 3 | \$2,456.76 | **20**

ment Information:

Voucher	Vendor	Payment Method	Date	Paid Check#	Amount
245326	2240	System Check	8/17/2007	059809	\$2,456.76
<b>Totals</b>					<b>\$2,456.76</b>

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Owner: [bis-admin](#)

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21

0000136052

Search Req

Approved

Type: **Regular Purchase Requisition**

Requisition: **0000136052**

Date: 12/05/07

Buyer: McGiven,David D.

Entered by: DARLENE

[All Comments](#)

Requestor: Bong,James

Suggested Vendor: Wiener Plein & Baus Corp

Item	Qty	Unit \$	Unit	Est Cost	Description	P.O.	Charge No.	Dlvr To	PO Cost
1	2	1,492.000	EA	2,984.000	B280-HYTEC 8002, VICB8002, IP Carrier Bd., VME64x	72935	9242591	034-120	2,984.000
<< Item for LCLS Wire Scanner and Collimator system. >>									
2	5	876.000	EA	4,380.000	B280-HYTEC 8601, IP-Stepper-8601, 4 Chnl Stepper Motor Controller Industry Pack	72935	9242591	034-120	4,380.000
<< Item for LCLS Wire Scanner and Collimator system >>									
3	2	584.000	EA	1,168.000	B280-HYTEC 8304, Transition Bd., Straight through	72935	9242591	034-120	1,168.000

					transition board, VME64x				
<< Item for LCLS Wire Scanner and Collimator system LTU installation. >>									
4	5	4,969.000	EA	24,845.000	B280-HYTEC SMDS4-L/R/1-KVA, 3U high rack mounting stepper motor drive chassis with separate 1U 1KVA 24-volt power supply	72935	9242591	034-120	23,480.000
<< Item for LCLS Wire Scanner and Collimator system. >>									
5	2	1,122.000	EA	2,244.000	B280-Lambda, 19 inch Rack Mounting Unit for FPS Power Supplies, Cat. No. FPS-SIU	73223	9242591	034-120	1,088.000
<< Item for LCLS Wire Scanner and Collimator system. >>									
Totals				\$35,621.000					\$33,100.000

**Purchase Order: 72935**

TYPE: Regular Purchase Order  
 PO Date: 12/21/2007  
 Buyer: MCGIVEN  
 Approved Vendor: Wiener Plein & Baus Corp

PO Line	Req Line	Qty	Unit Price	Unit	P.O. Cost	Description	Due Date	Charge No.
1	1	2	1,492.00	EA	2,984.00	B280-HYTEC 8002, VICB8002, IP Carrier Bd., VME64x	3/31/2008	9242591

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0000136052

Approved

Search Req

Type: **Regular Purchase Requisition**  
 Requisition: **0000136052**  
 Date: 12/05/07  
 Buyer: McGiven, David D.  
 Entered by: DARLENE  
All Comments  
 Requestor: Bong, James  
 Suggested Vendor: Wiener Plein & Baus Corp

Item	Qty	Unit \$	Unit	Est Cost	Description	P.O.	Charge No.	Dlvr To	PO Cost
1	2	1,492.000	EA	2,984.000	B280-HYTEC 8002, VICB8002, IP Carrier Bd., VME64x	72935	9242591	034-120	2,984.000
<< Item for LCLS Wire Scanner and Collimator system. >>									
2	5	876.000	EA	4,380.000	B280-HYTEC 8601, IP-Stepper-8601, 4 Chnl Stepper Motor Controller Industry Pack	72935	9242591	034-120	4,380.000
<< Item for LCLS Wire Scanner and Collimator system >>									
3	2	584.000	EA	1,168.000	B280-HYTEC 8304, Transition Bd., Straight through	72935	9242591	034-120	1,168.000



					transition board, VME64x				
<< Item for LCLS Wire Scanner and Collimator system LTU installation. >>									
4	5	4,969.000	EA	24,845.000	B280-HYTEC SMDS4-L/R/1-KVA, 3U high rack mounting stepper motor drive chassis with separate 1U 1KVA 24-volt power supply	72935	9242591	034-120	23,480.000
<< Item for LCLS Wire Scanner and Collimator system. >>									
5	2	1,122.000	EA	2,244.000	B280-Lambda, 19 inch Rack Mounting Unit for FPS Power Supplies, Cat. No. FPS-S1U	73223	9242591	034-120	1,088.000
<< Item for LCLS Wire Scanner and Collimator system. >>									
Totals				\$35,621.000					\$33,100.000

**Purchase Order: 72935**

TYPE: Regular Purchase Order  
 PO Date: 12/21/2007  
 Buyer: MCGIVEN  
 Approved Vendor: Wiener Plein & Baus Corp

PO Line	Req Line	Qty	Unit Price	Unit	P.O. Cost	Description	Due Date	Charge No.
1	1	2	1,492.00	EA	2,984.00	B280-HYTEC 8002, VICB8002, IP Carrier Bd., VME64x	3/31/2008	9242591

August 24, 2007

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**Product Group:** Turbo-V 81-T Pumps    **Manufacturer:** VARIAN, INC.    **Brand or Model:** TURBO-V PUMP



With more than 50 years of experience in vacuum science, Varian, Inc. leads the way in developing unique design solutions. Many of these innovations are present in Varian's Turbo-V turbomolecular pumps:

**High speed, high compression:** Varian's design mission is to maximize performance at minimum cost and size.

**Very high gas-load capabilities:** Thanks to our state-of-the-art numerical modeling tools, the turbo pumping stages are designed to minimize power consumption. Special care is given to the thermal design of the cooling fins and the internal temperature distribution to ensure efficient operation.

**Monolithic rotor:** Varian, Inc. produces each pump rotor from a single piece of high-tech aluminum alloy. This major technological achievement improves the life of the pump for several reasons:

- The rotor is stronger.
- Rotor weight is minimized.
- Stresses on the bearings are reduced.

**Highly reliable, maintenance-free ceramic bearings:** These bearings need no lubrication, which means no oil, no refills, and no contamination. Ceramic is lighter, harder, smoother, and thermally more stable than any steel. So, a ceramic-ball bearing can run faster, hotter, and more quietly than any steel-ball bearing. Performance has never been so trouble-free.

**The Varian, Inc. Turbo-V 81-T Pump** has these specifications:

- Pumping speed:
  - With 4½-inch ConFlat® or NW63 ISO flange: 77 l/sec (N<sub>2</sub>), 65 l/sec (He), 50 l/sec (H<sub>2</sub>)
  - With 2¾-inch ConFlat or NW40 KF flange: 50 l/sec (N<sub>2</sub>), 56 l/sec (He), 46 l/sec (H<sub>2</sub>)
- Compression ratio: >7 × 10<sup>6</sup> (N<sub>2</sub>), 3 × 10<sup>3</sup> (He), 3 × 10<sup>2</sup> (H<sub>2</sub>)
- Base pressure: 3.8 × 10<sup>-9</sup> torr
- Foreline flange: NW16 KF
- Rotational speed: 80,000 rpm
- Start-up time: <60 seconds
- Recommended forepump: Varian, Inc. DS-42 or DS-102 rotary-vane pump or SH-110 dry pump
- Cooling requirements: natural air convection, forced-air or water cooling optional
- Maximum bakeout temperature:
  - With ConFlat Flange: 120 °C at inlet flange
  - With ISO or KF flange: 80 °C at inlet flange
- Vibration level (displacement): <0.01 µm at inlet flange
- Weight: 5.9 lb. with ConFlat Flange, 4 lb. with ISO or KF flange

[FAQs](#)

Description	Model	Inlet Flange	Package Quantity	Part Number	Each	Cart
PUMP, TURBO-V 81-T, CFF 2-3/4 IN.	Turbo-V 81-T	2-3/4 in. ConFlat Flange	1	9698908	\$3,550.00 USD USA Only Price	<a href="#">Add to cart</a>
PUMP, TURBO-V 81-T, CFF 4-1/2 IN.	Turbo-V 81-T	4-1/2 in. ConFlat Flange	1	9698907	\$3,550.00 USD USA Only Price	<a href="#">Add to cart</a>
PUMP, TURBO-V 81-T, ISO 63	Turbo-V 81-T	ISO 63	1	9698905	\$3,418.00 USD USA Only Price	<a href="#">Add to cart</a>
PUMP, TURBO-V 81-T, KF 40	Turbo-V 81-T	KF 40	1	9698906	\$3,418.00 USD USA Only Price	<a href="#">Add to cart</a>

24

Approved

0000133234

Search Req

Type: **Regular Purchase Requisition**

Requisition: **0000133234**

Date: 07/11/07

Buyer: Villanueva, Vincent C.

Entered by: LUPE

All Comments

Requestor: Salgado, Guadalupe

Suggested Vendor: Agilent Technologies

Item	Qty	Unit \$	Unit	Est Cost	Description	P.O.	Charge No.	Delv To	PO Cost
1	2	1,667.700	EA	3,335.400	LCLS Project, Agilent 33220A 20MHz Function/Arbitrary Waveform Generator	70212	9242406	084 - B252	3,335.400
<< Price includes 10% discount per quote number: 1467806.1 contact Danny Breda Tel-800-829-4444. >>									
2	2	931.500	EA	1,863.000	LCLS Project, - Agilent E5810A - LAN/GPIB Multiport Controller to control GPIB and RS-232	70212	9242406	084 - B252	1,863.000
<< Price includes 10% discount per Quote number: 1467806.1 >>									
Totals				\$5,198.400					\$5,198.400

**25**

Approved

0000124554

Search Req

Type: **Regular Purchase Requisition**  
 Requisition: **0000124554**  
 Date: **05/04/06**  
 Buyer: Zangara, William F.  
 Entered by: CINDYL  
All Comments  
 Requestor: McKee, Bobby D.  
 Suggested Vendor: Mks Instruments Inc

Item	Qty	Unit \$	Unit	Est Cost	Description	P.O.	Charge No.	Dlvr To	PO Cost
1	1	1,311.200	EA	1,311.200	SERIES 937A DIGITAL VACUUM GAUGE CONTROLLER P/N 937A- 120V60TR- NACTCT-NA	62552	1110967	212 -4	1,311.200
INCLUDES 2-DUAL CONVECTION PIRANI BOARDS									
2	6	184.800	EA	1,108.800	317 CONVECTION PIRANI GAUGE - SHIELDED P/N 103170013SH	62552	1110967	212 -4	1,108.800
1 1/3" CF FLANGE									
3	4	50.000	EA	200.000	CABLE FOR 317 PIRANI TO 937A CONTROLLER P/N 103170006SH	62552	1110967	212 -4	200.000
10' LONG									
Totals				\$2,620.000					\$2,620.000

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26

0000123321

Search Req

Approved

Type: **Regular Purchase Requisition**

Requisition: **0000123321**

Date: 03/06/06

Buyer: Villanueva, Vincent C.

Entered by: MOMENTUM

All Comments

Requestor: Peng, Sheng

Suggested Vendor: Visys Inc

Item	Qty	Unit \$	Unit	Est Cost	Description	P.O.	Charge No.	Dlvr To	PO Cost
1	8	1,750.000	UNT	14,000.000	LCLS - TM-6710CL Pulnix progressive scan camera link camera	61467	9242116	280A-271	13,592.000
2	4	475.000	UNT	1,900.000	LCLS - UV-21-OPT, Ultraviolet option for camera	61467	9242116	280A-271	1,680.000
3	8	62.000	UNT	496.000	LCLS - PD-12UU, Pulnix power supply	61467	9242116	280A-271	480.000
4	9	70.000	UNT	630.000	LCLS - 12P-02S, Power Cable	61467	9242116	280A-271	585.000
Totals				\$17,026.000					\$16,337.000

\$2225

Purchase Order: 61467

\$2357 per set

27

Approved

0000132096

Search Req

Type: **Regular Purchase Requisition**

Requisition: **0000132096**

Date: 05/09/07

Buyer: Villanueva, Vincent C.

Entered by: DARLENE

All Comments

Requestor: Peng, Sheng

Suggested Vendor: Engineering Design Team Inc

Item	Qty	Unit \$	Unit	Est Cost	Description	P.O.	Charge No.	Dlvr To	PO Cost
1	8	810.000	CD	6,480.000	B280 - PMC DV C-Link/SC/SLAC (019-02670-20), (DV) digital video camera interface for Camera Link with single connector for one base camera in a PMC form factor	69256	9242595	280A-271	6,480.000
<< Please load the latest firmware for SLAC >>									
2	16	685.000	UNT	10,960.000	B280 - RCX C-Link Module (053-02188-xx), Fiber optic adapter for Camera Link, attaches directly to the MDR-26 connector at the back of the camera, up to 300 meters standard, data rates approaching	69256	9242595	280A-271	10,960.000

				250 megabytes per second, includes power supply			
<< Please load the latest firmware for SLAC. Please make them 8 pairs. So 8 for camera, and 8 for frame grabber. >>							
Totals			\$17,440.000				\$17,440.000

0000133290

Search Req

Type: **Regular Purchase Requisition**  
 Requisition: **0000133290**  
 Date: **07/16/07**  
 Buyer: Villanueva, Vincent C.  
 Entered by: LUPE  
All Comments  
 Requestor: Salgado, Guadalupe  
 Suggested Vendor: Engineering Design Team Inc

Item	Qty	Unit \$	Unit	Est Cost	Description	P.O.	Charge No.	Dlvr To	PO Cost
1	10	900.000	EA	9,000.000	LCLS Project, PMC DV FOX/F1, PCI (DV) digital video interface board with 1 fiber LC connector, 850nm	70378	9242406	084 - B252	9,000.000
<< Delivery 4 months after order is place, Per Quote# RH071007B, contact Richard Haugsby at Tel-503-690-1234 >>									
2	1	6,000.000	EA	6,000.000	LCLS Project, NRE to Design and devolpe 2 channel PCI DV Fox in a PMC form factor	70378	9242406	084 - B252	6,000.000
<< Delvery is 4 months from date of order per quote# RH071007B >>									
Totals				\$15,000.000					\$15,000.000



SLAC Profile Monitor  
\$4,000

SLAC Custom

Commercial in Confidence

Radstone Technology Corporation  
296 Concord Road Suite 120  
Billerica, MA 01821  
U.S.A.

Telephone (General): 978-671-9490  
Facsimile (General): 978-671-9488



GA  
30

www.radstone.com

### Quotation 20004881

Supersedes  
20004856

Customer contact: MARK McKERNAN  
Telephone: 925-423-3825  
Facsimile:  
email: mckernan1@llnl.gov

Customer Address 2992	Information	Page 1
UNIVERSITY OF CALIFORNIA LAWRENCE LIVERMORE NATIONAL LAB. 7000 EAST AVENUE LIVERMORE CA 94550 FAO: MARK McKERNAN	Quotation No. 20004881 Quotation Date 06-Sep-06 Customer RFQ E-mail dated September 0 Radstone Sales Mgr John Gurule Telephone 9518081711 Fax email John.Gurule@ics-ltd.com	

Payment Terms: 30 days from date of invoice  
Delivery Terms: Free on Board Seller's Location

Quotation Details				
Item	Description	Quantity	Unit Price	Extended Amount
0001	ICS-121A-32-B300 32 Channel Signal Conditioning Board <i>Delivery Estimated @ 9 Weeks, ARO.</i>	1	US Dollar 10,995.00	US Dollar 10,995.00
0002	ICS-130-32 32-Ch, 1.2MHz/ch, 16-Bit Sigma-Delta ADC <i>Delivery Estimated @ 4 Weeks, ARO.</i>	1	11,995.00	11,995.00
0003	DRV-121-VXW VxWorks S/W Dev Drvr W/Source & License	1	0.01	0.01
0004	DRV-130-VXW VxWorks s/w Dev Drvr w/Source & License	1	0.01	0.01
0005	CBL-1053 Cable, 16Ch Analog, Signal Cond to ADC	1	160.00	160.00
VALID TO DATE: 05-Oct-06.				

All delivery dates are subject to prior orders.  
For and on behalf of Radstone Corp.  
ROSSANA NORWOOD

Signed R. Norwood  
Date 09/06/06

Acceptance of this Quotation constitutes acceptance of all of the Seller's Terms and Conditions of Sale on the reverse of page 1.

62  
31

Commercial in Confidence

Radstone Technology Corporation  
296 Concord Road Suite 120  
Billerica, MA 01821  
U.S.A.

Telephone (General): 978-671-9490  
Facsimile (General): 978-671-9488



www.radstone.com

**Quotation  
20004881**

Supersedes  
20004856

Customer contact: MARK McKERNAN  
Telephone: 925-423-3825  
Facsimile:  
email: mckernan1@fnl.gov

Customer Address 2992	Information	Page 1
UNIVERSITY OF CALIFORNIA LAWRENCE LIVERMORE NATIONAL LAB. 7000 EAST AVENUE LIVERMORE CA 94550 FAO: MARK McKERNAN	Quotation No. 20004881 Quotation Date 06-Sep-06 Customer RFQ E-mail dated September 0 Radstone Sales Mgr John Gurule Telephone 9518081711 Fax email John.Gurule@ics-ltd.com	

Payment Terms: 30 days from date of invoice  
Delivery Terms: Free on Board Seller's Location

Quotation Details				
Item	Description	Quantity	Unit Price	Extended Amount
0001	ICS-121A-32-B300 32 Channel Signal Conditioning Board <i>Delivery Estimated @ 9 Weeks, ARO.</i>	1	10,995.00	10,995.00
0002	ICS-130-32 32-Ch,1.2MHz/ch,16-Bit Sigma-Delta ADC <i>Delivery Estimated @ 4 Weeks, ARO.</i>	1	11,995.00	11,995.00
0003	DRV-121-VXW VxWorks S/W Dev Drvr W/Source & License	1	0.01	0.01
0004	DRV-130-VXW VxWorks s/w Dev Drvr w/Source & License	1	0.01	0.01
0005	CBL-1053 Cable,16Ch Analog,Signal Cond to ADC	1	160.00	160.00
VALID TO DATE: 05-Oct-06.				

All delivery dates are subject to prior orders.  
For and on behalf of Radstone Corp.  
ROSSANA NORWOOD

Signed: *Rossana Norwood*  
Date: *09/06/06*

Acceptance of this Quotation constitutes acceptance of all of the Seller's Terms and Conditions of Sale on the reverse of page 1.

**Kawakami, Traci**

---

**From:** Bob & Brenda Sass [bsassy@garlic.com]  
**Sent:** Wednesday, February 27, 2008 8:07 PM  
**To:** Kawakami, Traci  
**Subject:** FW: Did you get a price on the ICS121?

This is for items 30, 31 & 32

---

**From:** Peng, Sheng [mailto:pengs@slac.stanford.edu]  
**Sent:** Monday, October 08, 2007 9:49 AM  
**To:** Bob & Brenda Sass  
**Subject:** FW: Did you get a price on the ICS121?

---

**From:** Steve Lewis [mailto:SALewis@llnl.gov]  
**Sent:** Friday, October 05, 2007 12:36 PM  
**To:** Peng, Sheng  
**Subject:** RE: Did you get a price on the ICS121?

ICS-121-32-B \$11,000

ICS-130-32 \$12,000

~~CBL-130~~ \$ 160 #

connects them across front FPDP connectors.

Hi Steve,  
I sent you an email to ask you to call me.  
And I did get the voice message you left on my phone. Thanks.

We want to know the price of your ICS121 and ICS???  
Thanks.  
Sheng

---

**From:** Bob & Brenda Sass [mailto:bsassy@garlic.com]  
**Sent:** Friday, October 05, 2007 10:51 AM  
**To:** Peng, Sheng  
**Subject:** Did you get a price on the ICS121?

LVDT Break Out Box 8-channels  
\$2,000

SLAC Custom

34

Approved

0000133251

Search Req

Type: **Regular Purchase Requisition**

Requisition: **0000133251**

Date: **07/12/07**

Buyer: Villanueva, Vincent C.

Entered by: LUPE

All Comments

Requestor: Salgado, Guadalupe

Suggested Vendor: Highland Technology

Item	Qty	Unit \$	Unit	Est Cost	Description	P.O.	Charge No.	Dlvr To	PO Cost
1	1	3,080.000	EA	3,080.000	LCLS Project, VME module Model V550, 8 channel LVDT delivery 45-days.	70211	9242406	084 - B252	3,080.000
Totals				\$3,080.000					\$3,080.000

35

Approved

Home SLAC Directory Purchasing Property Stores Financials Tools Forms Travel Security Feedback Use

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0000136052

Search Req

Type: **Regular Purchase Requisition**  
 Requisition: **0000136052**  
 Date: 12/05/07  
 Buyer: McGiven, David D.  
 Entered by: DARLENE  
All Comments  
 Requestor: Bong, James  
 Suggested Vendor: Wiener Plein & Baus Corp

Item	Qty	Unit \$	Unit	Est Cost	Description	P.O.	Charge No.	Dlvr To	PO Cost
1	2	1,492.000	EA	2,984.000	B280-HYTEC 8002, VICB8002, IP Carrier Bd., VME64x	72935	9242591	034-120	2,984.000
<< Item for LCLS Wire Scanner and Collimator system. >>									
2	5	876.000	EA	4,380.000	B280-HYTEC 8601, IP-Stepper-8601, 4 Chnl Stepper Motor Controller Industry Pack	72935	9242591	034-120	4,380.000
<< Item for LCLS Wire Scanner and Collimator system >>									
3	2	584.000	EA	1,168.000	B280-HYTEC 8304, Transition Bd., Straight through	72935	9242591	034-120	1,168.000

					transition board, VME64x				
<< Item for LCLS Wire Scanner and Collimator system LTU installation. >>									
4	5	4,969.000	EA	24,845.000	B280-HYTEC SMDS4-L/R/1-KVA, 3U high rack mounting stepper motor drive chassis with separate 1U 1KVA 24-volt power supply	72935	9242591	034-120	23,480.000
<< Item for LCLS Wire Scanner and Collimator system. >>									
5	2	1,122.000	EA	2,244.000	B280-Lambda, 19 inch Rack Mounting Unit for FPS Power Supplies, Cat. No. FPS-S1U	73223	9242591	034-120	1,088.000
<< Item for LCLS Wire Scanner and Collimator system. >>									
Totals				\$35,621.000					\$33,100.000

**Purchase Order: 72935**

TYPE: Regular Purchase Order  
 PO Date: 12/21/2007  
 Buyer: MCGIVEN  
 Approved Vendor: Wiener Plein & Baus Corp

PO Line	Req Line	Qty	Unit Price	Unit	P.O. Cost	Description	Due Date	Charge No.
1	1	2	1,492.00	EA	2,984.00	B280-HYTEC 8002, VICB8002, IP Carrier Bd., VME64x	3/31/2008	9242591



36

21

Approved

Home SLAC Directory Purchasing Property Stores Financials Tools Forms Travel Security Feedback Use

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0000136052

Search Req

Type: **Regular Purchase Requisition**

Requisition: **0000136052**

Date: 12/05/07

Buyer: McGiven, David D.

Entered by: DARLENE

[All Comments](#)

Requestor: Bong, James

Suggested Vendor: Wiener Plein & Baus Corp

Item	Qty	Unit \$	Unit	Est Cost	Description	P.O.	Charge No.	Dlvr To	PO Cost
1	2	1,492.000	EA	2,984.000	B280-HYTEC 8002, VICB8002, IP Carrier Bd., VME64x	72935	9242591	034-120	2,984.000
<< Item for LCLS Wire Scanner and Collimator system. >>									
2	5	876.000	EA	4,380.000	B280-HYTEC 8601, IP-Stepper-8601, 4 Chnl Stepper Motor Controller Industry Pack	72935	9242591	034-120	4,380.000
<< Item for LCLS Wire Scanner and Collimator system >>									
3	2	584.000	EA	1,168.000	B280-HYTEC 8304, Transition Bd., Straight through	72935	9242591	034-120	1,168.000

					transition board, VME64x				
<< Item for LCLS Wire Scanner and Collimator system LTU installation. >>									
4	5	4,969.000	EA	24,845.000	B280-HYTEC SMDS4-L/R/1-KVA, 3U high rack mounting stepper motor drive chassis with separate 1U 1KVA 24-volt power supply	72935	9242591	034-120	23,480.000
<< Item for LCLS Wire Scanner and Collimator system. >>									
5	2	1,122.000	EA	2,244.000	B280-Lambda, 19 inch Rack Mounting Unit for FPS Power Supplies, Cat. No. FPS-S1U	73223	9242591	034-120	1,088.000
<< Item for LCLS Wire Scanner and Collimator system. >>									
Totals				\$35,621.000					\$33,100.000

**Purchase Order: 72935**

TYPE: Regular Purchase Order  
 PO Date: 12/21/2007  
 Buyer: MCGIVEN  
 Approved Vendor: Wiener Plein & Baus Corp

PO Line	Req Line	Qty	Unit Price	Unit	P.O. Cost	Description	Due Date	Charge No.
1	1	2	1,492.00	EA	2,984.00	B280-HYTEC 8002, VICB8002, IP Carrier Bd., VME64x	3/31/2008	9242591

**37**  
Approved

0000123748

Type: **Regular Purchase Requisition**

Requisition: **0000123748**

Date: 03/24/06

Buyer: Villanueva, Vincent C.

Entered by: MOMENTUM

[All Comments](#)

Requestor: Peng, Sheng

Suggested Vendor: Adi

Item	Qty	Unit \$	Unit	Est Cost	Description	P.O.	Charge No.	Dlvr To	PO Cost
1	2	532.950	UNT	1,065.900	LCLS - H10Z1218M Lens	61758	9242333	280A -271	1,065.900
Please call Susan to activate SLAC account with ADI.									
Totals				\$1,065.900					\$1,065.900

**38**  
Approved

0000131123

Search Req

Type: **Regular Purchase Requisition**

Requisition: **0000131123**

Date: **03/16/07**

Buyer: Escudero, John A.

Entered by: DARLENE

All Comments

Requestor: Rogind, Erik

Suggested Vendor: Agilent Technologies

Item	Qty	Unit \$	Unit	Est Cost	Description	P.O.	Charge No.	Dlvr To	PO Cost
1	1	22,790.500	EA	22,790.500	B280-Acqiris DC282 Base Module. Quad Channel 8 GS/s, 10 bits, 256 k buf per channel, 6U cPCI	68534	9242536	280A-287	21,591.000
<< This is a state-of-the-art ADC that is required for the first LCLS End Station (the AMOS Experiment). We have exhaustively polled the market. There is NO other source. >>									
	1	22,790.500	EA	22,790.500	B280-Acqiris DC282 Base Module. Quad Channel 8 GS/s, 10 bits, 256 k buf per channel, 6U cPCI	68534	9242753	280A-287	21,591.000
2	2	3,790.500	EA	7,581.000	B280-Acqiris DC282-STD-SMA. 2 GHz BW	68534	9242536	280A-287	7,182.000

				50 mV - 5 VFS, 50 ohm for DC282, w/ 4 SMA connectors				
<< These are front end boards for the DC282 >>								
Totals			\$53,162.000					\$50,364.000

**Haller, Gunther**

---

To: Haller, Gunther  
Subject: Cost for ATCA modules

39  
40  
41

These are the costs for the modules from the PPA group:

Cluster Interconnect module: \$4,000  
Cluster Element Module or CE: \$4,000  
Backplane: \$2,000

Dr. Gunther Haller  
Stanford University/SLAC  
MS 96  
P.O. 20450  
Stanford, CA 94309  
T. (650) 926-4257  
F. (650) 926-2923  
C. (415) 548-0080

[Graphic Version](#)

**42**  
Complete

0000120444

Search Req

Type: **Regular Purchase Requisition**  
 Requisition: **0000120444**  
 Date: 09/28/05  
 Buyer: Jamison, Christopher William  
 Entered by: CINDYL  
All Comments  
 Requestor: Larsen, Raymond S.  
 Suggested Vendor: Kaparel Corp

Item	Qty	Unit \$	Unit	Est Cost	Description	P.O.	Charge No.	Dlvr To	PO Cost
1	1	6,922.000	EA	6,922.000	ATCA enclosure, 14 slot ATCA chassis with dual star backplane #3688304	58854	1110999	214-13	6,922.000
vendor quote #KD080205-Rev-0, contact Ken DuBois 817.447.9420									
2	1	1,089.000	EA	1,089.000	Pigeon Point Shelf Manager #1A008	58854	1110999	214-13	1,089.000
Totals				\$8,011.000					\$8,011.000

43

Approved

0000134029

Type: **Regular Purchase Requisition**

Requisition: **0000134029**

Date: 08/21/07

Buyer: Villanueva, Vincent C.

Entered by: LUPE

[All Comments](#)

Requestor: Haller, Gunther

Suggested Vendor: Wiener Plein & Baus Corp

Item	Qty	Unit \$	Unit	Est Cost	Description	P.O.	Charge No.	Dlvr To	PO Cost
1	1	3,193.000	EA	3,193.000	(B280) LCLS, 4 channel HV Module 5kV/1mA, Polarity Negative part number ISEG VHS 4050x_105.	70898	9242407	084 - B208	3,400.000
<< Delivery 10-12weeks a.r.o. warranty 2years parts and labor per Offer No.0707-229 >>									
2	1	3,208.000	EA	3,208.000	(B280) LCLS, 4 channel HV module 2kV/4mA, single wide VME, polarity Negative, part number: ISEG VHS 4020x_405	70898	9242407	084 - B208	3,208.000
<< Delivery 10-12weeks a.r.o. Warranty 2years parts and labor per Offer: No.0707-229 >>									
Totals				\$6,401.000					\$6,608.000

Purchase Order: 70898

Dispatched  
Fully Received



TYPE: Regular Purchase Order  
 PO Date: 8/23/2007  
 Buyer: CRUMB  
 Comment: Stanford Linear Accelerator Center Terms and Conditions for Commercial Supplies and Service M366 Rev 3 (07/07), are attached hereto and incorporated by reference.  
 Approved: Wiener Plein & Baus Corp  
 Vendor:

PO Line	Req Line	Qty	Unit Price	Unit	P.O. Cost	Description	Due Date	Charge No.	Location	Date Received
1	<u>1</u>	1	3,400.00	EA	3,400.00	(B280) LCLS, 4 channel HV Module 5kV/1mA, Polarity Negative part number ISEG VHS 4050x_105.	11/26/2007	9242407	084 - B208	02/19/08
warranty 2years parts and labor per Offer No.0707-229										
2	<u>2</u>	1	3,208.00	EA	3,208.00	(B280) LCLS, 4 channel HV module 2kV/4mA, single wide VME, polarity Negative, part number: ISEG VHS 4020x_405	11/26/2007	9242407	084 - B208	02/19/08
Warranty 2years parts and labor per Offer: No.0707-229										

**Voucher Information:**

No voucher information available at this time

**Payment Information:**

No payment information available at this time

44

Approved

0000134029

**Search Req**

Type: **Regular Purchase Requisition**

Requisition: **0000134029**

Date: 08/21/07

Buyer: Villanueva, Vincent C.

Entered by: LUPE

All Comments

Requestor: Haller, Gunther

Suggested Vendor: Wiener Plein & Baus Corp

Item	Qty	Unit \$	Unit	Est Cost	Description	P.O.	Charge No.	Dlvr To	PO Cost
1	1	3,193.000	EA	3,193.000	(B280) LCLS, 4 channel HV Module 5kV/1mA, Polarity Negative part number ISEG VHS 4050x_105.	70898	9242407	084 - B208	3,400.000
<< Delivery 10-12weeks a.r.o. warranty 2years parts and labor per Offer No.0707-229 >>									
2	1	3,208.000	EA	3,208.000	(B280) LCLS, 4 channel HV module 2kV/4mA, single wide VME, polarity Negative, part number: ISEG VHS 4020x_405	70898	9242407	084 - B208	3,208.000
<< Delivery 10-12weeks a.r.o. Warranty 2years parts and labor per Offer: No.0707-229 >>									
<b>Totals</b>				<b>\$6,401.000</b>					<b>\$6,608.000</b>

**Purchase Order: 70898**

Dispatched  
Fully Received

TYPE: Regular Purchase Order  
 PO Date: 8/23/2007  
 Buyer: CRUMB  
 Comment: Stanford Linear Accelerator Center Terms and Conditions for Commercial Supplies and Service M366 Rev 3 (07/07), are attached hereto and incorporated by reference.  
 Approved: Wiener Plein & Baus Corp  
 Vendor:

PO Line	Req Line	Qty	Unit Price	Unit	P.O. Cost	Description	Due Date	Charge No.	Location	Date Received
1	<u>1</u>	1	3,400.00	EA	3,400.00	(B280) LCLS, 4 channel HV Module 5kV/1mA, Polarity Negative part number ISEG VHS 4050x_105.	11/26/2007	9242407	084 - B208	02/19/08
warranty 2years parts and labor per Offer No.0707-229										
2	<u>2</u>	1	3,208.00	EA	3,208.00	(B280) LCLS, 4 channel HV module 2kV/4mA, single wide VME, polarity Negative, part number: ISEG VHS 4020x_405	11/26/2007	9242407	084 - B208	02/19/08
Warranty 2years parts and labor per Offer: No.0707-229										

**Voucher Information:**

No voucher information available at this time

**Payment Information:**

No payment information available at this time



Search!

45

ME > Products > Medium & High Voltage Pulse Generators (Rise Time > 1 ns) > AVRH-2-B High Voltage Pulser

## Avtech AVRH-2-B High Voltage Pulser

Jump to: [Datasheet](#) - [Manuals](#) - [Prices](#) - [Valid Model Numbers](#) - [Applications](#) - [Test Results](#)

The most recent information for the AVRH-2-B High Voltage Pulser is available here:



[AVRH-2 data sheet \(PDF format, 310 kB\).](#)



[A LabView driver for the "-B" version of this instrument is available!](#)



The following manuals for the AVRH-2 family (possibly including customized models) are available online:

- [AVRH-2-B High Voltage Pulser Manual \(434 kB\).](#)
- [Programming Manual for -B Instruments \(826 kB\)](#)



[Request our latest printed short-form catalog and our newsletter!](#)

### Prices - USA and Canada

Description	P/N	Price	Notes
High Voltage Pulser	AVRH-2-B	\$13182	Base model. Units with the -B suffix include the IEEE-488.2 GPIB and RS-232 computer control feature.
Internet control (Telnet and Web)	-TNT	\$676	Option. Adds a rear-panel Ethernet connector, providing Telnet or Web-based remote control from a network.
Adapter Kit	-ADPT1	\$471	Option. Adapter kit, consisting of an SHV PLUG to MHV FEMALE adapter and an MHV MALE to BNC FEMALE adapter.
Electronic amplitude control (analog)	-EA	\$590	Option.
HN output connector	-HN	\$233	Option. Replaces standard SHV connector
MHV output connector	-MHV	\$233	Option. Replaces standard SHV connector
Rack Mount Kit	-R5	\$233	Option. For 17-inch-wide models only. Check datasheet for instrument dimensions. (All -B units are 17 inches).
Dual polarity	-PN	\$3200	Option.
Positive output polarity	-P	0	A polarity must be specified.

Negative output polarity	-N	0	A polarity must be specified.
--------------------------	----	---	-------------------------------

These prices are in U.S. dollars, and apply only within the United States and Canada. A 5% academic discount is available for North American universities.

Click [here](#) for additional information about [price list terms](#), [shipping methods](#), [warranty and repair information](#).

## Prices - International

Customers in [Austria](#), [China](#), [France](#), [Germany](#), [India](#), [Japan](#), [Korea](#), [Switzerland](#), [Taiwan](#) and [Turkey](#) should contact their [local representative](#) for pricing. International prices will be somewhat higher than the USA/Canada pricing shown above, depending on local documentation requirements, customs and shipping procedures, and other regulatory issues (for example, the European WEEE directive).

Customers in other countries should contact our [Canadian headquarters](#) directly for pricing. Avtech can ship internationally by FedEx (preferred), UPS, DHL, or Bax Global.

Click [here](#) for additional information about [price list terms](#), [shipping methods](#), [warranty and repair information](#).

## To form a valid model number:

AVRH-2-B

+ (select one polarity: -P, -N, -PN)

+ (possible options: -TNT, -ADPT1, -EA, -HN, -MHV, -R5)

Some options may not be available with all formats (see the table above), and some combinations of options may not be available together. See the data sheet for details.

Our online [Model Number Checker](#) tool can be used to validate model numbers.

## Related Models

- [AVRH-1 High Voltage Pulser](#)
- [AVRH-3 High Voltage Pulser](#)

## Related Applications Information

- [AN-6 ~ Recommended Consultants and System Integrators](#)
- [TB6 ~ What Coaxial Cable Should I Use?](#)
- [AN-2A ~ General Applications Information](#)
- [AN-5 ~ Vendors of Fast Pulse Accessories](#)
- [TB8 ~ How Can I Connect to an SHV Connector?](#)
- [How Can I Extend the Amplitude Range to Low Levels?](#)
- [LabView drivers](#)

## Typical Test Results

45

The files listed below contain actual test results from recently shipped units.

- [sn11542,AVRH-2-B-P.pdf \(54 kB\)](#)
- [sn11541,AVRH-2-B-P.pdf \(54 kB\)](#)
- [sn11324,AVRH-2-B-P.pdf \(56 kB\)](#)
- [sn11323,AVRH-2-B-P.pdf \(56 kB\)](#)
- [sn11049,AVRH-2-B-P.pdf \(45 kB\)](#)
- [sn11036,AVRH-2-B-P.pdf \(44 kB\)](#)

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Avtech Electrosystems Ltd.



[info@avtechpulse.com](mailto:info@avtechpulse.com)



ph. 888-670-8729  
or 613-226-5772



fax 800-561-1970  
or 613-226-2802

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Vndr	Invoice	Invoice Date	Vchr	Acctg Date	PO ID	PO Line	Description	Chrg No.	Qty	Amount
<u>13274</u>	956743	8/29/2007	248412	9/4/2007	70768	1.1	WX-6509-NEB-A configured per q	668002	0.001	\$50,955.15
<u>13274</u>	956719	8/27/2007	248418	9/4/2007	70768	1.1	WX-6509-NEB-A configured per q	668002	0.001	\$9,405.00
<u>13274</u>	956775	8/31/2007	250468	9/24/2007	70768	1.1	WX-6509-NEB-A configured per q	668002	1	\$4,550.00
<b>Totals</b>									<b>1</b>	<b>\$64,910.15</b>

**Payment Information:**

*\$15,000  
for materials*

Voucher	Vendor	Payment Method	Date	Paid Check#	Amount
248412	<u>13274</u>	System Check	9/28/2007	061781	\$50,955.15
248418	<u>13274</u>	System Check	9/26/2007	061589	\$9,405.00
250468	<u>13274</u>	System Check	9/28/2007	061781	\$4,550.00
<b>Totals</b>					<b>\$64,910.15</b>

[ Feedback | SLAC ]

Owner: bis-admin



47



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No-Image Available

Cisco Catalyst 3750G-48TS SMI - switch - 48 ports

Product ID  
CDW Part: 722414  
Mfg. Part: WS-C3750G-48TS-S  
UNSPSC: 43222612

Availability:  
In stock and ready for shipment. Ships same day if ordered before 4 p.m. CT

Send To An Associate >  
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Product Pricing

Price: **\$9,967.01**  
Lease from \$301.90/month

Qty: 1

Add to cart >

16-switches

CDW-G SITE MAP

PRINTABLE VERSION

Overview Specs Accessories

Main Features

- 48TS SMI
- Switch
- 48 ports
- EN
- Fast EN
- Gigabit EN
- 10Base-T
- 100Base-TX
- 1000Base-T + 4 x SFP (empty)
- 1U
- rack-mountable
- stackable

Explore more about this product from Cisco

The Cisco Catalyst 3750-48TS switch is a member of the Cisco Catalyst 3750 Series, an innovative product line that improves LAN operating efficiency by combining industry-leading ease of use and the highest resiliency available for stackable switches. This new product series represents the next generation in desktop switches, and features Cisco StackWise technology, a 32-Gbps stack interconnect that allows customers to build a unified, highly resilient switching system - one switch at a time.

Using a 32-Gbps stack interconnect, Cisco StackWise technology is designed to respond to network changes of all kinds while maintaining constant high network performance. Cisco StackWise technology unites up to nine Catalyst 3750 switches into a single logical unit via special stack interconnect cables. The stack behaves as a single unit managed by a master switch elected from one of the member switches. Its advanced failover mechanisms create the highest levels of stackable resiliency for hardware and software reliability.

4D

Haller, Gunther

From: Amedeo Perazzo [perazzo@slac.stanford.edu]  
Sent: Tuesday, October 02, 2007 11:52 AM  
To: Peng, Sheng  
Cc: gxh  
Subject: Budget for data processing and data cache

Attachments: Stanford\_Targa14E.pdf; Stanford\_ATC5231\_ATS1160.pdf; neterion-10Gb-quotes.ps; dell-storage-6950.ps



Stanford\_Targa14E.pdf (56 KB) Stanford\_ATC5231\_ATS1160.pdf (... es.ps (2 MB)... s (367 KB)

Sheng Peng,

I include the different quotes in attachment.

Data Processing (two ATCA crates populated with dual Xeon processors):

$$16 * ATCA5231 + 2 * Targa14E = 16 * 4300 + 2 * 31615 = \$132030$$

④

Data cache (20TB total space with dual 10Gb connections per node):

$$10 * PowerEdge 6950 + 20 * Xframe E SR PCIe = 10 * 10880 + 20 * 1995 = \$148700$$

③



42

Print this page Close

# Print Summary



## PowerEdge 6950

~~From \$12,013.00~~

Now from

**\$10,880.00**

Preliminary Ship Date: 10/8/2007<sup>1</sup>

My Selections All Options

● PowerEdge 6950			
Date	10/2/2007 1:19:24 PM Central Standard Time		
Catalog Number	25 Retail rc956904		
Catalog Number / Description	Product Code	SKU	Id
<b>PowerEdge 6950:</b>			
NEW - 2x Dual Core AMD Opteron™8222SE, 3GHz, 2x1Mb Cache, 1Ghz HyprTrnspr	69D30S	[222-8573]	1
<b>Additional Processor:</b>			
No Upgrade to Quad Processors	2P	[311-6811]	2
<b>Operating System:</b>			
No Operating System	NOOS	[420-6320]	11
<b>Memory:</b>			
4GB Memory, 4x1GB, 667MHz, Single Ranked DIMMs, Dual Processors Only	4G4D6S	[311-6421]	3
<b>Chassis Configuration:</b>			
Dell Rapid Rails for use in Dell Racks, Square Holes	RPDRAIL	[310-6376]	28
<b>Bezel:</b>			
Metal Bezel for PowerEdge 6950	BEZEL	[313-4639]	17
<b>CD/DVD Drive:</b>			
24x CD-ROM, Internal	24XCD	[313-2700]	16

**Documentation:**

Electronics PE6950 Documentation and OpenManage CD Kit, No Hard Copy Docs	EDOCS	[310-8339]	21
--	-------	------------	----

**Hard Drive:**

400GB 10K RPM Serial-Attach SCSI 3Gbps 3.5-in HotPlug Hard Drive	400A10	[341-5443]	8
--	--------	------------	---

**2nd Hard Drive:**

400GB 10K RPM Serial-Attach SCSI 3Gbps 3.5-in HotPlug Hard Drive	400A10	[341-5443]	23
--	--------	------------	----

**Internal Storage Controller:**

PERC 5/i SAS RAID Controller, Internal, PCIe	PERC5I	[341-4350]	9
---	--------	------------	---

**3rd Hard Drive:**

400GB 10K RPM Serial-Attach SCSI 3Gbps 3.5-in HotPlug Hard Drive	400A10	[341-5443]	54
--	--------	------------	----

**4th Hard Drive:**

400GB 10K RPM Serial-Attach SCSI 3Gbps 3.5-in HotPlug Hard Drive	400A10	[341-5443]	51
--	--------	------------	----

**5th Hard Drive:**

400GB 10K RPM Serial-Attach SCSI 3Gbps 3.5-in HotPlug Hard Drive	400A10	[341-5443]	52
--	--------	------------	----

**Hard Drive Configuration:**

PERC 5i RAID Controller, 2 to 5 Hard Drives in RAID 0 config	PRCR0	[341-4054]	27
---	-------	------------	----

**Backplane:**

1x5 SAS Backplane, 3.5 Inch SAS Hard Drives	1X5BKPL	[311-6815]	18
--	---------	------------	----

**Network Adapter:**

Dual Embedded Broadcom® NetXtreme II 5708 Gigabit Ethernet NIC	OBNIC	[430-1762]	13
--	-------	------------	----

**TCP/IP Offload Engine****Enablement:**

Broadcom® Dual Port TCP/IP Offload Engine Not Enabled	NTOEKEY	[430-1765]	6
--	---------	------------	---

**Power Cords:**

4x Power Cords (2x NEMA 15amp and 2x PDU 10amp), 10 feet / 3 meter	PWRCRDS	[310-8509][310-8509][310-8510][310-8510]	38
--	---------	--	----

**Hardware Support Services:**

3Yr BASIC SUPPORT: 5x10 HW-Only, 5x10 NBD Onsite	U3OS	[980-2382][980-9120][985-4987][985-4988][985-4999]	29
---	------	--	----

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## Neterion's Xframe<sup>®</sup> Product Line Pricing


Neterion offers the fastest, most robust and most comprehensive line of 10 Gigabit Ethernet adapters on the market today. End-users can purchase the Xframe<sup>®</sup> products for standard-based environments through the distribution channel.

The following table indicates Neterion's suggested retail prices (MSRP) in US dollars, for the various configurations of Xframe. For a precise quote, please contact your Neterion Professional Partner (NP3). If you don't have an NP3 partner, please fill out our **End-User information request form** and we will contact you within 48 hours.

Product Name	Description	Cabling	Reach	P/N	MSRP (US \$) with optics
	<b>Xframe II CX4</b> PCI-X 2.0 266 MHz PCI-X 1.0 slot compatible	Copper (Twinax)	up to 15m	S2K000017	\$1,095
	<b>Xframe II SR</b> PCI-X 2.0 266 MHz PCI-X 1.0 slot compatible	Multi-Mode Fiber (LC connector)	up to 300m	S2K000015	\$1,995
	<b>Xframe II LR</b> PCI-X 2.0 266 MHz PCI-X 1.0 slot compatible	Single-Mode Fiber (SC connector)	up to 10km	S2K000016	\$2,895
	<b>Xframe II Sun Fire CX4</b> Low Profile PCI-X 2.0 266 MHz PCI-X 1.0 slot compatible	Copper (Twinax)	up to 15m	S2K000047	\$1,095
	<b>Xframe II Sun Fire SR</b> Low Profile PCI-X 2.0 266 MHz PCI-X 1.0 slot compatible	Multi-Mode Fiber (LC connector)	up to 300m	S2K000042	\$1,995
	<b>Xframe II Sun Fire LR</b> Low Profile PCI-X 2.0 266 MHz PCI-X 1.0 slot compatible	Single-Mode Fiber (LC connector)	up to 10km	S2K000046	\$2,895

"We have been tracking the iSCSI storage market for some time, and all the needed technology is reaching the market. One key component is adoption of 10 Gbps Ethernet, which will make available the capacity needed to build Ethernet based storage networking systems. Neterion, with the introduction of its Xframe products, will be supporting the adoption of 10 Gbps SANs in the Ethernet environment."

Bob Graham  
Enterprise Storage Group

See more quotes 



Xframe E CX4

PCI express x4

Copper  
(Twinax)

up to  
15m

S2K000045 \$1,095



Xframe E SR

PCI express x4

Multi-Mode  
Fiber  
(LC connector)

up to  
300m

S2K000041 \$1,995



Xframe E LR

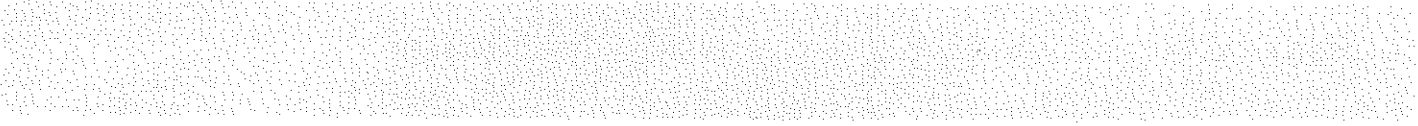
PCI express x4

Single-Mode  
Fiber  
(LC connector)

up to  
10km

S2K000048 \$2,895

[back to top](#)



Kawakami, Traci

From: Bob & Brenda Sass [bsassy@garlic.com]
Sent: Wednesday, February 27, 2008 8:06 PM
To: Kawakami, Traci
Subject: FW: Data Management H/W costs

This is for item 49.

-----Original Message-----
From: Steffen Luitz [mailto:luitz@slac.stanford.edu]
Sent: Tuesday, July 24, 2007 3:45 PM
To: Bob & Brenda Sass
Subject: Re: Data Management H/W costs

Hi Bob,

A few pieces of info right away - I'd have to do some research on others

On Tue, 24 Jul 2007, Bob & Brenda Sass wrote:

- > Hi Steffen:
>
>
> It looks like I'll be costing for another week at least. Joy.
>
>
> I'm looking at some sample costs for:
>
>
> Test machine setup with RAID disks and 10 Gb network.

That will depend on the actual network and disk I/O and CPU needs. I would need more info about that.

- >
> Some data storage costs; disks & tapes.

Tapes: \$90 / tape is a reasonable constant. Current technology gives you 500GByte per tape at 120MByte/s transfer rates. 1TByte/tape should become available within the next two years.

Disks. BaBar has been buying Sun X4500 ("Thumper") servers in the last round of purchases. In the configuration we use them, a box has ~18 TByte usable capacity for the price of \$27k. (Keep in mind that in recent choices Watts/Terabyte went into the decision what to by.

- >
> 10 Gb networks from NEH and FEH to SCCS.

Strongly depends on the number of ports you need. As a rule of thumb, a fully loaded network switch with standard ports (Cisco 6509-720 with redundant supervisors and 10Gbit uplinks) costs SLAC around \$100k.

In that network equipment market segment, per-fully-loaded-box prices have stayed remarkably constant. Over the last 9 years we paid about the same amount per box for all three generations of BaBar network switches.

>From my experience, I would strongly recommend for the main DAQ network  
>to  
go high-end, redundant and modular.

>  
>  
>  
> I've been searching around in the purchasing database but thought you  
might  
> have something easier to deal with based on recent BaBar experience.

>  
>  
>  
> Thanks for whatever info you have.

>  
>  
>  
> Bob

>  
>

-----  
- Steffen Luitz - e-mail: luitz@SLAC.Stanford.EDU -  
- SLAC Mail Stop 34 - 2575 Sand Hill Rd - Menlo Park, CA 94025 - U.S.A. -  
- phone +1 650 926 2822 - cell phone +1 650 796 2266 -  
-----

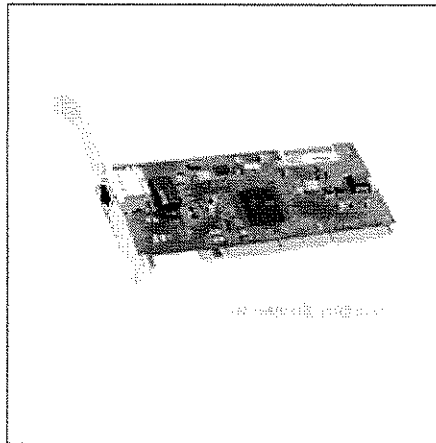


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Computer H



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3Com 3C996BT Gigabit Server NIC PCI 64bit 10/100/1000BASE-TX Single E warranty

**Availability:** Usually ships the same business day

3C996BT Regular price: \$98.00 Sale price: **\$58.00** [Add to Cart](#)

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DATE	PO.# CC	LOCATION	QTY	PART NUMBER	DESCRIPTION	Price EA.	Price Total	ACQ# PO.	SUPPLIER	MANUFACTURE	ENGINEER	Sub-System
7/10/07	R.133236		1	IPX-VGA-210-L	Camera: Imperx Monochrome "C" mount	\$ 1,995.00	\$ 1,995.00	92-42406	Uniforce	Uniforce sales and Eng.	Sheng Peng	Viewing
7/10/07	R.133236		1	PS12V01	Power Supply LYMX DC	\$ 90.00	\$ 90.00	92-42406	Uniforce	Uniforce sales and Eng.	Sheng Peng	Viewing
7/10/07	CC	On order	1	CG-H10Z1218M	Lens chg 12-120mm F1.8 10X 3 mclors	\$ 535.99	\$ 535.99	92-42406	ADI	ADI	Sheng Peng	Viewing
7/10/07	R.133234		2	E5810A	20MHz Function/Arbitrary Waveform Generator	\$ 1,667.00	\$ 3,334.00	92-42406	Agilent	Agilent	Sheng Peng	Viewing/Development
7/10/07	R.133234		1	LAN/GPIB Multiport Controller	LAN/GPIB Multiport Controller	\$ 931.50	\$ 931.50	92-42406	Agilent	Agilent	Sheng Peng	Power Supply/Hall Probe
7/10/07	R.133236		1	IGC100/13	Ion gauge controller option 1.3	\$ 2,085.00	\$ 2,085.00	92-42406	Stanford R S	Stanford Research Systems	Sheng Peng	Vacuum
7/10/07	R.133238		1	IP1001G	Second ion gauge channel	\$ 195.00	\$ 195.00	92-42406	Stanford R S	Stanford Research Systems	Sheng Peng	Vacuum
7/10/07	R.133238		1	01001GRM	Rack mount tray for one or two IGC100is	\$ 150.00	\$ 150.00	92-42406	Stanford R S	Stanford Research Systems	Sheng Peng	Vacuum
7/10/07	P.R.12270	PENDING	10	PMC DV FOX/F1	PCI (DV) digital video interface board with NRE to Design and devolpe 2 channel	\$ 6,000.00	\$ 60,000.00	92-42406	EDT	Engineering Design Team	Sheng Peng	Viewing
7/11/07	R.133240		1	70001978	Terminal Server Digi 15 MEI RJ-45	\$ 1,651.00	\$ 1,651.00	92-42406	CDW	CDW/COMPUTER CENTERS INC	Sheng Peng	Vacuum
7/11/07	R.133240		1	70000901	Terminal Server Digi II 16 port RJ45	\$ 1,438.39	\$ 1,438.39	92-42406	CDW	CDW/COMPUTER CENTERS INC	Sheng Peng	Development
7/11/07	R.133252		1	DTM-151-PG	GPIB Interface Digital Testmeter, 20 Bit	\$ 3,670.00	\$ 3,670.00	92-42406	CDW	CDW/COMPUTER CENTERS INC	Sheng Peng	Hall Probe
7/11/07	R.133252		1	MPT-141-2s	MPT-141-2s	\$ 1,950.00	\$ 1,950.00	92-42406	GMW ASSOCIATES	GMW ASSOCIATES	Sheng Peng	Hall Probe
7/11/07	R.133242		2	AVME9670	VME 64X 6U IP carrier Board w/ 4 ports	\$ 700.00	\$ 1,400.00	92-42406	Acromag	Acromag	Sheng Peng	Motion
7/11/07	R.133242		2	TRANS-200	VME 64X Transition Module	\$ 250.00	\$ 500.00	92-42406	Acromag	Acromag	Sheng Peng	Motion
7/11/07	R.133242		1	IP440A-2E	Digital Input 32 Channels	\$ 515.00	\$ 515.00	92-42406	Acromag	Acromag	Sheng Peng	Motion
7/11/07	R.133242		1	IP330E	Digital Output 32 Channels	\$ 515.00	\$ 515.00	92-42406	Acromag	Acromag	Sheng Peng	Motion
7/11/07	R.133242		1	IP231-16E	Analog input module with 16 differential	\$ 1,150.00	\$ 1,150.00	92-42406	Acromag	Acromag	Sheng Peng	Power Supply
7/11/07	R.133242		1	IP231-16E	Analog output module; 16 channels	\$ 1,350.00	\$ 1,350.00	92-42406	Acromag	Acromag	Sheng Peng	Power Supply
7/11/07	R.133253		1	MP-C-210-232-N-N 001	Iron pump power supply controller	\$ 4,675.50	\$ 4,675.50	92-42406	Gamma Vacuum	Gamma Vacuum	Sheng Peng	Vacuum
7/12/07	R.133251		1	Model V550	VME module Model V550, 8 channel LVDT	\$ 3,080.00	\$ 3,080.00	92-42406	Highland Tech.	Highland Technologies	Sheng Peng	Motion
7/12/07	P.R.12297	PENDING	1	8002 IP VME Carrier	8002 IP VME Carrier Board	\$ 1,400.00	\$ 1,400.00	92-42406	Hylec Electronic	Hylec Electronic	Sheng Peng	Motion
7/12/07	P.R.12297	PENDING	1	IP-SM-8601	4 channels of stepper motor control	\$ 800.00	\$ 800.00	92-42406	Hylec Electronic	Hylec Electronic	Sheng Peng	Motion
7/12/07	P.R.12297	PENDING	1	8304	8304 transition board	\$ 530.00	\$ 530.00	92-42406	Hylec Electronic	Hylec Electronic	Sheng Peng	Motion
7/12/07	P.R.12297	PENDING	1	SMDS4-5P Five phase	stepper motor driver with power supply	\$ 5,000.00	\$ 5,000.00	92-42406	Hylec Electronic	Hylec Electronic	Sheng Peng	Motion
					TOTAL		\$ 54,872.88					

S3 

**Kawakami, Traci**

From: Peng, Sheng  
Sent: Monday, March 03, 2008 12:42 PM  
To: Haller, Gunther; Kawakami, Traci  
Cc: 'Steve Lewis'  
Subject: RE: Price list

Hi Steve,  
The info in this email is good enough for Gunther.  
So you don't need to dig into you PO system.

Here is a rough list for AMOS:  
6 Turdo pumps (I believe just on/off)  
4 Ion Pumps (two Gamma DUAL Digital IPC)  
7 Cold Cathod Gauge (assume each needs a Pirani gauge as well, four MKS937A)  
8 Pirani Gauge (two MKS937A)  
7 foreline valves

So roughly:  
6 on/off to control Turbo Pump  
Two or three Gamma IPC  
Six MKS937A  
Seven valves

This will be about double of the configuration below, so about ~\$20K The attachment shows the unit price we usually got from Buckles-Smith.

\$10.860  
(see page 2)

=====  
>Below is the SLAC configuration which is good for one MKK937A, one  
>gamma dual IPC, 4 valves, 2 Digital I/O to turn on/off turbo pump.  
>If we need to control more devices, then we need more components.  
>  
>=====  
>===== Crate, power supply, and miscellaneous:  
>386.18 1 10 slot crate 1756-A10 (will use 8 of these 10 slots)  
>573.57 1 power supply 1756-PA72/C  
>3637.31 1 processor 1756-L61/B  
>1884.56 1 ethernet card 1756-EN2T  
>76.95 1 64MB compact flash card 1784-CF64  
>29.92 2 empty slot fillers 1756-N2  
>  
>Valve IO (four valves = 2 SLAC valve control boxes).  
>298.54 1 32 channel single-ended input module 1756-IB32  
>899.16 2 32 channel electronically fused single-ended output modules  
>1756-OV32E  
>0.00 2 SLAC valve control boxes.  
>  
>Gauge and Pump I/O:  
>995.36 1 16 channel single-ended analog input module 1756-IF16  
>322.05 1 16 channel isolated digital input module 1756-IB16I  
>398.29 1 16 channel isolated relay output module 1756-OW16I  
>  
>Need some dinrail terminal blocks from Allen-Bradley.  
>170.95 2 1492-IFM40F for the digital I/O  
>92.40 1 1492-AIFM8-3 for the analog inputs  
>  
>Need cables to connect the PLC modules to the IO blocks and the valve  
>controllers. We could make these cables ourselves but to save effort  
>and labor it better to buy them from Allen-Bradley:  
>508.84 3 1492-CABLE025Z for the 32 channel single-ended input/output  
>modules

>385.00 2 1492-CABLE025Y for the 16 channel isolated input/output modules  
>200.98 1 1492-ACABLE025UA for the analog input module

>-----  
>total  
>\$10860.06 (9501.89 for PLC crate and modules, 1358.17 for cables and  
>dinrail terminal blocks)

>-----Original Message-----

>From: Haller, Gunther

>Sent: Friday, February 29, 2008 5:41 PM

>To: Peng, Sheng

>Cc: Kawakami, Traci

>Subject: RE: Price list

>

>Sheng,

>

>Also the Allan Bradley on the list is only 7k or so.

>

>I think the complete system for vacuum including modules is about \$20k

>

>Can you find the PO's and have Traci put the additional parts on the list?

>Thanks

>

>

>

>Dr. Gunther Haller

>Stanford University/SLAC

>MS 96

>P.O. 20450

>Stanford, CA 94309

>T. (650) 926-4257

>F. (650) 926-2923

>C. (415) 548-0080

Kawakami, Traci

From: Peng, Sheng  
Sent: Thursday, February 28, 2008 4:10 PM  
To: Kawakami, Traci  
Subject: Budget Document

Attachments: LCLS Test-Stand Cost-1.xls



LCLS Test-Stand  
Cost-1.xls (58...

-----Original Message-----

From: Peng, Sheng  
Sent: Thursday, July 19, 2007 4:02 PM  
To: Salgado, Lupe  
Cc: 'l.harris@beckhoff.com'; Haller, Gunther; Nelson, David J.; 'Steve Lewis'  
Subject: Order beckhoff

Hi Lupe,

Would you please order 2 BK9000, 2 KL3314 and 2 KL9010 for LCLS?  
The card of sales person is attached.  
Thanks.

Sheng

BTW, Laura, do you have 24VDC power supply for BK9000?

=====  
BK9000 "Ethernet TCP/IP Bus Coupler for up to 64 Bus Terminals; Ethernet protocols  
TwinCAT ADS, Modbus TCP, Beckhoff real-time Ethernet" \$283.46

KL3314 "4-channel thermocouple input terminal, preset to type K, with wire breakage  
detection, 16 bit" \$228.85

KL9010 "Bus end terminal" \$11.35

Kawakami, Traci

From: Peng, Sheng  
Sent: Thursday, February 28, 2008 4:10 PM  
To: Kawakami, Traci  
Subject: Budget Document

Attachments: LCLS Test-Stand Cost-1.xls



LCLS Test-Stand  
Cost-1.xls (58...

-----Original Message-----

From: Peng, Sheng  
Sent: Thursday, July 19, 2007 4:02 PM  
To: Salgado, Lupe  
Cc: 'l.harris@beckhoff.com'; Haller, Gunther; Nelson, David J.; 'Steve Lewis'  
Subject: Order beckhoff

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Sheng

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=====  
BK9000 "Ethernet TCP/IP Bus Coupler for up to 64 Bus Terminals; Ethernet protocols  
TwinCAT ADS, Modbus TCP, Beckhoff real-time Ethernet" \$283.46

KL3314 "4-channel thermocouple input terminal, preset to type K, with wire breakage  
detection, 16 bit" \$228.85

KL9010 "Bus end terminal" \$11.35

**56**

Approved

0000131603

Search Req

Type: **Regular Purchase Requisition**  
 Requisition: **0000131603**  
 Date: 04/12/07  
 Buyer: Freeman, Beverly J.  
 Entered by: DARLENE  
 Comment: 5-23-07 Return req to open status for Operator editing.

[All Comments](#)

Requestor: De Salvo, Michael

Suggested Vendor: Optima Electronic Packaging Systems

*+ cooling ≈ \$10,000*

Item	Qty	Unit \$	Unit	Est Cost	Description	P.O.	Charge No.	Dlvr To	PO Cost
1	6	5,769.000	EA	34,614.000	B280-Rack Double Bay version 3 left-side vertical supports	69421	9242227	280A-272	34,614.000
<< LCLS Rack version 3 with vertical supports on left side (facing front). These racks are to conform to LCLS Rack Spec. 1.2.154. Accessories (see Spec. for part numbers): 2 ea plugmolds (hardwire type) per rack. 2 rear vent panels (w/filter) per rack . 2 fan panels per rack. Plate the mounting rails before tapping the screw holes. Please contact Mario Ortega or Michael De Salvo regarding prior problems with rack assemblies. 650-926-3612 Mario Ortega 650-926-2239 Michael De Salvo >> include: 2 ea plugmolds (hardwire type) per rack. 2 rear vent panels (w/filter) per rack . 2 fan panels per rack. Plate the mounting rails before tapping the screw holes.									
2	2	5,769.000	EA	11,538.000	B280-Rack Double Bay Version 3 right side vertical supports	69421	9242227	280A-272	11,538.000
<< LCLS Rack version 3 with vertical supports on right side (facing front). These racks are to conform to LCLS Rack Spec. 1.2.154. Accessories (see Spec. for part numbers): 2 ea plugmolds (hardwire type) per rack. 2 rear vent panels (w/filter) per rack. 2 fan panels per rack. Plate the mounting rails before tapping the screw holes. Please contact Mario Ortega or Michael De Salvo regarding prior problems with rack assemblies. 650-926-3612 Mario Ortega 650-926-2239 Michael De Salvo >> include: 2 ea plugmolds (hardwire type) per rack. 2 rear vent panels (w/filter) per rack. 2 fan panels per rack. Plate mounting rails before tapping the screw holes.									
3	2	5,769.000	EA	11,538.000	B280-Rack, Double Bay Version 3	69421	9242227	280A-272	11,538.000

					No vertical rails on side				
<< LCLS Rack version 3. No vertical rails on side. These racks are to conform to LCLS Rack Spec. 1.2.154. Accessories (see Spec. for part numbers): 2 ea plugmolds) hardwire type) per rack. 2 rear vent panels (w/filter) per rack. 2 fan panels per rack. Plate the mounting rails before tapping the screw holes. Please contact Mario Ortega or Michael De Salvo regarding prior problems with rack assemblies. 650-926-3612 Mario Ortega 650-926-2239 Michael De Salvo >> include: 2 ea plugmolds (hardwire type) per rack. 2 rear vent panels (w/filter) per rack. 2 fan panels per rack. Plate mounting rails before tapping the screw holes.									
4	25	32.000	PR	800.000	B280-Power supply shelf pair.	N/A	9242227	280A-272	N/A
<< Specifications 1.1.-329, drawings 103668-100, rev o wbs 1.03.02.04.04 for linac and undulator racks. >>									
Totals				\$58,490.000					\$57,690.000

**Purchase Order: 69421**

Dispatch  
Ful  
Receiv

TYPE: Regular Purchase Order  
 PO Date: 5/24/2007  
 Buyer: FREY  
 Comment: Stanford Linear Accelerator Center Standard Terms and Conditions (Non-Commercial Supplies and Services) M364 (05/07) REV 5, are attached hereto and incorporated by reference.  
 Approved Vendor: Optima Electronic Packaging Systems

PO Line	Req Line	Qty	Unit Price	Unit	P.O. Cost	Description	Due Date	Charge No.	Location	Date Receive
1.1.1	1	6	5,769.00	EA	34,614.00	(B280) Rack, Double Bay, Version 3, left-side vertical supports, (left side facing front), per ESD #1.2-154/Rev. 0.	8/2/2007	9242227	280A - 272	08/27/07
including: 2 ea plugmolds (hardwire type) per rack (\$100) 2 rear vent panels (w/filter) per rack (\$170) 2 fan panels per rack (\$504) Plate the mounting rails before tapping the screw holes.										
1	1	6	5,769.00	EA	34,614.00	(B280) Rack, Double Bay, Version 3, left-side vertical supports, (left side facing front), per ESD #1.2-154/Rev. 0.	8/2/2007	9242227	280A - 272	09/04/07
2	2	2	5,769.00	EA	11,538.00	(B280) Rack, Double Bay, Version 3, right side vertical supports, per ESD #1.2-154/Rev. 0.	8/2/2007	9242227	035	08/07/07



including: 2 ea plugmolds )hardwire type) per rack (\$100) 2 rear vent panels (w/filter) per rack (\$170) 2 fan panels per rack (\$504) Plate the mounting rails before tapping the screw holes.										
3	3	2	5,769.00	EA	11,538.00	(B280) Rack, Double Bay, Version 3, no vertical rails on side, per ESD #1.2-154/Rev. 0.	8/2/2007	9242227	035	08/07/07
including: 2 ea plugmolds) hardwire type) per rack (\$100) 2 rear vent panels (w/filter) per rack (\$170) 2 fan panels per rack (\$504) Plate the mounting rails before tapping the screw holes.										

**Voucher Information:**

Vndr	Invoice	Invoice Date	Vchr	Acctg Date	PO ID	PO Line	Description	Chrg No.	Qty	Amount
<u>12443</u>	8425	8/3/2007	246726	8/10/2007	69421	2.1	(B280) Rack, Double Bay, Versi	9242227	2	\$12,336.30
<u>12443</u>	8425	8/3/2007	246726	8/10/2007	69421	3.1	(B280) Rack, Double Bay, Versi	9242227	2	\$12,336.30
<u>12443</u>	8489	8/14/2007	247893	8/27/2007	69421	1.1	(B280) Rack, Double Bay, Versi	9242227	4	\$23,076.00
<u>12443</u>	8573	8/30/2007	248745	9/6/2007	69421	1.1	(B280) Rack, Double Bay, Versi	9242227	2	\$11,538.00
<b>Totals</b>									<b>10</b>	<b>\$59,286.60</b>

**Payment Information:**

Voucher	Vendor	Payment Method	Date	Paid Check#	Amount
246726	<u>12443</u>	System Check	8/31/2007	060401	\$24,672.60
247893	<u>12443</u>	System Check	9/13/2007	060899	\$23,076.00
248745	<u>12443</u>	System Check	9/28/2007	061691	\$11,538.00
248745	<u>12443</u>	System Check	9/28/2007	061691	\$0.00
<b>Totals</b>					<b>\$59,286.60</b>

SLAC Solenoid Controller 8-channel  
\$4,000

SLAC Custom

58

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Graphic Version

0000125507

Approved

Search Req

Type: Regular Purchase Requisition  
 Requisition: 0000125507  
 Date: 06/20/06  
 Buyer: Villanueva, Vincent C.  
 Entered by: HELENO  
All Comments  
 Requestor: Peng, Sheng  
 Suggested Vendor: Newport Corp

Item	Qty	Unit \$	Unit	Est Cost	Description	P. O.	Charge No.	Dlvr To	PO Cost
1	1	6,422.000	UNT	6,422.000	B280-8-axis XPS controller, XPS-C8	63504	9242114	280	6,760.000
AM01 and Cherenkov Radiator Mirror/Lens/Polarizer Control									
2	7	475.000	UNT	3,325.000	B280: PWM drive module for DC brush and stepper motors, DRV01	63504	9242114	280	3,500.000
AM01 and Cherenkov Radiator Mirror/Lens Control									
3	1	1,650.000	UNT	1,650.000	B280: Rotation stage SR50CC	63504	9242114	280	1,650.000
AM01 and Cherenkov Radiator Polarizer Control									
Totals				\$11,397.000					\$11,910.000

Per Motor =

$\$6422/8 + \$475.00 + \$(Motor)$

\$6897

Requisition Date: <b>5/1/2006</b>		<b>BIS Entry #: 7393</b>			<b>Req ID: 125424</b>			
Requestor Name: <b>PENG, SHENG</b> Dept: <b>ControlsAdm MS: 102 Ext: 3847</b> Req Contact: <b>Sheng Peng</b>				Suggested Vendor: <b>NEWPORT CORP (000000553)</b> Vendor Contact: <b>Tim Huebner, 650-966-5831</b> Univ. Tech. Rep.: <b>Fuller, Robert W. (650-926-2192)</b>				
Estimated Req Total: <b>\$11,909.00</b> Sole Source?: <b>Yes</b> On-Site Service?: <b>No</b>								
<b>LINE ITEM DETAIL</b>								
Line No.	Quantity:	UOM:	Est. Unit Price:	Extended Price:	Location (Bldg/Room):	Category:	Charge No:	Delivery Date:
<b>1</b>	<b>4</b>	<b>Units</b>	<b>\$713.00</b>	<b>\$2,852.00</b>	<b>280A / 271</b>	<b>54104 (00021)</b>	<b>9242116</b>	<b>7/15/2006</b>
Line Item Description: <b>B280-Compact Motorized Actuator CMA-12CCCL</b>								
Line Item Comments: Page 1016 of Newport Catalog 2004								
Recycled or Recovered Material: Is this an Energy Star labeled product? <b>No</b>								
Line No.	Quantity:	UOM:	Est. Unit Price:	Extended Price:	Location (Bldg/Room):	Category:	Charge No:	Delivery Date:
<b>2</b>	<b>2</b>	<b>Units</b>	<b>\$475.00</b>	<b>\$950.00</b>	<b>280A / 271</b>	<b>54104 (00021)</b>	<b>9242116</b>	<b>7/15/2006</b>
Line Item Description: <b>B280-PWM drive module for DC brush and stepper motors, DRV01</b>								
Line Item Comments:								
Recycled or Recovered Material: Is this an Energy Star labeled product? <b>Not Applicable</b>								
Line No.	Quantity:	UOM:	Est. Unit Price:	Extended Price:	Location (Bldg/Room):	Category:	Charge No:	Delivery Date:
<b>3</b>	<b>4</b>	<b>Units</b>	<b>\$118.75</b>	<b>\$475.00</b>	<b>280A / 271</b>	<b>54104 (00021)</b>	<b>9242116</b>	<b>7/15/2006</b>
Line Item Description: <b>B280-MMCABLE-REG</b>								
Line Item Comments:								
Recycled or Recovered Material: Is this an Energy Star labeled product? <b>Not Applicable</b>								
Line No.	Quantity:	UOM:	Est. Unit Price:	Extended Price:	Location (Bldg/Room):	Category:	Charge No:	Delivery Date:
<b>4</b>	<b>4</b>	<b>Units</b>	<b>\$1,520.00</b>	<b>\$6,080.00</b>	<b>280A / 271</b>	<b>54104 (00021)</b>	<b>9242116</b>	<b>7/15/2006</b>
Line Item Description: <b>B280-30M cable (10SI40097)</b>								
Line Item Comments: Quote: 209482								
Recycled or Recovered Material: Is this an Energy Star labeled product?								

58

<b>Not Applicable</b>								
Line No. 5	Quantity: 2	UOM: Units	Est. Unit Price: \$776.00	Extended Price: \$1,552.00	Location (Bldg/Room): 280A / 271	Category: 54104 (00021)	Charge No: 9242116	Delivery Date: 7/15/2006
Line Item Description: <b>B280-Compact Motorized Actuator CMA-25CCCL</b>								
Line Item Comments:								
Recycled or Recovered Material:								
Is this an Energy Star labeled product? <b>Not Applicable</b>								

APPROVALS	
Approver	Approve Date
Shoaee, Hamid	05/01/2006 05:30PM
Sisson, Wendy S	05/02/2006 03:00PM
Schultz, David C.	05/02/2006 04:39PM

ON-LINE ATTACHMENTS		
Filename	Description	Date
(None)		

COMMENTS

59

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[Graphic Version](#)

0000124162

Approved

[Search Rec](#)

Type: Regular Purchase Requisition  
 Requisition: 0000124162  
 Date: 04/14/06  
 Buyer: Freeman, Beverly J.  
 Entered by: MOMENTUM  
[All Comments](#)  
 Requestor: Fuller, Robert W.  
 Suggested Vendor: Arrow/Zeus Electronics

Item	Qty	Unit \$	Unit	Est Cost	Description	P. O.	Charge No.	Dlvr To	PO Cost
1	8	525.000	EA	4,200.000	B280 - Motorola, PMCSPAN2-002, Primary PMCSPAN with IEEE ejector handles	62139	9242114	280A-278	3,600.000
Item for LCLS Injector Controls. W. B. S. 1. 2. 2. 6. 5 Profile Monitor H/W. Phone price quote.									
2	1	450.000	EA	450.000	B280 - Motorola, PMCSPAN2-010, Secondary PMCSPAN with IEEE ejector handles	62139	9242114	280A-278	375.000
Item for LCLS Injector Controls. W. B. S. 1. 2. 2. 6. 5 Profile Monitor H/W. Phone price quote.									
Totals				\$4,650.000					\$3,975.000

Purchase Order: 62139

Dispatched Fully Received

TYPE: Regular Purchase Order  
 PO Date: 4/19/2006  
 Buyer: FREY  
 Comment: Stanford Linear Accelerator Center Terms and Conditions for Commercial Supplies and Services, M366 (4/05), are attached hereto and incorporated by reference.  
 Approved: Arrow Electronics Inc  
 Vendor:

PO	Req	Qty	Unit	Unit	P. O.	Description	Due	Charge	Location	Date
----	-----	-----	------	------	-------	-------------	-----	--------	----------	------

Line	Line	Price	Cost	Date	No.	Received
1.1.1	1	8 450.00 EA	3,600.00	7/31/2006	9242114	280A - 278 04/25/06
1	1	8 450.00 EA	3,600.00	7/31/2006	9242114	280A - 278 01/04/07
2	2	1 375.00 EA	375.00	7/31/2006	9242114	280A - 278 01/04/07

**Voucher Information:**

Vndr	Invoice	Invoice Date	Vchr	Acctg Date	PO ID	PO Line	Description	Chrg No.	Qty	Amount
3704	369904	4/20/2006	212725	5/9/2006	62139	1.1	B280 - Motorola, PMCSPAN2-002,	9242114	5	\$2,257.30
3704	6019775	12/29/2006	231886	1/23/2007	62139	1.1	B280 - Motorola, PMCSPAN2-002,	9242114	3	\$1,350.99
3704	5974201	12/22/2006	235217	3/5/2007	62139	2.1	B280 - Motorola, PMCSPAN2-010,	9242114	1	\$375.99
<b>Totals</b>									<b>9</b>	<b>\$3,984.28</b>

**Payment Information:**

Voucher	Vendor	Payment Method	Date	Paid Check#	Amount
212725	3704	System Check	5/19/2006	040106	\$2,257.30
231886	3704	System Check	1/26/2007	051491	\$1,350.99
235217	3704	System Check	3/6/2007	052950	\$375.99
<b>Totals</b>					<b>\$3,984.28</b>

[ Feedback | SLAC ]  
Owner: bis-admin

60

Home SLAC Directory Purchasing Property Stores Financials Tools Forms Travel Security Feedback Useful Info

[Graphic Version](#)

0000121203

Complete

[Search Req](#)

Type: Regular Purchase Requisition  
 Requisition: 0000121203  
 Date: 11/02/05  
 Buyer: Villanueva, Vincent C.  
 Entered by: PDUNGAN  
[All Comments](#)  
 Requestor: Peng, Sheng  
 Suggested Vendor: [Visys Inc](#)

Item	Qty	Unit \$	Unit	Est Cost	Description	P.O.	Charge No.	Dlvr To	PO Cost
1	1	1,700.000	UNT	1,700.000	LCLS-TM-6710CL Pulnix progressive scan camera link camera	59440	9242116	280A-271	1,770.000
2	1	475.000	UNT	475.000	LCLS-UV-21-OPT, Ultraviolet option for camera	59440	9242116	280A-271	475.000
3	1	91.000	UNT	91.000	LCLS-PD-12UUP, Pulnix power supply	59440	9242116	280A-271	62.000
4	1	183.000	UNT	183.000	LCLS-CLCP-10-P, Camera link cable 10 meter in length	59440	9242116	280A-271	183.000
Totals				\$2,449.000					\$2,490.000



61

Commercial in Confidence

Radstone Technology Corporation  
 296 Concord Road Suite 120  
 Billerica, MA 01821  
 U.S.A.

Telephone (General): 978-671-9490  
 Facsimile (General): 978-671-9488



www.radstone.com

**Quotation  
 20004881**

Supersedes  
 20004856

Customer contact: MARK McKERNAN  
 Telephone: 925-423-3825  
 Facsimile:  
 email: mckernan1@lnl.gov

Customer Address 2992	Information Page 1
UNIVERSITY OF CALIFORNIA LAWRENCE LIVERMORE NATIONAL LAB. 7000 EAST AVENUE LIVERMORE CA 94550 FAO: MARK McKERNAN	Quotation No. 20004881 Quotation Date 06-Sep-06 Customer RFQ E-mail dated September 0 Radstone Sales Mgr John Gurule Telephone 9518081711 Fax email John.Gurule@ics-ltd.com

Payment Terms: 30 days from date of invoice  
 Delivery Terms: Free on Board Seller's Location

Quotation Details				
Item	Description	Quantity	Unit Price	Extended Amount
0001	ICS-121A-32-B300 32 Channel Signal Conditioning Board <i>Delivery Estimated @ 9 Weeks, ARO.</i>	1	US Dollar 10,995.00	US Dollar 10,995.00
0002	ICS-130-32 32-Ch, 1.2MHz/ch, 16-Bit Sigma-Delta ADC <i>Delivery Estimated @ 4 Weeks, ARO.</i>	1	11,995.00	11,995.00
0003	DRV-121-VXW VxWorks S/W Dev Drvr W/Source & License	1	0.01	0.01
0004	DRV-130-VXW VxWorks s/w Dev Drvr w/Source & License	1	0.01	0.01
0005	CBL-1053 Cable, 16Ch Analog, Signal Cond to ADC	1	160.00	160.00
VALID TO DATE: 05-Oct-06.				

All delivery dates are subject to prior orders.  
 For and on behalf of Radstone Corp.  
 ROSSANA NORWOOD

Signed *R Norwood*  
 Date *09/06/06*

Acceptance of this Quotation constitutes acceptance of all of the Seller's Terms and Conditions of Sale on the reverse of page 1.

# RADSTONE TECHNOLOGY CORPORATION TERMS AND CONDITIONS

**1. Acceptance**

This sale is expressly conditioned on Buyer's acceptance of all of its terms and conditions. None of the terms and conditions contained in this document may be supplemented, modified, superseded or otherwise altered except by a written document signed by a Corporate officer of Seller. Buyer acknowledges that Seller sells the products solely pursuant to the terms and conditions set forth herein. Accordingly, any terms and conditions that may be contained in any purchase order or other form at Buyer shall be absolutely without force or effect regardless of when received by Seller and any additional or contrary terms are hereby expressly rejected. The terms and conditions hereof shall be deemed a binding contract between Buyer and Seller immediately upon receipt. These terms and conditions do not apply to software products which are not sold but supplied under the terms and conditions of a separate software license of sublicense.

**2. Warranty Repair and Exclusive Remedy**

Seller agrees to repair or replace, without charge, Sellers products which are returned for inspection to Sellers location within 1 year after the date of shipment by Seller, provided such inspection discloses to the satisfaction of Seller that the products or parts thereof are defective in material or workmanship and provided that the products have not been altered; repaired without sellers authorization or using procedures other than Sellers approved procedures, subjected to abuse, misuse, improper maintenance, negligence or accident; damaged by excessive or improper current or otherwise, or had the serial number or seal or any part thereof altered, defaced or removed. Parts manufactured by others which are not incorporated into the products by Seller at its factory are excluded from coverage and incorporation thereof is at Buyers sole risk.

The Seller warrants that each hardware, software and firmware product delivered under this Contract shall be able to accurately process data (including, but not limited to, calculating, comparing and sequencing) from, into, and between the twentieth and twenty-first centuries, including leap year calculations, when used in accordance with the product documentation provided by the Seller. If the Contract requires that specific listed products must perform as a system in accordance with the foregoing warranty, then that warranty shall apply to those listed products as a system. The duration of this warranty and the remedies available to the Buyer for breach of this warranty shall be as defined in, and subject to, the terms and limitations of the Seller's standard commercial warranty or warranties contained in this Contract, provided that notwithstanding any provision to the contrary in such commercial warranty or warranties, the remedies available to the Buyer under this warranty shall include repair or replacement of any product whose non-compliance is discovered and made known to the Seller in writing within twelve months after delivery.

**THE FOREGOING AGREEMENT TO REPAIR OR REPLACE SHALL BE BUYERS SOLE AND EXCLUSIVE REMEDY.**

**3. Disclaimer of Warranties; Limitation of Liability**

EXCEPT AS SPECIFICALLY OTHERWISE PROVIDED HEREIN, SELLER MAKES NO WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. IN NO EVENT, INCLUDING WITHOUT LIMITATION AS A RESULT OF SELLERS NEGLIGENCE, OR FOR ANY OTHER REASON, WILL SELLER BE RESPONSIBLE FOR SPECIAL, PUNITIVE, INDIRECT, CONSEQUENTIAL OR INCIDENTAL DAMAGES OR COMMERCIAL LOSSES, EVEN IF SELLER HAS BEEN ADVISED OF THE POSSIBILITY OF SAME. SELLERS ENTIRE LIABILITY FROM ANY AND ALL CAUSES PURSUANT TO THIS SALE (INCLUDING BUT NOT LIMITED TO WARRANTY CAUSES) SHALL BE LIMITED TO GENERAL MONEY DAMAGES IN AN AMOUNT NOT TO EXCEED THE TOTAL PURCHASE PRICE FOR THE PRODUCTS COVERED THEREBY, REGARDLESS OF THE FORM IN WHICH ANY LEGAL OR EQUITABLE ACTION MAY BE BROUGHT AGAINST SELLER.

**4. Customer Warranties**

- (a) The Customer warrants that where the products are to be used many, high risk or aviation application (as defined in sub-clause (c) and (d) below) the Customer will not use the products in any such application unless the Customer has first advised the Seller in writing of its intention and has obtained the Sellers written consent thereto.
- (b) The Customer warrants that the products will not be used in or incorporated into any nuclear facility (as defined in sub-clause (e) below) without first executing a deed of indemnity in a form approved by the Seller.
- (c) High risk application means an application with a switching or control function which is part of a rail engine or road vehicle used for the transportation of people without both operator involvement and a redundant/backup system.
- (d) Aviation application means an application for use in any of the following systems:
  - (i) air traffic control systems;
  - (ii) computer controlled radar systems;
  - (iii) meteorological data systems;
  - (iv) on-board avionics utilized by air traffic control systems;
  - (v) flight information systems;
  - (vi) air traffic control training systems;
  - (vii) air traffic control communications systems;
  - (viii) wind shear alert systems.
- (e) Nuclear facility means:
  - (i) nuclear reactor; or
  - (ii) any equipment or device designed or used for:
    - a) separating the isotopes of uranium or plutonium; or
    - b) processing or utilizing nuclear fuel; or
    - c) handling or packaging nuclear waste; or
  - (iii) any equipment or device used for the processing, fabricating or allowing of special nuclear material if at any time the total amount of such material at the premises where the equipment or device is located, consists of or contains more than 25 grams of plutonium or uranium 233 or combination thereof of more than 250 grams of uranium 235; or
  - (iv) any structure, basin, excavation, premises or place prepared for the storage or disposal of nuclear waste; or
  - (v) the site on which any of the foregoing is located, all operations conducted on such site and all premises used for such operations.
- (f) The Seller reserves the right to alter the definitions contained in clauses (c), (d) or (e) above without prior consultation with the Customer. Any such alterations shall be effective upon the Seller giving the Customer 28 days notice in writing.
- (g) The Customer shall fully and effectively indemnify the Seller against any loss, costs, damages and expenses including any consequential loss in the event of any breach of or failure in any way to fully comply with the warranties contained in Clause (a) and (b) above.

**5. Delivery**

Unless otherwise provided on the face hereof, all sales are F.O.B. Sellers location to include Billerica MA US; Towcester UK; Blackened UK; Ottawa Canada; Linden NJ US (Seller's carrier) and any other Seller location advised from time to time. Possession of all products shall be deemed to pass to Buyer upon delivery to the carrier at point of shipment and Buyer shall assume all risks of loss and damage and responsibility for obtaining and paying for insurance and negotiating with the carrier or insurance or both in the event of non-delivery, loss or damage, regardless of the fact that insurance may have been secured by Seller at Buyers request. Title to all products shall remain with Seller for security purposes as conditional vendor until the purchase price thereof has been paid in full. Buyer shall notify Seller in writing relative to any shortages or errors within 10 days from receipt of shipment. Seller will not consider any claims made after that period. All delivery dates are based on estimates and Sellers sole obligation shall be to exercise reasonable commercial efforts to meet such dates. Seller shall not be liable for delays in delivery or failure to manufacture, due to causes beyond its reasonable control such as acts of God, acts or omissions of civil or military authority, priorities, fire, strikes, floods, epidemics, quarantine, restrictions, riots, war, delays in transportation, car shortages, or inability to obtain necessary labor, materials, or manufacturing facilities from usual sources of supply on normal terms and conditions. In the event of any delay, the date of delivery shall be extended for a period equal to the time lost by reason of the delay. Seller shall have the right to cancel any order placed or to refuse or to delay the shipment thereof for failure of Buyer to make promptly any payments due Seller or any other reasonable requirements established by Seller or for any acts or omissions of Buyer which delay or impede Sellers performance. Unless otherwise specified on the face hereof, products shall be shipped in standard commercial packaging. When special, military or export packaging is required by Buyer or, in the opinion of Seller, is required under the circumstances, the cost of the same, if not set forth, will be separately invoiced.

**6. Payment**

Unless otherwise provided on the face hereof, terms of payment shall be NET 30 days from date of shipment. Seller may at any time when in its opinion, the financial condition of Buyer warrants, either alter or suspend credit and delay delivery until such time as the revised terms are met or the required assurances are given. Pre paid payments are due from Buyer as shipments are made by Seller. If the work to be performed hereunder is delayed by Buyer, payments shall be made based on the purchase price and the percentage of completion. If payment is not made by the date set forth herein, interest at the maximum rate then allowed by law shall be added until payment in full. In addition, Seller reserves all other rights granted to Seller pursuant to the Uniform Commercial Code for Buyers failure to pay for the products or other breach by Buyer of the terms and conditions hereof. Buyer agrees to reimburse Seller for any and all expenses Seller may incur, including reasonable attorneys fees, in taking any action to enforce its rights hereunder.

**7. Sales or Similar Taxes**

Prices do not include Federal, state or local taxes, now or hereafter enacted, applicable to the products sold, which tax or taxes will be added by Seller to the sales prices unless Seller has the legal obligation to collect same, and will be paid by Buyer unless Buyer provides Seller with a proper tax exemption certificate.

**8. Duties**

On sales to any point outside the United States, all export duties, licenses, and fees which Seller is required to pay will be payable by Buyer in addition to the price quoted hereof.

**9. Patents**

Seller agrees to defend Buyer, at Sellers own cost and expense, in any suit or proceeding in connection with any allegation (other than a allegation based on a combination of Sellers products with other products and Buyer hereby indemnifies Seller against any liability based on a claim of contributory infringement arising from such combination) that the products purchased hereunder infringe United States Letters Patent owned by others provided, however, that Seller is promptly notified in writing of any claim of infringement and furnished with all papers received in connection therewith provided further that Seller shall have sole direction and control of any negotiations or of any suit which may be brought or defended, and that Buyer then assists Seller in any way required by the attorneys of Seller in its defense. If Buyers use of such products shall be prevented by permanent injunction based on such an allegation (or if Seller considers that such an injunction may be entered), Seller shall have the right to modify the products so that they become non-infringing or substitute for the infringing products equally suitable non-infringing products, or at Sellers option to obtain for Buyer the right to continue the use of such products or at Sellers option to take back such products and refund any sums Buyer has paid Seller therefor, less a reasonable allowance for use, damage or obsolescence. No patent indemnity whatever against Non-United States patents is granted by Seller and Seller does not agree to defend or hold Buyer harmless for sale or use abroad. The foregoing states the entire liability of Seller for patent infringement by the products or any part thereof, any materials shall be manufactured or sold by Seller to meet Buyers particular specifications. Seller shall have no liability under this provision, and Buyer agrees to defend, protect, and save harmless Seller against all suits at law or in equity and from and against all expenses, loss, liability, damage, claims, and demands for actual or alleged infringement of any United States or foreign patent and to defend any suit or action which may be brought against Seller for any alleged infringement because of the manufacture or sale of the materials covered thereby.

**10. Cancellation of Order**

Orders accepted by Seller are subject to cancellation or modification only upon written request by Buyer received prior to shipment, with the consent of Seller and upon Buyers payment of reasonable cancellation charges which shall take into account expenses already incurred and commitments made by Seller and any loss of profit.

**11. Design Changes**

Seller reserves its rights to alter, modify or redesign its products and to cease manufacture of its products or parts thereof without any obligation to Buyer, including any obligation to notify Buyer or replace similar products previously shipped to Buyer.

**12. General**

Any amendments or waiver of these terms and conditions by Seller must be in writing and signed by an authorized representative of Seller.

Any assignment of this Agreement or of any rights hereunder by Buyer without the written consent of Seller shall be voidable at Sellers option.

Buyer will assume complete responsibility for compliance with local laws and ordinances obtaining all permits, licensing authorizations or certificates required by any regulatory body for the delivery, installation or use of the products; in no event will Seller act as Buyers representative or agent in these matters.

If this contract indicates that it is a government contract or a government subcontract, it is subject to all applicable government laws and regulations including those attached hereto.

Regardless of its place of negotiation or execution, this contract shall be governed by the laws of the State of New York as same would be applied contracts between New York residents to be performed wholly within the state.

62

Commercial in Confidence

Radstone Technology Corporation  
296 Concord Road Suite 120  
Billerica, MA 01821  
U.S.A.

Telephone (General): 978-671-9490  
Facsimile (General): 978-671-9488



www.radstone.com

### Quotation 20004881

Supersedes  
20004856

Customer contact: MARK McKERNAN  
Telephone: 925-423-3825  
Facsimile:  
email: mckernan1@ltnl.gov

Customer Address 2992	Information Page: 1
UNIVERSITY OF CALIFORNIA LAWRENCE LIVERMORE NATIONAL LAB. 7000 EAST AVENUE LIVERMORE CA 94550 FAO: MARK McKERNAN	Quotation No. 20004881 Quotation Date 06-Sep-06 Customer RFQ E-mail dated September 0 Radstone Sales Mgr John Gurule Telephone 9518081711 Fax email John.Gurule@ics-ltd.com

Payment Terms: 30 days from date of invoice  
Delivery Terms: Free on Board Seller's Location

Quotation Details				
Item	Description	Quantity	Unit Price	Extended Amount
0001	ICS-121A-32-B300 32 Channel Signal Conditioning Board <i>Delivery Estimated @ 9 Weeks, ARO.</i>	1	10,995.00	10,995.00
0002	ICS-130-32 32-Ch, 1.2MHz/ch, 16-Bit Sigma-Delta ADC <i>Delivery Estimated @ 4 Weeks, ARO.</i>	1	11,995.00	11,995.00
0003	DRV-121-VXW VxWorks S/W Dev Drvr W/Source & License	1	0.01	0.01
0004	DRV-130-VXW VxWorks s/w Dev Drvr w/Source & License	1	0.01	0.01
0005	CBL-1053 Cable, 16Ch Analog, Signal Cond to ADC	1	160.00	160.00
VALID TO DATE: 05-Oct-06.				

All delivery dates are subject to prior orders.  
For and on behalf of Radstone Corp.  
ROSSANA NORWOOD

Signed: *R Norwood*  
Date: *09/06/06*

Acceptance of this Quotation constitutes acceptance of all of the Seller's Terms and Conditions of Sale on the reverse of page 1.

63

Home SLAC Directory Purchasing Property Stores Financials Tools Forms Travel Security Feedback Useful Info

Printable Version

0000136308 Search Req

Approved

Type: **Regular Purchase Requisition**  
 Requisition: **0000136308**  
 Date: 12/20/07  
 Buyer: McGiven,David D.  
 Entered by: DARLENE  
All Comments  
 Requestor: Schuh,Stephen  
 Suggested Vendor: Buckles-Smith Electric

Item	Qty	Unit \$	Unit	Est Cost	Description	P.O.	Charge No.	Dlvr To	PO Cost
1	1.2	403.000	EA	483.600	B280: Allen-Bradley 1756-A10 10 SLOT CONTROLLOGIX CHASSIS	73136	8823002	280A -280	397.560
<< attached quote #1582470 from Buckles-Smith Electric. Quantities on this req vary slightly from quantities on the quote; the vendor will honor the quoted prices in spite of changes in quantity. Darlene: Please charge every line item to the following three accounts: Charge 45% to 9242605 Charge 45% to 9242411 Charge 10% to 8823002 >>									
	5.4	403.000	EA	2,176.200	B280: Allen-Bradley 1756-A10 10 SLOT CONTROLLOGIX CHASSIS	73136	9242411	280A -280	1,789.020
	5.4	403.000	EA	2,176.200	B280: Allen-Bradley 1756-A10 10 SLOT CONTROLLOGIX CHASSIS	73136	9242605	280A -280	1,789.020
2	1.2	600.625	EA	720.750	B280: Allen-Bradley 1756-PA72 CONTROLLOGIX POWER SUPPLY, 120/240 VAC	73136	8823002	280A -280	590.180
	5.4	600.625	EA	3,243.375	B280: Allen-Bradley 1756-PA72 CONTROLLOGIX POWER SUPPLY, 120/240 VAC	73136	9242411	280A -280	2,655.830
	5.4	600.625	EA	3,243.375	B280: Allen-Bradley 1756-PA72 CONTROLLOGIX POWER SUPPLY, 120/240 VAC	73136	9242605	280A -280	2,655.830

3	0.4	3,762.625	EA	1,505.050	B280: Allen-Bradley 1756-L61 2MB CONTROLLOGIX CPU SERIES B	73136	8823002	280A -280	1,229.550
	1.8	3,762.625	EA	6,772.725	B280: Allen-Bradley 1756-L61 2MB CONTROLLOGIX CPU SERIES B	73136	9242411	280A -280	5,532.980
	1.8	3,762.625	EA	6,772.725	B280: Allen-Bradley 1756-L61 2MB CONTROLLOGIX CPU SERIES B	73136	9242605	280A -280	5,532.990
4	1.1	1,449.250	EA	1,594.175	B280: Allen-Bradley 1756CN2 CNET BRIDGE GEN 2	73136	8823002	280A -280	1,542.750
	4.95	1,449.250	EA	7,173.788	B280: Allen-Bradley 1756CN2 CNET BRIDGE GEN 2	73136	9242411	280A -280	6,942.380
	4.95	1,449.250	EA	7,173.788	B280: Allen-Bradley 1756CN2 CNET BRIDGE GEN 2	73136	9242605	280A -280	6,942.370
5	0.4	1,953.000	EA	781.200	B280: Allen-Bradley 1756-EN2T ETHERNET/IP MODUL	73136	8823002	280A -280	756.000
	1.8	1,953.000	EA	3,515.400	B280: Allen-Bradley 1756-EN2T ETHERNET/IP MODUL	73136	9242411	280A -280	3,402.000
	1.8	1,953.000	EA	3,515.400	B280: Allen-Bradley 1756-EN2T ETHERNET/IP MODUL	73136	9242605	280A -280	3,402.000
6	0.6	414.625	EA	248.775	B280: Allen-Bradley 1756-OW16I N.O. ISOLATED RELAY OUTPUT MODULE, 16PT	73136	8823002	280A -280	204.920
	2.7	414.625	EA	1,119.488	B280: Allen-Bradley 1756-OW16I N.O. ISOLATED RELAY OUTPUT MODULE, 16PT	73136	9242411	280A -280	922.160
	2.7	414.625	EA	1,119.488	B280: Allen-Bradley 1756-OW16I N.O. ISOLATED RELAY OUTPUT MODULE, 16PT	73136	9242605	280A -280	922.160
7	0.3	437.875	EA	131.363	B280: Allen-Bradley 1756-OB16I 30VDC 36PN	73136	8823002	280A -280	108.610

63

	1.35	437.875	EA	591.131	B280: Allen-Bradley 1756-OB16I 30VDC 36PN	73136	9242411	280A -280	488.750
	1.35	437.875	EA	591.131	B280: Allen-Bradley 1756-OB16I 30VDC 36PN	73136	9242605	280A -280	488.760
8	1	468.875	EA	468.875	B280: Allen-Bradley 1756-OV32E (32) PT. OUTPUT MODULE, 24VDC SINKING ELECTRONIC FUSING	73136	8823002	280A -280	453.750
	4.5	468.875	EA	2,109.938	B280: Allen-Bradley 1756-OV32E (32) PT. OUTPUT MODULE, 24VDC SINKING ELECTRONIC FUSING	73136	9242411	280A -280	2,041.880
	4.5	468.875	EA	2,109.938	B280: Allen-Bradley 1756-OV32E (32) PT. OUTPUT MODULE, 24VDC SINKING ELECTRONIC FUSING	73136	9242605	280A -280	2,041.870
9	2	313.875	EA	627.750	B280: Allen-Bradley 1756-IB32 10-31 VDC INPUT MODULE, 32PT.,	73136	8823002	280A -280	512.320
	9	313.875	EA	2,824.875	B280: Allen-Bradley 1756-IB32 10-31 VDC INPUT MODULE, 32PT.,	73136	9242411	280A -280	2,305.440
	9	313.875	EA	2,824.875	B280: Allen-Bradley 1756-IB32 10-31 VDC INPUT MODULE, 32PT.,	73136	9242605	280A -280	2,305.440
10	0.2	337.125	EA	67.425	B280: Allen-Bradley 1756-IB16I SINK/SOURCE DC INPUT	73136	8823002	280A -280	55.330
	0.9	337.125	EA	303.413	B280: Allen-Bradley 1756-IB16I SINK/SOURCE DC INPUT	73136	9242411	280A -280	248.990
	0.9	337.125	EA	303.413	B280: Allen-Bradley 1756-IB16I SINK/SOURCE DC INPUT	73136	9242605	280A -280	248.980
11	1.5	1,030.750	EA	1,546.125	B280: Allen-Bradley 1756-IF16 ANALOG INPUT MODULE 16 CHANNEL,	73136	8823002	280A -280	1,280.790

CURRENT/VOLTAGE									
	6.75	1,030.750	EA	6,957.563	B280: Allen-Bradley 1756-IF16 ANALOG INPUT MODULE 16 CHANNEL, CURRENT/VOLTAGE	73136	9242411	280A -280	5,763.560
	6.75	1,030.750	EA	6,957.563	B280: Allen-Bradley 1756-IF16 ANALOG INPUT MODULE 16 CHANNEL, CURRENT/VOLTAGE	73136	9242605	280A -280	5,763.550
12	5.1	19.375	EA	98.813	B280: Allen-Bradley 1756-N2 EMPTY SLOT FILLER	73136	8823002	280A -280	62.730
	22.95	19.375	EA	444.656	B280: Allen-Bradley 1756-N2 EMPTY SLOT FILLER	73136	9242411	280A -280	282.290
	22.95	19.375	EA	444.656	B280: Allen-Bradley 1756-N2 EMPTY SLOT FILLER	73136	9242605	280A -280	282.280
13	2.4	88.800	EA	213.120	B280: Allen-Bradley 1492-IFM40F 40 POINT IFM TERMINAL BLOCK	73136	8823002	280A -280	199.800
	10.8	88.800	EA	959.040	B280: Allen-Bradley 1492-IFM40F 40 POINT IFM TERMINAL BLOCK	73136	9242411	280A -280	899.100
	10.8	88.800	EA	959.040	B280: Allen-Bradley 1492-IFM40F 40 POINT IFM TERMINAL BLOCK	73136	9242605	280A -280	899.100
14	1.6	96.000	EA	153.600	B280: Allen-Bradley 1492-AIFM8-3 MODULE INTERF	73136	8823002	280A -280	144.000
	7.2	96.000	EA	691.200	B280: Allen-Bradley 1492-AIFM8-3 MODULE INTERF	73136	9242411	280A -280	648.000
	7.2	96.000	EA	691.200	B280: Allen-Bradley 1492-AIFM8-3 MODULE INTERF	73136	9242605	280A -280	648.000
15	1.1	200.000	EA	220.000	B280: Allen-Bradley 1492-CABLE025Y ASSEMBLY CA	73136	8823002	280A -280	206.250
	4.95	200.000	EA	990.000	B280: Allen-Bradley 1492-CABLE025Y ASSEMBLY CA	73136	9242411	280A -280	928.130
	4.95	200.000	EA	990.000	B280: Allen-Bradley 1492-CABLE025Y ASSEMBLY CA	73136	9242605	280A -280	928.120

63

16	1.6	208.800	EA	334.080	B280: Allen-Bradley 1492-ACABLE025UA CABLE ASSE	73136	8823002	280A -280	313.200
	7.2	208.800	EA	1,503.360	B280: Allen-Bradley 1492-ACABLE025UA CABLE ASSE	73136	9242411	280A -280	1,409.400
	7.2	208.800	EA	1,503.360	B280: Allen-Bradley 1492-ACABLE025UA CABLE ASSE	73136	9242605	280A -280	1,409.400
17	3	200.000	EA	600.000	B280: Allen-Bradley 1492-CABLE025Z ASSEMBLY CA	73136	8823002	280A -280	562.500
	13.5	200.000	EA	2,700.000	B280: Allen-Bradley 1492-CABLE025Z ASSEMBLY CA	73136	9242411	280A -280	2,531.250
	13.5	200.000	EA	2,700.000	B280: Allen-Bradley 1492-CABLE025Z ASSEMBLY CA	73136	9242605	280A -280	2,531.250
18	1.3	75.950	EA	98.735	B280: Allen-Bradley 1786-TPS CONTROLNET T-TAP, STRAIGHT	73136	8823002	280A -280	95.550
	5.85	75.950	EA	444.308	B280: Allen-Bradley 1786-TPS CONTROLNET T-TAP, STRAIGHT	73136	9242411	280A -280	429.980
	5.85	75.950	EA	444.308	B280: Allen-Bradley 1786-TPS CONTROLNET T-TAP, STRAIGHT	73136	9242605	280A -280	429.970
19	1	5.425	EA	5.425	B280: Allen-Bradley 1786-XT 75 OHM TERMINATOR FOR CONTROLNET TRUNKLINE	73136	8823002	280A -280	5.250
	4.5	5.425	EA	24.413	B280: Allen-Bradley 1786-XT 75 OHM TERMINATOR FOR CONTROLNET TRUNKLINE	73136	9242411	280A -280	23.630
	4.5	5.425	EA	24.413	B280: Allen-Bradley 1786-XT 75 OHM TERMINATOR FOR CONTROLNET TRUNKLINE	73136	9242605	280A -280	23.620
Totals				\$98,988.607					\$87,210.520

Purchase Order: 73119

Canceled  
PO Not Received



TYPE: Regular Purchase Order  
 PO Date: 1/17/2008  
 Buyer: MCGIVEN  
 Approved Vendor: Rockwell Automation

PO Line	Req Line	Qty	Unit Price	Unit	P.O. Cost	Description	Due Date	Charge No.	Location	Date Received
1.1.1 X	<u>1</u>	17.4	403.00	EA	7,012.20	B280: Allen-Bradley 1756-A10 10 SLOT CONTROLLOGIX CHASSIS	2/22/2008	9242605	280A -280	N/A
1.1.2 X	<u>1</u>	5.4	403.00	EA	2,176.20	B280: Allen-Bradley 1756-A10 10 SLOT CONTROLLOGIX CHASSIS	2/22/2008	9242411	280A -280	N/A
1.1.3 X	<u>1</u>	1.2	403.00	EA	483.60	B280: Allen-Bradley 1756-A10 10 SLOT CONTROLLOGIX CHASSIS	2/22/2008	8823002	280A -280	N/A
2.1.1 X	<u>2</u>	17.4	600.63	EA	10,450.88	B280: Allen-Bradley 1756-PA72 CONTROLLOGIX POWER SUPPLY, 120/240 VAC	2/22/2008	9242605	280A -280	N/A
2.1.2 X	<u>2</u>	5.4	600.63	EA	3,243.38	B280: Allen-Bradley 1756-PA72 CONTROLLOGIX POWER SUPPLY, 120/240 VAC	2/22/2008	9242411	280A -280	N/A
2.1.3 X	<u>2</u>	1.2	600.63	EA	720.75	B280: Allen-Bradley 1756-PA72 CONTROLLOGIX POWER SUPPLY, 120/240 VAC	2/22/2008	8823002	280A -280	N/A
3.1.1 X	<u>3</u>	5.8	3,762.63	EA	21,823.23	B280: Allen-Bradley 1756-L61 2MB CONTROLLOGIX CPU SERIES B	2/22/2008	9242605	280A -280	N/A
3.1.2 X	<u>3</u>	1.8	3,762.63	EA	6,772.73	B280: Allen-Bradley 1756-L61 2MB CONTROLLOGIX CPU SERIES B	2/22/2008	9242411	280A -280	N/A
3.1.3 X	<u>3</u>	0.4	3,762.63	EA	1,505.05	B280: Allen-Bradley 1756-L61 2MB CONTROLLOGIX CPU SERIES B	2/22/2008	8823002	280A -280	N/A
4.1.1 X	<u>4</u>	4	1,449.25	EA	5,797.00	B280: Allen-Bradley 1756CN2 CNET BRIDGE GEN 2	2/22/2008	9242605	280A -280	N/A

63

4.1.2 X	<u>4</u>	16.9	1,449.25	EA	24,492.33	B280: Allen-Bradley 1756CN2 CNET BRIDGE GEN 2	2/22/2008	9242411	280A -280	N/A
4.1.3 X	<u>4</u>	1.1	1,449.25	EA	1,594.18	B280: Allen-Bradley 1756CN2 CNET BRIDGE GEN 2	2/22/2008	8823002	280A -280	N/A
5.1.1 X	<u>5</u>	5.8	1,953.00	EA	11,327.40	B280: Allen-Bradley 1756-EN2T ETHERNET/IP MODUL	2/22/2008	9242605	280A -280	N/A
5.1.2 X	<u>5</u>	1.8	1,953.00	EA	3,515.40	B280: Allen-Bradley 1756-EN2T ETHERNET/IP MODUL	2/22/2008	9242411	280A -280	N/A
5.1.3 X	<u>5</u>	0.4	1,953.00	EA	781.20	B280: Allen-Bradley 1756-EN2T ETHERNET/IP MODUL	2/22/2008	8823002	280A -280	N/A
6.1.1 X	<u>6</u>	8.7	414.63	EA	3,607.24	B280: Allen-Bradley 1756-OW16I N.O. ISOLATED RELAY OUTPUT MODULE, 16PT	2/22/2008	9242605	280A -280	N/A
6.1.2 X	<u>6</u>	2.7	414.63	EA	1,119.49	B280: Allen-Bradley 1756-OW16I N.O. ISOLATED RELAY OUTPUT MODULE, 16PT	2/22/2008	9242411	280A -280	N/A
6.1.3 X	<u>6</u>	0.6	414.63	EA	248.78	B280: Allen-Bradley 1756-OW16I N.O. ISOLATED RELAY OUTPUT MODULE, 16PT	2/22/2008	8823002	280A -280	N/A
7.1.1 X	<u>7</u>	4.35	437.88	EA	1,904.76	B280: Allen-Bradley 1756-OB16I 30VDC 36PN	2/22/2008	9242605	280A -280	N/A
7.1.2 X	<u>7</u>	1.35	437.88	EA	591.13	B280: Allen-Bradley 1756-OB16I 30VDC 36PN	2/22/2008	9242411	280A -280	N/A
7.1.3 X	<u>7</u>	0.3	437.88	EA	131.36	B280: Allen-Bradley 1756-OB16I 30VDC 36PN	2/22/2008	8823002	280A -280	N/A
8.1.1 X	<u>8</u>	3	468.88	EA	1,406.63	B280: Allen-Bradley 1756-OV32E (32) PT. OUTPUT MODULE, 24VDC SINKING ELECTRONIC FUSING	2/22/2008	9242605	280A -280	N/A
8.1.2 X	<u>8</u>	16	468.88	EA	7,502.00	B280: Allen-Bradley 1756-OV32E (32) PT. OUTPUT MODULE, 24VDC SINKING	2/22/2008	9242411	280A -280	N/A

ELECTRONIC FUSING										
8.1.3 X	<u>8</u>	1	468.88	EA	468.88	B280: Allen-Bradley 1756-OV32E (32) PT. OUTPUT MODULE, 24VDC SINKING ELECTRONIC FUSING	2/22/2008	8823002	280A -280	N/A
9.1.1 X	<u>9</u>	29	313.88	EA	9,102.38	B280: Allen-Bradley 1756-IB32 10-31 VDC INPUT MODULE, 32PT.,	2/22/2008	9242605	280A -280	N/A
9.1.2 X	<u>9</u>	9	313.88	EA	2,824.88	B280: Allen-Bradley 1756-IB32 10-31 VDC INPUT MODULE, 32PT.,	2/22/2008	9242411	280A -280	N/A
9.1.3 X	<u>9</u>	2	313.88	EA	627.75	B280: Allen-Bradley 1756-IB32 10-31 VDC INPUT MODULE, 32PT.,	2/22/2008	8823002	280A -280	N/A
10.1.1 X	<u>10</u>	2.9	337.13	EA	977.66	B280: Allen-Bradley 1756-IB16I SINK/SOURCE DC INPUT	1/30/2008	9242605	280A -280	N/A
10.1.2 X	<u>10</u>	0.9	337.13	EA	303.41	B280: Allen-Bradley 1756-IB16I SINK/SOURCE DC INPUT	1/30/2008	9242411	280A -280	N/A
10.1.3 X	<u>10</u>	0.2	337.13	EA	67.43	B280: Allen-Bradley 1756-IB16I SINK/SOURCE DC INPUT	1/30/2008	8823002	280A -280	N/A
11.1.1 X	<u>11</u>	2	1,030.75	EA	2,061.50	B280: Allen-Bradley 1756-IF16 ANALOG INPUT MODULE 16 CHANNEL, CURRENT/VOLTAGE	2/22/2008	9242605	280A -280	N/A
11.1.2 X	<u>11</u>	26.5	1,030.75	EA	27,314.88	B280: Allen-Bradley 1756-IF16 ANALOG INPUT MODULE 16 CHANNEL, CURRENT/VOLTAGE	2/22/2008	9242411	280A -280	N/A
11.1.3 X	<u>11</u>	1.5	1,030.75	EA	1,546.13	B280: Allen-Bradley 1756-IF16 ANALOG INPUT MODULE 16 CHANNEL, CURRENT/VOLTAGE	2/22/2008	8823002	280A -280	N/A
12.1.1 X	<u>12</u>	19.75	19.38	EA	382.66	B280: Allen-Bradley 1756-N2 EMPTY SLOT FILLER	2/22/2008	9242605	280A -280	N/A

63

12.1.2 X	<u>12</u>	38.15	19.38	EA	739.16	B280: Allen-Bradley 1756-N2 EMPTY SLOT FILLER	2/22/2008	9242411	280A -280	N/A
12.1.3 X	<u>12</u>	5.1	19.38	EA	98.81	B280: Allen-Bradley 1756-N2 EMPTY SLOT FILLER	2/22/2008	8823002	280A -280	N/A
13.1.1 X	<u>13</u>	34.8	88.80	EA	3,090.24	B280: Allen-Bradley 1492-IFM40F 40 POINT IFM TERMINAL BLOCK	2/22/2008	9242605	280A -280	N/A
13.1.2 X	<u>13</u>	10.8	88.80	EA	959.04	B280: Allen-Bradley 1492-IFM40F 40 POINT IFM TERMINAL BLOCK	2/22/2008	9242411	280A -280	N/A
13.1.3 X	<u>13</u>	2.4	88.80	EA	213.12	B280: Allen-Bradley 1492-IFM40F 40 POINT IFM TERMINAL BLOCK	2/22/2008	8823002	280A -280	N/A
14.1.1 X	<u>14</u>	23.2	96.00	EA	2,227.20	B280: Allen-Bradley 1492-AIFM8-3 MODULE INTERF	2/22/2008	9242605	280A -280	N/A
14.1.2 X	<u>14</u>	7.2	96.00	EA	691.20	B280: Allen-Bradley 1492-AIFM8-3 MODULE INTERF	2/22/2008	9242411	280A -280	N/A
14.1.3 X	<u>14</u>	1.6	96.00	EA	153.60	B280: Allen-Bradley 1492-AIFM8-3 MODULE INTERF	2/22/2008	8823002	280A -280	N/A
15.1.1 X	<u>15</u>	15.95	200.00	EA	3,190.00	B280: Allen-Bradley 1492-CABLE025Y ASSEMBLY CA	2/22/2008	9242605	280A -280	N/A
15.1.2 X	<u>15</u>	4.95	200.00	EA	990.00	B280: Allen-Bradley 1492-CABLE025Y ASSEMBLY CA	2/22/2008	9242411	280A -280	N/A
15.1.3 X	<u>15</u>	1.1	200.00	EA	220.00	B280: Allen-Bradley 1492-CABLE025Y ASSEMBLY CA	2/22/2008	8823002	280A -280	N/A
16.1.1 X	<u>16</u>	23.2	208.80	EA	4,844.16	B280: Allen-Bradley 1492-ACABLE025UA CABLE ASSE	2/22/2008	9242605	280A -280	N/A
16.1.2 X	<u>16</u>	7.2	208.80	EA	1,503.36	B280: Allen-Bradley 1492-ACABLE025UA CABLE ASSE	2/22/2008	9242411	280A -280	N/A
16.1.3 X	<u>16</u>	1.6	208.80	EA	334.08	B280: Allen-Bradley 1492-ACABLE025UA CABLE ASSE	2/22/2008	8823002	280A -280	N/A
17.1.1 X	<u>17</u>	43.5	200.00	EA	8,700.00	B280: Allen-Bradley 1492-CABLE025Z ASSEMBLY CA	2/22/2008	9242605	280A -280	N/A

17.1.2 X	<u>17</u>	13.5	200.00	EA	2,700.00	B280: Allen-Bradley 1492-CABLE025Z ASSEMBLY CA	2/22/2008	9242411	280A -280	N/A
17.1.3 X	<u>17</u>	3	200.00	EA	600.00	B280: Allen-Bradley 1492-CABLE025Z ASSEMBLY CA	2/22/2008	8823002	280A -280	N/A
18.1.1 X	<u>18</u>	18.85	75.95	EA	1,431.66	B280: Allen-Bradley 1786-TPS CONTROLNET T-TAP, STRAIGHT	2/22/2008	9242605	280A -280	N/A
18.1.2 X	<u>18</u>	5.85	75.95	EA	444.31	B280: Allen-Bradley 1786-TPS CONTROLNET T-TAP, STRAIGHT	2/22/2008	9242411	280A -280	N/A
18.1.3 X	<u>18</u>	1.3	75.95	EA	98.74	B280: Allen-Bradley 1786-TPS CONTROLNET T-TAP, STRAIGHT	2/22/2008	8823002	280A -280	N/A
19.1.1 X	<u>19</u>	14.5	5.43	EA	78.66	B280: Allen-Bradley 1786-XT 75 OHM TERMINATOR FOR CONTROLNET TRUNKLINE	2/22/2008	9242605	280A -280	N/A
19.1.2 X	<u>19</u>	4.5	5.43	EA	24.41	B280: Allen-Bradley 1786-XT 75 OHM TERMINATOR FOR CONTROLNET TRUNKLINE	2/22/2008	9242411	280A -280	N/A
19.1.3 X	<u>19</u>	1	5.43	EA	5.43	B280: Allen-Bradley 1786-XT 75 OHM TERMINATOR FOR CONTROLNET TRUNKLINE	2/22/2008	8823002	280A -280	N/A

Purchase Order: 73120

Canceled  
PO Not Received

TYPE: Regular Purchase Order  
 PO Date: 1/17/2008  
 Buyer: MCGIVEN  
 Approved Vendor: Rockwell Automation

PO Line	Req Line	Qty	Unit Price	Unit	P.O. Cost	Description	Due Date	Charge No.	Location	Date Received
1 X	<u>0</u>	12	403.00	EA	4,836.00	B280: Allen-Bradley 1756-A10 10 SLOT CONTROLLOGIX CHASSIS	2/22/2008	9242605	280	N/A

63

2 X	<u>0</u>	12	600.63	EA	7,207.50	B280: Allen-Bradley 1756-PA72 CONTROLLOGIX POWER SUPPLY, 120/240 VAC	2/22/2008	9242605	280	N/A
3 X	<u>0</u>	4	3,762.63	EA	15,050.50	B280: Allen-Bradley 1756-L61 2MB CONTROLLOGIX CPU SERIES B	2/22/2008	9242605	280	N/A
4 X	<u>4</u>	11	1,449.25	EA	15,941.75	B280: Allen-Bradley 1756CN2 CNET BRIDGE GEN 2	2/22/2008	9242605	280A -280	N/A
5 X	<u>0</u>	4	1,953.00	EA	7,812.00	B280: Allen-Bradley 1756-EN2T ETHERNET/IP MODUL	2/22/2008	9242605	280	N/A
6 X	<u>0</u>	6	414.63	EA	2,487.75	B280: Allen-Bradley 1756-OW16I N.O. ISOLATED RELAY OUTPUT MODULE, 16PT	2/22/2008	9242605	280	N/A
7 X	<u>0</u>	3	437.88	EA	1,313.63	B280: Allen-Bradley 1756-OB16I 30VDC 36PN	2/22/2008	9242605	280	N/A
8 X	<u>8</u>	10	468.88	EA	4,688.75	B280: Allen-Bradley 1756-OV32E (32) PT. OUTPUT MODULE, 24VDC SINKING ELECTRONIC FUSING	2/22/2008	9242605	280A -280	N/A
9 X	<u>0</u>	20	313.88	EA	6,277.50	B280: Allen-Bradley 1756-IB32 10-31 VDC INPUT MODULE, 32PT.,	2/22/2008	9242605	280	N/A
10 X	<u>0</u>	2	337.13	EA	674.25	B280: Allen-Bradley 1756-IB16I SINK/SOURCE DC INPUT	1/30/2008	9242605	280	N/A
11 X	<u>11</u>	15	1,030.75	EA	15,461.25	B280: Allen-Bradley 1756-IF16 ANALOG INPUT MODULE 16 CHANNEL, CURRENT/VOLTAGE	2/22/2008	9242605	280A -280	N/A
12 X	<u>12</u>	51	19.38	EA	988.13	B280: Allen-Bradley 1756-N2 EMPTY SLOT FILLER	2/22/2008	9242605	280A -280	N/A
13 X	<u>0</u>	24	88.80	EA	2,131.20	B280: Allen-Bradley 1492-IFM40F 40 POINT IFM TERMINAL BLOCK	2/22/2008	9242605	280	N/A
14 X	<u>0</u>	16	96.00	EA	1,536.00	B280: Allen-Bradley 1492-AIFM8-3 MODULE INTERF	2/22/2008	9242605	280	N/A

15 X	<u>0</u>	11	200.00	EA	2,200.00	B280: Allen-Bradley 1492-CABLE025Y ASSEMBLY CA	2/22/2008	9242605	280	N/A
16 X	<u>0</u>	16	208.80	EA	3,340.80	B280: Allen-Bradley 1492-ACABLE025UA CABLE ASSE	2/22/2008	9242605	280	N/A
17 X	<u>0</u>	30	200.00	EA	6,000.00	B280: Allen-Bradley 1492-CABLE025Z ASSEMBLY CA	2/22/2008	9242605	280	N/A
18 X	<u>0</u>	13	75.95	EA	987.35	B280: Allen-Bradley 1786-TPS CONTROLNET T-TAP, STRAIGHT	2/22/2008	9242605	280	N/A
19 X	<u>0</u>	10	5.43	EA	54.25	B280: Allen-Bradley 1786-XT 75 OHM TERMINATOR FOR CONTROLNET TRUNKLINE	2/22/2008	9242605	280	N/A

Purchase Order: 73133

Canceled  
PO Not Received

TYPE: Regular Purchase Order  
 PO Date: 1/18/2008  
 Buyer: MCGIVEN  
 Approved Vendor: Rockwell Automation

PO Line	Req Line	Qty	Unit Price	Unit	P.O. Cost	Description	Due Date	Charge No.	Location	Date Received
1 X	<u>4</u>	11	1,449.25	EA	15,941.75	B280: Allen-Bradley 1756CN2 CNET BRIDGE GEN 2	2/22/2008	9242605	280A -280	N/A
2 X	<u>8</u>	10	468.88	EA	4,688.75	B280: Allen-Bradley 1756-OV32E (32) PT. OUTPUT MODULE, 24VDC SINKING ELECTRONIC FUSING	2/22/2008	9242605	280A -280	N/A
3 X	<u>11</u>	15	1,030.75	EA	15,461.25	B280: Allen-Bradley 1756-IF16 ANALOG INPUT MODULE 16 CHANNEL, CURRENT/VOLTAGE	2/22/2008	9242605	280A -280	N/A
4 X	<u>12</u>	51	19.38	EA	988.13	B280: Allen-Bradley 1756-N2 EMPTY SLOT FILLER	2/22/2008	9242605	280A -280	N/A

Purchase Order: 73136

Dispatched  
PO Partially Received

63

TYPE: Regular Purchase Order  
 PO Date: 1/22/2008  
 Buyer: MCGIVEN  
 Comment: Stanford Linear Accelerator Center Terms and Conditions for Commercial Supplies and Services, M366 Rev 3 (07/07), are attached hereto and incorporated by reference, as applicable to non-GSA Schedule items.  
 Approved Vendor: Rockwell Automation

PO Line	Req Line	Qty	Unit Price	Unit	P.O. Cost	Description	Due Date	Charge No.	Location	Date Received
1.1.1	<u>1</u>	5.4	331.30	EA	1,789.02	B280: Allen-Bradley 1756-A10 10 SLOT CONTROLLOGIX CHASSIS	2/22/2008	9242605	280A -280	02/22/08
1.1.2	<u>1</u>	5.4	331.30	EA	1,789.02	B280: Allen-Bradley 1756-A10 10 SLOT CONTROLLOGIX CHASSIS	2/22/2008	9242411	280A -280	02/22/08
1.1.3	<u>1</u>	1.2	331.30	EA	397.56	B280: Allen-Bradley 1756-A10 10 SLOT CONTROLLOGIX CHASSIS	2/22/2008	8823002	280A -280	02/22/08
2.1.1	<u>2</u>	5.4	491.82	EA	2,655.83	B280: Allen-Bradley 1756-PA72 CONTROLLOGIX POWER SUPPLY, 120/240 VAC	2/22/2008	9242605	280A -280	02/22/08
2.1.2	<u>2</u>	5.4	491.82	EA	2,655.83	B280: Allen-Bradley 1756-PA72 CONTROLLOGIX POWER SUPPLY, 120/240 VAC	2/22/2008	9242411	280A -280	02/22/08
2.1.3	<u>2</u>	1.2	491.82	EA	590.18	B280: Allen-Bradley 1756-PA72 CONTROLLOGIX POWER SUPPLY, 120/240 VAC	2/22/2008	8823002	280A -280	02/22/08
3.1.1	<u>3</u>	1.8	3,073.88	EA	5,532.98	B280: Allen-Bradley 1756-L61 2MB CONTROLLOGIX CPU SERIES B	2/22/2008	9242605	280A -280	02/22/08
3.1.2	<u>3</u>	1.8	3,073.88	EA	5,532.98	B280: Allen-Bradley 1756-L61 2MB CONTROLLOGIX CPU SERIES B	2/22/2008	9242411	280A -280	02/22/08
3.1.3	<u>3</u>	0.4	3,073.88	EA	1,229.55	B280: Allen-Bradley 1756-L61 2MB CONTROLLOGIX CPU	2/22/2008	8823002	280A -280	02/22/08



SERIES B										
4.1.1	<u>4</u>	4.95	1,402.50	EA	6,942.38	B280: Allen-Bradley 1756CN2 CNET BRIDGE GEN 2	2/22/2008	9242605	280A -280	02/22/08
OPEN MARKET ITEM NOT ON THE FEDERAL SUPPLY SCHEDULE										
4.1.2	<u>4</u>	4.95	1,402.50	EA	6,942.38	B280: Allen-Bradley 1756CN2 CNET BRIDGE GEN 2	2/22/2008	9242411	280A -280	02/22/08
4.1.3	<u>4</u>	1.1	1,402.50	EA	1,542.75	B280: Allen-Bradley 1756CN2 CNET BRIDGE GEN 2	2/22/2008	8823002	280A -280	02/22/08
5.1.1	<u>5</u>	1.8	1,890.00	EA	3,402.00	B280: Allen-Bradley 1756-EN2T ETHERNET/IP MODUL	2/22/2008	9242605	280A -280	02/22/08
OPEN MARKET ITEM NOT ON THE FEDERAL SUPPLY SCHEDULE										
5.1.2	<u>5</u>	1.8	1,890.00	EA	3,402.00	B280: Allen-Bradley 1756-EN2T ETHERNET/IP MODUL	2/22/2008	9242411	280A -280	02/22/08
5.1.3	<u>5</u>	0.4	1,890.00	EA	756.00	B280: Allen-Bradley 1756-EN2T ETHERNET/IP MODUL	2/22/2008	8823002	280A -280	02/22/08
6.1.1	<u>6</u>	2.7	341.54	EA	922.16	B280: Allen-Bradley 1756-OW16I N.O. ISOLATED RELAY OUTPUT MODULE, 16PT	2/22/2008	9242605	280A -280	02/22/08
6.1.2	<u>6</u>	2.7	341.54	EA	922.16	B280: Allen-Bradley 1756-OW16I N.O. ISOLATED RELAY OUTPUT MODULE, 16PT	2/22/2008	9242411	280A -280	02/22/08
6.1.3	<u>6</u>	0.6	341.54	EA	204.92	B280: Allen-Bradley 1756-OW16I N.O. ISOLATED RELAY OUTPUT MODULE, 16PT	2/22/2008	8823002	280A -280	02/22/08
7.1.1	<u>7</u>	1.35	362.04	EA	488.75	B280: Allen-Bradley 1756-OB16I 30VDC 36PN	2/22/2008	9242605	280A -280	02/22/08
7.1.2	<u>7</u>	1.35	362.04	EA	488.75	B280: Allen-Bradley 1756-OB16I 30VDC 36PN	2/22/2008	9242411	280A -280	02/22/08
7.1.3	<u>7</u>	0.3	362.04	EA	108.61	B280: Allen-Bradley 1756-OB16I 30VDC 36PN	2/22/2008	8823002	280A -280	02/22/08

63

8.1.1	<u>8</u>	4.5	453.75	EA	2,041.88	B280: Allen-Bradley 1756-OV32E (32) PT. OUTPUT MODULE, 24VDC SINKING ELECTRONIC FUSING	2/22/2008	9242605	280A -280	02/22/08
OPEN MARKET ITEM NOT ON THE FEDERAL SUPPLY SCHEDULE										
8.1.2	<u>8</u>	4.5	453.75	EA	2,041.88	B280: Allen-Bradley 1756-OV32E (32) PT. OUTPUT MODULE, 24VDC SINKING ELECTRONIC FUSING	2/22/2008	9242411	280A -280	02/22/08
8.1.3	<u>8</u>	1	453.75	EA	453.75	B280: Allen-Bradley 1756-OV32E (32) PT. OUTPUT MODULE, 24VDC SINKING ELECTRONIC FUSING	2/22/2008	8823002	280A -280	02/22/08
9.1.1	<u>9</u>	9	256.16	EA	2,305.44	B280: Allen-Bradley 1756-IB32 10-31 VDC INPUT MODULE, 32PT.,	2/22/2008	9242605	280A -280	02/22/08
9.1.2	<u>9</u>	9	256.16	EA	2,305.44	B280: Allen-Bradley 1756-IB32 10-31 VDC INPUT MODULE, 32PT.,	2/22/2008	9242411	280A -280	02/22/08
9.1.3	<u>9</u>	2	256.16	EA	512.32	B280: Allen-Bradley 1756-IB32 10-31 VDC INPUT MODULE, 32PT.,	2/22/2008	8823002	280A -280	02/22/08
10.1.1	<u>10</u>	0.9	276.65	EA	248.99	B280: Allen-Bradley 1756-IB16I SINK/SOURCE DC INPUT	2/22/2008	9242605	280A -280	02/22/08
10.1.2	<u>10</u>	0.9	276.65	EA	248.99	B280: Allen-Bradley 1756-IB16I SINK/SOURCE DC INPUT	2/22/2008	9242411	280A -280	02/22/08
10.1.3	<u>10</u>	0.2	276.65	EA	55.33	B280: Allen-Bradley 1756-IB16I SINK/SOURCE DC INPUT	2/22/2008	8823002	280A -280	02/22/08
11.1.1	<u>11</u>	6.75	853.86	EA	5,763.56	B280: Allen-Bradley 1756-IF16 ANALOG INPUT MODULE 16 CHANNEL, CURRENT/VOLTAGE	2/22/2008	9242605	280A -280	02/22/08
11.1.2	<u>11</u>	6.75	853.86	EA	5,763.56	B280: Allen-Bradley 1756-IF16 ANALOG INPUT MODULE 16 CHANNEL, CURRENT/VOLTAGE	2/22/2008	9242411	280A -280	02/22/08

11.1.3	<u>11</u>	1.5	853.86	EA	1,280.79	B280: Allen-Bradley 1756-IF16 ANALOG INPUT MODULE 16 CHANNEL, CURRENT/VOLTAGE	2/22/2008	8823002	280A -280	02/22/08
12.1.1	<u>12</u>	22.95	12.30	EA	282.29	B280: Allen-Bradley 1756-N2 EMPTY SLOT FILLER	2/22/2008	9242605	280A -280	02/22/08
12.1.2	<u>12</u>	22.95	12.30	EA	282.29	B280: Allen-Bradley 1756-N2 EMPTY SLOT FILLER	2/22/2008	9242411	280A -280	02/22/08
12.1.3	<u>12</u>	5.1	12.30	EA	62.73	B280: Allen-Bradley 1756-N2 EMPTY SLOT FILLER	2/22/2008	8823002	280A -280	02/22/08
13.1.1	<u>13</u>	10.8	83.25	EA	899.10	B280: Allen-Bradley 1492-IFM40F 40 POINT IFM TERMINAL BLOCK	2/22/2008	9242605	280A -280	02/22/08
OPEN MARKET ITEM NOT ON THE FEDERAL SUPPLY SCHEDULE										
13.1.2	<u>13</u>	10.8	83.25	EA	899.10	B280: Allen-Bradley 1492-IFM40F 40 POINT IFM TERMINAL BLOCK	2/22/2008	9242411	280A -280	02/22/08
13.1.3	<u>13</u>	2.4	83.25	EA	199.80	B280: Allen-Bradley 1492-IFM40F 40 POINT IFM TERMINAL BLOCK	2/22/2008	8823002	280A -280	02/22/08
14.1.1	<u>14</u>	7.2	90.00	EA	648.00	B280: Allen-Bradley 1492-AIFM8-3 MODULE INTERF	2/22/2008	9242605	280A -280	02/22/08
OPEN MARKET ITEM NOT ON THE FEDERAL SUPPLY SCHEDULE										
14.1.2	<u>14</u>	7.2	90.00	EA	648.00	B280: Allen-Bradley 1492-AIFM8-3 MODULE INTERF	2/22/2008	9242411	280A -280	02/22/08
14.1.3	<u>14</u>	1.6	90.00	EA	144.00	B280: Allen-Bradley 1492-AIFM8-3 MODULE INTERF	2/22/2008	8823002	280A -280	02/22/08
15.1.1	<u>15</u>	4.95	187.50	EA	928.13	B280: Allen-Bradley 1492-CABLE025Y ASSEMBLY CA	2/22/2008	9242605	280A -280	N/A
OPEN MARKET ITEM NOT ON THE FEDERAL SUPPLY SCHEDULE										
15.1.2	<u>15</u>	4.95	187.50	EA	928.13	B280: Allen-Bradley 1492-CABLE025Y ASSEMBLY CA	2/22/2008	9242411	280A -280	N/A
15.1.3	<u>15</u>	1.1	187.50	EA	206.25	B280: Allen-Bradley 1492-CABLE025Y ASSEMBLY CA	2/22/2008	8823002	280A -280	N/A
16.1.1	<u>16</u>	7.2	195.75	EA	1,409.40	B280: Allen-Bradley 1492-ACABLE025UA	2/22/2008	9242605	280A -280	02/22/08

63

## CABLE ASSE

OPEN MARKET ITEM NOT ON THE FEDERAL SUPPLY SCHEDULE										
16.1.2	<u>16</u>	7.2	195.75	EA	1,409.40	B280: Allen-Bradley 1492-ACABLE025UA CABLE ASSE	2/22/2008	9242411	280A -280	02/22/08
16.1.3	<u>16</u>	1.6	195.75	EA	313.20	B280: Allen-Bradley 1492-ACABLE025UA CABLE ASSE	2/22/2008	8823002	280A -280	02/22/08
17.1.1	<u>17</u>	13.5	187.50	EA	2,531.25	B280: Allen-Bradley 1492-CABLE025Z ASSEMBLY CA	2/22/2008	9242605	280A -280	N/A
OPEN MARKET ITEM NOT ON THE FEDERAL SUPPLY SCHEDULE										
17.1.2	<u>17</u>	13.5	187.50	EA	2,531.25	B280: Allen-Bradley 1492-CABLE025Z ASSEMBLY CA	2/22/2008	9242411	280A -280	N/A
17.1.3	<u>17</u>	3	187.50	EA	562.50	B280: Allen-Bradley 1492-CABLE025Z ASSEMBLY CA	2/22/2008	8823002	280A -280	N/A
18.1.1	<u>18</u>	5.85	73.50	EA	429.98	B280: Allen-Bradley 1786-TPS CONTROLNET T-TAP, STRAIGHT	2/22/2008	9242605	280A -280	02/22/08
OPEN MARKET ITEM NOT ON THE FEDERAL SUPPLY SCHEDULE										
18.1.2	<u>18</u>	5.85	73.50	EA	429.98	B280: Allen-Bradley 1786-TPS CONTROLNET T-TAP, STRAIGHT	2/22/2008	9242411	280A -280	02/22/08
18.1.3	<u>18</u>	1.3	73.50	EA	95.55	B280: Allen-Bradley 1786-TPS CONTROLNET T-TAP, STRAIGHT	2/22/2008	8823002	280A -280	02/22/08
19.1.1	<u>19</u>	4.5	5.25	EA	23.63	B280: Allen-Bradley 1786-XT 75 OHM TERMINATOR FOR CONTROLNET TRUNKLINE	2/22/2008	9242605	280A -280	02/22/08
OPEN MARKET ITEM NOT ON THE FEDERAL SUPPLY SCHEDULE										
19.1.2	<u>19</u>	4.5	5.25	EA	23.63	B280: Allen-Bradley 1786-XT 75 OHM TERMINATOR FOR CONTROLNET TRUNKLINE	2/22/2008	9242411	280A -280	02/22/08
19.1.3	<u>19</u>	1	5.25	EA	5.25	B280: Allen-Bradley 1786-XT 75 OHM TERMINATOR FOR CONTROLNET TRUNKLINE	2/22/2008	8823002	280A -280	02/22/08

**Voucher Information:**

No voucher information available at this time

**Payment Information:**

No payment information available at this time

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[ [Feedback](#) | [SLAC](#) ]  
*Owner: [bis-admin](#)*

64

Kawakami, Traci

Subject: FW: MPS Cost

-----Original Message-----

From: Stephen Norum [mailto:snorum@slac.stanford.edu]  
Sent: Monday, March 03, 2008 2:55 PM  
To: Haller, Gunther  
Cc: Peng, Sheng; Olsen, Jeff  
Subject: MPS Cost

Hello,

Here's the cost breakdown of a Link Node installation

Item	Cost
Link Node	5000
Input Card	200 ea
Output Card	200 ea
Terminal Block	83 ea
Term Block Cable	12 ea
DIN Rail + Wireway	9 ea

*Handwritten calculation:*  
 \$5504  
 450  
 1282  
 -----  
 \$7236

Additional Items

Item	Cost
AC Switch	450
Terminal Server	?

Each Link Node supports:

- 1 output card (8 outputs, 4 trigger inputs, 4 trigger outputs per card)
- 6 input cards (16 inputs per card)

Link Nodes are remotely power cycled using an AC switch. The Link Node's console port must be connected to terminal server. These items can be shared with other devices and may not add to the cost of the Link Node installation.

Stephen

65

Home SLAC Directory Purchasing Property Stores Financials Tools Forms Travel Security Feedback Use

Printable Version

0000136881

Search Req

Apprc

Type: **Regular Purchase Requisition**

Requisition: **0000136881**

Date: 02/14/08

Buyer: Azevedo, John S.

Entered by: DARLENE

All Comments

Requestor: Rodriguez, Ponciano A.

Suggested Vendor: Palmer Electric Inc

Item	Qty	Unit \$	Unit	Est Cost	Description	P.O.	Charge No.	Dlvr To	PO Cos
1	0.07	427,000.000	PG	29,890.000	B280 LCLS Cable Plant Installation Phase 5 - FEE/NEH and Fiber Optic Cable Installation	73849	9242401	015 -218	27,895.0
<p>The installation includes installation of electronic racks, tray supports, cable trays, cable tray dividers), tray grounding, EMT &amp; Flex conduits, cable terminations, and a broad array of cables (51,000 ft) as indicated in the coding sheets. The equipment and materials shall be installed in the B005, B050, B940, B950, Klystron Gallery, and the existing fiber optic underground duct bank.</p>									
	0.2	427,000.000	PG	85,400.000	B280 LCLS Cable Plant Installation Phase 5 - FEE/NEH and Fiber Optic Cable Installation	73849	8813020	015 -218	79,700.0
	0.25	427,000.000	PG	106,750.000	B280 LCLS Cable Plant Installation Phase 5 - FEE/NEH and Fiber Optic Cable	73849	9242431	015 -218	99,625.0

					Installation				
	0.24	427,000.000	PG	102,480.000	B280 LCLS Cable Plant Installation Phase 5 - FEE/NEH and Fiber Optic Cable Installation	73849	9242749	015-218	95,640.0
	0.24	427,000.000	PG	102,480.000	B280 LCLS Cable Plant Installation Phase 5 - FEE/NEH and Fiber Optic Cable Installation	73849	9242229	015-218	95,640.0
Totals				\$427,000.000					\$398,503.0

**Purchase Order: 73849**

TYPE: SUB  
 PO Date: 4/10/2008  
 Buyer: TIGGER  
 Comment: IFB #: 2141

This Purchase Order has been dispatched to fund Subcontract 515-S-73849 award 2008.

- No Purchase Order issued - Buyer approval required on all invoices.

Approved Vendor: Tdn Electric

PO Line	Req Line	Qty	Unit Price	Unit	P.O. Cost	Description	Due Date	Charge No.	L
1.1.1	1	0.25	398,503.00	JOB	99,625.75	B280 LCLS Cable Plant Installation Phase 5 - Provide all labor, materials, equipment, tools and supervision necessary to perform the work in accordance with Tech Spec #: IS-380-	9/10/2008	9242431	01



						201-05-R1.			
The installation includes installation of electronic racks, tray supports, cable trays, cable tray grounding, EMT & Flex conduits, cable terminations, and a broad array of cables (51,000 f the coding sheets. The equipment and materials shall be installed in the B005, B050, B940, Gallery, and the existing fiber optic underground duct bank.									
1.1.2	<u>1</u>	0.24	398,503.00	JOB	95,640.72	B280 LCLS Cable Plant Installation Phase 5 - Provide all labor, materials, equipment, tools and supervision necessary to perform the work in accordance with Tech Spec #: IS-380-201-05-R1.	9/10/2008	9242749	01
1.1.3	<u>1</u>	0.2	398,503.00	JOB	79,700.60	B280 LCLS Cable Plant Installation Phase 5 - Provide all labor, materials, equipment, tools and supervision necessary to perform the work in accordance with Tech Spec #: IS-380-201-05-R1.	9/10/2008	8813020	01
1.1.4	<u>1</u>	0.24	398,503.00	JOB	95,640.72	B280 LCLS Cable Plant Installation Phase 5 - Provide all labor, materials, equipment, tools and supervision necessary to perform the work in accordance with Tech Spec #: IS-380-201-05-R1.	9/10/2008	9242229	01
1.1.5	<u>1</u>	0.07	398,503.00	JOB	27,895.21	B280 LCLS Cable Plant Installation Phase 5 - Provide all labor, materials, equipment, tools and supervision necessary to perform the work in accordance with Tech Spec #: IS-380-201-05-R1.	9/10/2008	9242401	01

**Voucher Information:**

Vndr	Invoice	Invoice Date	Vchr	Acctg Date	PO ID	PO Line	Description	Chrg No.	Qty	An
<u>4006</u>	7616	5/28/2008	267122	6/9/2008	73849	1.1	B280 LCLS Cable Plant Installa	9242431	0	\$22
<u>4006</u>	7616	5/28/2008	267122	6/9/2008	73849	1.1	B280 LCLS Cable Plant Installa	9242749	0	\$21
<u>4006</u>	7616	5/28/2008	267122	6/9/2008	73849	1.1	B280 LCLS Cable Plant Installa	8813020	0	\$17
<u>4006</u>	7616	5/28/2008	267122	6/9/2008	73849	1.1	B280 LCLS Cable Plant Installa	9242229	0	\$21
<u>4006</u>	7616	5/28/2008	267122	6/9/2008	73849	1.1	B280 LCLS Cable Plant Installa	9242401	0	\$6
<u>4006</u>	7630	6/24/2008	268914	7/10/2008	73849	1.1	B280 LCLS Cable Plant Installa	9242431	0	\$22
<u>4006</u>	7630	6/24/2008	268914	7/10/2008	73849	1.1	B280 LCLS Cable Plant Installa	9242749	0	\$21
<u>4006</u>	7630	6/24/2008	268914	7/10/2008	73849	1.1	B280 LCLS Cable Plant Installa	8813020	0	\$17
<u>4006</u>	7630	6/24/2008	268914	7/10/2008	73849	1.1	B280 LCLS Cable Plant Installa	9242229	0	\$21
<u>4006</u>	7630	6/24/2008	268914	7/10/2008	73849	1.1	B280 LCLS Cable Plant Installa	9242401	0	\$6
<b>Totals</b>									<b>0</b>	<b>\$179</b>

**Payment Information:**

Voucher	Vendor	Payment Method	Date	Paid Check#	Amount
267122	<u>4006</u>	System Check	6/9/2008	070513	\$89,663.18