

1.2 X-Ray Pump Probe (XPP)

WBS				process	design (man-weeks)					engineering (man weeks)					comments					WBS line #				
1	2	2	1		o	bg	p	risk-matur	est	o	bg	p	risk-matur	est		months	wks	res	hours					
				Support Table, Supports & Shielding																				
				Long Support structure floor to surface plain	prelim	2	3	5	4	2.7	1	2	4	3	2.2	assume move 0.75 M (include diff)	prelim des & analy	1.4	5.6	MEE	223	1221106		
					final	1	2	2.5	4	1.6	1	1.5	2	4	1.3				8.1	MDD	323	1221105		
					docum	2	3	5	5	2.3							tot	3.4	14			546		
				long girder configuration	prelim	1	2	2.5	3	1.9	0.5	2	2.5	4	1.5	granite surface plate to fabricated weldment	final des & analy	0.8	3.3	MEE	130	1221170		
					final	0.5	1	2	3	1.1	0	1	3	4	1.0				4.4	MDD	175	1221170		
					docum	0.5	1	3	5	0.9							tot	1.9	8			305		
				Long component to surface plate mounting	prelim	1	3	4	2	3.5	1	1.5	2	2	1.9	fixed mounting to modular rail system (similar H2)	shielding prelim	0.4	1.5	MEE	60	1221145		
					final	1	1.5	3	3	1.7	0.5	1	1.5	3	1.0				0.4	1.4	MDD	67	1221145	
					docum	0	2	3	5	1.3									0.1	0.4	MEE	17	1221165	
				shielding	prelim	1	2	3	5	1.4	1	1.5	2	3	1.5	includes RP coordination and RP analysis				0.2	0.8	MDD	31	1221166
					final	0.5	1	2	5	0.8	0	0.5	1	4	0.4									
					docum	0.5	1	2	5	0.8														

				short Support structure floor to surface plate (assume majority of design identical to 1222 long table)	prelim	0	0.5	1	5	0.4	0	0	1	5	0.1	assume move 0.75 M (include diff)	prelim des & analy	0.1	0.5	MEE	20	1221125	
					final	0	0.5	1	5	0.4	0	0	0.5	5	0.1				0.6	2.2	MDD	59	1221125
					docum	0	0.5	1	5	0.4							tot	0.7	3			109	
				short girder configuration (assume majority of design identical to 1222 long table)	prelim	1	1.5	3	5	1.2	0	0	0.5	5	0.1	granite surface plate to fabricated weldment	final des & analy	0.1	0.2	MEE	9	1221175	
					final	0	0.5	1	5	0.4	0	0	0.5	5	0.1				0.3	1.1	MDD	43	1221175
					docum	0.5	1	3	5	0.9							tot	0.3	1			51	
				short component to surface plate mounting (assume majority of design identical to 1222 long table)	prelim	0	1	1.5	5	0.6	0	0.5	5	0.3	fixed mounting to modular rail system (similar H2)								
					final	0	0.5	1	5	0.4	0	0	0.5	5	0.1								
					docum	0	2	3	5	1.3							detail dwgs generate	2.0	7.9	MDD	314	1221215	
																doc check and rel	1.2	4.7	MDD	189	1221220		

MEE 458
MDD 1221

WBS				process	design (man-weeks)					engineering (man weeks)					comments					WBS line #				
1	2	2	2		o	bg	p	risk-matur	est	o	bg	p	risk-matur	est		months	wks	res	hours					
				Short Fixed Support Table, Supports & Shielding																				
				Support structure floor to surface plain (assume majority of design identical to 1221 short table)	prelim	0	0.5	1	5	0.4	0	0	1	5	0.1	saw horse weldment	prelim des & analy	0.1	0.5	MEE	24	1222105		
					final	0	0.5	1	5	0.4	0	0	0.5	5	0.1	includes EQ				0.3	1.1	MDD	45	1222105
					docum	0	0.5	1	5	0.4							tot	0.4	2			69		
				girder configuration (assume majority of design identical to 1221 short table)	prelim	0	0.5	0.75	5	0.3	0	0	0.5	5	0.1	granite surface plate to fabricated weldment	final des & analy	0.1	0.3	MEE	13	1222150		
					final	0	0.5	0.75	5	0.3	0	0	0.5	5	0.1				0.3	1.1	MDD	42	1222150	
					docum	0	0.5	0.75	5	0.3							tot	0.3	1			55		
				component to surface plate mounting	prelim	0.2	0.5	1	4	0.5	0	0.5	0.75	4	0.4	fixed mounting (similar H3)	shielding prelim	0.2	0.7	MEE	28	1222125		
					final	0	0.5	0.75	4	0.4	0	0.2	0.5	4	0.2				0.4	1.4	MDD	67	1222125	
					docum	0.5	0.75	1	5	0.5									0.1	0.4	MEE	17	1222145	
				shielding	prelim	1	2	3	5	1.4	0	0.5	2	3	0.7	includes RP coordination and RP analysis	shield final	0.2	0.8	MDD	31	1222145		
					final	0.5	1	2	5	0.8	0	0.5	1	4	0.4				0.5	1.9	MDD	77	1222195	
					docum	0.5	1	1.5	5	0.7							detail dwgs generate	0.5	1.9	MDD	77	1222195		
																doc check and rel	0.3	1.2	MDD	46	1222200			

MEE 81
MDD 299

				XPP laser system PED																			
				optic table sizing, location -fit-integ	prelim	0.5	0.5	1	5	0.4	0	0.5	1	5	0.4	fit to adjacent components	prelim des & analy	0.4	1.8	MEE	71	1232115	
					final	0	0.5	1	5	0.4	0	0.5	1	5	0.4				0.2	0.8	MDD	31	1232115
					docum	0.5	0.75	1.5	5	0.6							tot	0.6	3			103	
				optic table support	prelim	0	0.5	1	5	0.4	1	2	3	5	1.4	includes EQ	final des & analy	0.3	1.3	MEE	51	1232125	
					final	0	0.5	1	5	0.4	0.5	1	2	4	0.9				0.2	0.7	MDD	29	1232125
					docum	0	0	1	5	0.1							tot	0.5	2			80	
				laser table complete start to finish (weeks)					2.3								detail dwgs generate	0.2	0.8	MDD	30	1232200	
				laser table support complete start to finish (months)					0.6								doc check and rel	0.1	0.5	MDD	18	1232205	

MEE 122
MDD 108

WBS	process	design (man-weeks)					engineering (man weeks)					comments
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WBS	process	design (man-hours)					engineering (man hours)					comments
1 2 5 1	XPP Diffractometer System	o	bg	p	risk-matur	est	o	bg	p	risk-matur	est	

months wks res hours

	Huber main stack assembly model / verify / check (assumes Huber provides a turn-key system, some eng-des time to support Huber effort)	prelim	16	32	60	3	34.4	8	16	40	3	19.2		prelim des & analy	0.1	0.5	MEE	19.2	
		final	8	16	40	4	16.0	4	8	40	3	13.6			0.2	0.9	MDD	34.4	
		docum	8	16	32	5	12.6										MD	13	
			2.5																
														final des & analy	0.1	0.3	MEE	13.6	
															0.1	0.4	MDD	15.0	
														documentation	0.1	0.3	MD	13	

	Diffractometer cable routing (assumes Huber provides all cable routing layout , strain relief, etc)	prelim	8	24	40	2	30.0	0	8	20	3	8.8		prelim des & analy	0.1	0.2	MEE	8.8	
		final	8	16	20	3	15.2	0	4	8	4	3.3			0.2	0.8	MDD	30.0	
		docum	0	0	24	5	3.4										MD	9	
			0.7																
														final des & analy	0.0	0.1	MEE	3.3	
															0.1	0.4	MDD	15.2	
														documentation	0.0	0.1	MD	3	

TITLE	WBS activity ID	res	hours
Prelim Design & Analysis - Sample Tilt Platform	XPP1251125	MEE	28
Prelim Design & Analysis - Sample Tilt Platform	XPP1251125	MDD	64
Finalize Design - Sample Tilt Platform	XPP1251155	MEE	17
Finalize Design - Sample Tilt Platform	XPP1251155	MDD	31
Specs & Drawings - Sample Tilt Platform	XPP1251190	MD	16
total:			157 hours
			1.0 months

	diffractometer kappa config (assumes Huber provides turn-key system, including all mounting hardware)	prelim	16	32	40	3	30.4	8	16	24	3	16.0		prelim des & analy	0.1	0.4	MEE	16.0	
		final	8	16	20	4	12.7	4	8	20	4	8.0			0.2	0.8	MDD	30.4	
		docum	0	8	24	5	6.9										MD	7	
			1.4																
														final des & analy	0.1	0.2	MEE	8.0	
															0.1	0.3	MDD	12.7	
														documentation	0.0	0.2	MD	7	

TITLE	WBS activity ID	res	hours
Prelim Design & Analysis - Sample Kappa Platform	XPP1251130	MEE	16
Prelim Design & Analysis - Sample Kappa Platform	XPP1251130	MDD	30
Finalize Design - Sample Kappa Platform	XPP1251160	MEE	8
Finalize Design - Sample Kappa Platform	XPP1251160	MDD	13
Specs & Drawings - Sample Kappa Platform	XPP1251195	MD	7
total:			74 hours
			0.5 months

	diffractometer support strength (includes interface at floor, alignment design and interface to Huber slide)	prelim	32	36	80	2	55.0	8	24	80	2	40.0		prelim des & analy	0.3	1.0	MEE	40.0	
		final	16	32	40	3	30.4	5	16	40	3	18.6			0.3	1.4	MDD	86.0	
		docum	20	56	60	5	35.4										MD	35	
			7.1																
														final des & analy	0.1	0.5	MEE	18.6	
															0.2	0.8	MDD	30.4	
														documentation	0.2	0.9	MD	35	

	diffractometer / beamline stay clears (includes all volumes required to complete design of XPP)	prelim	8	40	60	3	37.6	8	24	32	4	18.7		prelim des & analy	0.1	0.5	MEE	18.7	
		final	4	8	20	4	8.0	0	8	16	3	5.7			0.2	0.9	MDD	37.8	
		docum	24	24	48	5	20.6										MD	21	
			4.1																
														final des & analy	0.0	0.1	MEE	5.7	
															0.1	0.2	MDD	8.0	
														documentation	0.1	0.5	MD	21	

	beam stop (includes support structure, 600 mm translation, stop head)	prelim	12	40	48	4	30.0	4	16	40	5	13.1		prelim des & analy	0.1	0.3	MEE	13.1	
		final	4	16	16	5	9.7	0	4	10	5	3.1			0.2	0.8	MDD	30.0	
		docum	0	32	40	5	19.4										MD	19	
			2.4																
														final des & analy	0.0	0.1	MEE	3.1	
															0.1	0.2	MDD	9.7	
														documentation	0.1	0.5	MD	19	

TITLE	WBS activity ID	res	hours
Prelim Den & Analysis-Diff Beamline Translation	XPP1251135	MEE	72
Prelim Den & Analysis-Diff Beamline Translation	XPP1251135	MDD	123
Finalize Design - Diff Beamline Translation	XPP1251165	MEE	27
Finalize Design - Diff Beamline Translation	XPP1251165	MDD	48
Specs & Drawings - Diff Beamline Translation	XPP1251200	MD	75
total:			345 hours
			2.2 months

WBS	process	design (man-weeks)				engineering (man weeks)				comments
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WBS	process	24	40	60	2	51.0	8	24	40	2	30.0								
diffractionmeter alignment fixtures (includes all fixtures required to align diff center(s)-tilt & kappa, samples S-O-C determination, etc) total 4 fixtures	prelim												prelim des & analy	0.2	0.8	MEE	30.0		
	final	16	16	20	3	16.8	4	8	40	3	13.6			0.3	1.3	MDD	64.0		
	docum	32	40	60	5	33.1													
		4.1																	
													final des & analy	0.1	0.3	MEE	13.6		
														0.1	0.4	MDD	16.8		
													documentation	0.2	0.6	MD	33		

WBS	process	16	24	40	3	25.6	8	16	40	3	19.2							
sample heads (assumes purchased entirely from Huber, May need 90 deg circle mount des)	prelim												prelim des & analy	0.1	0.5	MEE	19.2	
	final	8	20	20	4	14.7	0	8	20	3	8.8			0.2	0.6	MDD	25.6	
	docum	12	16	60	5	17.1												
		2.1																
													final des & analy	0.1	0.2	MEE	8.8	
														0.1	0.4	MDD	14.7	
													documentation	0.1	0.4	MD	17	

TITLE	WBS activity ID	res	hours	
Prelim Design & Analysis - diffractometer other parts	XPP1251137	MEE	49	
Prelim Design & Analysis - diffractometer other parts	XPP1251137	MDD	77	
Finalize Design - diffractometer other parts	XPP1251167	MEE	22	
Finalize Design - diffractometer other parts	XPP1251167	MDD	31	
Specs & Drawings - diffractometer other parts	XPP1251205	MD	50	
				total:
				230 hours
				1.4 months

Assembly Drawings - Sample Diffractometer	XPP1251210	MD	30
Check and Release Diff Drawings	XPP1251215	MD	83

diffractionmeter system complete start to finish (hours)	MEE	240
	MDD	417
	MD	271
		929 hours
		5.8 months

WBS	process	design (man-weeks)					engineering (man weeks)					comments
		design (man-hours)					engineering (man hours)					
		o	bg	p	risk-matur	est	o	bg	p	risk-matur	est	

XPP Diffractometer System													months	wks	res	hours	
	detector motion support structure (assumes mounting from structure above sample connecting to walls/floor)	prelim	24	80	120	1	128.0	16	60	160	1	118.7	prelim des & analy	0.7	3.0	MEE	118.7
		final	8	40	40	1	56.0	4	20	80	1	48.0		0.8	3.2	MDD	128.0
		docum	8	60	80	5	38.3									MD	38
						7.7							final des & analy	0.3	1.2	MEE	48.0
														0.4	1.4	MDD	56.0
													documentation	0.2	1.0	MD	38

	detector motion technical specification (includes all elements related to ESD plus issues of testing, acceptance, controls, shipping, etc)	prelim	20	40	60	4	33.3	20	60	80	3	56.0	prelim des & analy	0.4	1.4	MEE	56.0
		final	8	0	20	4	4.7	20	10	40	3	18.0		0.2	0.8	MDD	33.3
		docum	0	8	16	5	5.7									MD	18.0
						1.1							final des & analy	0.1	0.5	MEE	18.0
														0.0	0.1	MDD	4.7
													documentation	0.0	0.1	MD	5

TITLE	WBS activity ID	res	hours
Prelim Design & Analysis - Detector Mover	XPP1251240	MEE	175
Prelim Design & Analysis - Detector Mover	XPP1251240	MDD	161
Finalize Design - Detector Mover	XPP1251260	MEE	86
Finalize Design - Detector Mover	XPP1251260	MDD	61
Specs & Drawings - Detector Mover	XPP1251285	MD	44

total:
507 hours
3.2 months

	detector mounting (mounting of detector, cable strain relief and routing, mounting of alignment fixture capability)	prelim	8	32	60	3	32.8	0	16	40	3	17.6	prelim des & analy	0.1	0.4	MEE	17.6
		final	8	16	20	4	12.7	4	4	20	4	6.0		0.2	0.8	MDD	32.8
		docum	8	16	40	5	13.7									MD	6.0
						2.7							final des & analy	0.0	0.2	MEE	6.0
														0.1	0.3	MDD	12.7
													documentation	0.1	0.3	MD	14

	detector motion alignment fixtures (develop test methodology and all fixtures hardware to complete)	prelim	16	24	60	1	49.3	4	16	60	1	37.3	prelim des & analy	0.2	0.9	MEE	37.3
		final	8	16	20	2	19.0	0	8	30	1	18.0		0.3	1.2	MDD	49.3
		docum	16	24	60	5	21.1									MD	18.0
						4.2							final des & analy	0.1	0.5	MEE	18.0
														0.1	0.5	MDD	19.0
													documentation	0.1	0.5	MD	21

	detector motion safety systems (includes developing plan, hardware and developing coordinating approvals process)	prelim	0	20	40	3	20.0	24	40	80	2	56.0	prelim des & analy	0.4	1.4	MEE	56.0
		final	0	8	20	5	6.3	8	20	40	4	18.0		0.1	0.5	MDD	20.0
		docum	0	40	40	5	22.9									MD	18.0
						4.6							final des & analy	0.1	0.5	MEE	18.0
														0.0	0.2	MDD	6.3
													documentation	0.1	0.5	MD	23

TITLE	WBS activity ID	res	hours
Prelim Design & Analysis - Rem Detector Move Aux	XPP1251242	MEE	111
Prelim Design & Analysis - Rem Detector Move Aux	XPP1251242	MDD	102
Finalize Design - Rem Detector Move Aux Comp	XPP1251262	MEE	42
Finalize Design - Rem Detector Move Aux Comp	XPP1251262	MDD	38
Detail Drawings - Rem Detector Move Aux Comp	XPP1251290	MD	58

total:
351 hours
2.2 months

Assembly Drawings - Detector Mover	XPP1251300	MD	20.0
Check and Release Detector Mover Drawings	XPP1251305	MD	63.6

diffractometer system complete start to finish (hours)
MEE 394
MDD 362
MD 185
941 hours
5.9 months

1.2.01 XPP Sys Integration & Design

NO BOE
FOR THIS
WBS:

1.2.02 XPP X-ray Optics & Support Table

NO BOE
FOR THIS
WBS:

1.2.02.01 Support Table, Support & Shielding

upbeam of the diffractometer and for the small raft downbeam of same. Rigging is not included.

WBS/ Activity ID	DESCRIPTION	Part Number	Material	Man Months	Resource	Hours	QTY	Unit Cost [\$]	Direct Total	Source/Status of Estimate	Weight each (lb)	Weight total (lb)	Vendor	Note 1	Note 2
PED															
Sub Total						1680			\$109.40K						
Long Table Support Design															
XPP 1221105	Preliminary				Engineer	223			\$12.81K	langton					
XPP 1221105	Preliminary				Designer	323			\$21.96K	langton					
tot						546			\$34.78K						
XPP 1221170	Final				Engineer	130			\$7.47K	langton					
XPP 1221170	Final				Designer	175			\$11.90K	langton					
tot						305			\$19.37K						
Shielding Design															
XPP 1221145	Preliminary				Engineer	60			\$3.45K	langton					
XPP 1221145	Preliminary				Designer	57			\$3.88K	langton					
tot						117			\$7.32K						
XPP 1221165	Final				Engineer	17			\$0.98K	langton					
XPP 1221165	Final				Designer	31			\$2.11K	langton					
tot						48			\$3.08K						
Short Table Support Design															
XPP 1221125	Preliminary				Engineer	20			\$1.15K	langton					
XPP 1221125	Preliminary				Designer	89			\$6.05K	langton					
tot						109			\$7.20K						
XPP 1221175	Final				Engineer	9			\$0.52K	langton					
XPP 1221175	Final				Designer	43			\$2.92K	langton					
tot						52			\$3.44K						
Documentation															
XPP 1221215	Detail (63 drawings)				Designer	314			\$21.35K	langton					
XPP 1221220	Checking				Designer	189			\$12.85K	langton					
MSL															
Sub Total									\$73.20K						
XPP 1221510	Procurements								\$52.06K						
XPP 1221525	Fab/Assy					236			\$21.15K						
Table: Optics & Diagnostics Raft															
(XPP 1221510)	Procurements								\$38.44K						
	48" x 160" x 24" Grade AA 0-Ledge Sierra Gray Granite Surface Plate						1	\$ 23,000.00	\$23.00K	JDef calculation			Standrige	107ft*3 @ \$215/ft*3	
	Delivery Charge						1	\$ 3,500.00	\$3.50K	Quotation			Edmund	Standridge Quote	
	Welded Steel Frame						1	\$ 2,000.00	\$2.00K	discussion w/ Kurita					
	Leveling Jacks						1	\$ 1,500.00	\$1.50K	Quotation					
	Al Jig Plate						1	\$ 600.00	\$0.60K	discussion w/ Kurita					
	Grout Plate						6	\$ 50.00	\$0.30K	discussion w/ Kurita					
	Rails						4	\$ 709.00	\$2.84K	Cymatix quote for BC2			Cymatix/T	Non-standard length rails.	
	Carriages						8	\$ 171.00	\$1.37K	Cymatix quote for BC2			Cymatix/T	Standard carriages.	
	Actuator w/ motor						1	\$ 3,335.00	\$3.34K	Cymatix quote for BC2			Cymatix		
(XPP 1221525)	Labor								\$7.53K						
	Machine Jig Plate				Mech Fab	20			\$1.79K	discussion w/ Kurita					
	Assembly				Mech Fab	40			\$3.58K	discussion w/ Kurita					
	Drill Holes in Granite				Mech Fab	16			\$1.43K						
	Install Inserts into Granite				Mech Fab	8			\$0.72K						
(XPP 1221510)	Table: Small Raft (downbeam of D-O-M)								\$11.74K						
(XPP 1221510)	Procurements														
	18" x 18" x 40" Grade AA 0-Ledge Black Granite Surface Plate						1	\$ 2,500.00	\$2.50K	Quotation			Standrige		
	Delivery Charge						1	\$ 500.00	\$0.50K	discussion w/ Kurita					
	Welded Steel Frame						1	\$ 2,000.00	\$2.00K	discussion w/ Kurita					
	Al Jig Plate						1	\$ 600.00	\$0.60K	discussion w/ Kurita					
	Support Plate						4	\$ 50.00	\$0.20K	discussion w/ Kurita					
	Rails						2	\$ 709.00	\$1.42K	Cymatix quote for BC2			Cymatix/Thomson		
	Carriages						4	\$ 171.00	\$0.68K	Cymatix quote for BC2			Cymatix/Thomson		
	Actuator w/ motor						1	\$ 3,335.00	\$3.34K	Cymatix quote for BC2			Cymatix		
	Hardware (bolts, Hittis)						1	\$ 500.00	\$0.50K	discussion w/ Kurita					
(XPP 1221525)	Labor								\$2.87K						
	Assembly				Mech Fab	20			\$1.79K	discussion w/ Kurita					
	Machine Holes in Granite				Mech Fab	8			\$0.72K	discussion w/ Kurita					
	Install Inserts into Granite				Mech Fab	4			\$0.36K	discussion w/ Kurita					
(XPP 1221510)	Shielding								\$1.88K						
(XPP 1221510)	Procurements														
	18" X 12" X .5" Steel Plate						4	\$ 100.00	\$0.40K	discussion w/ Kurita					
	12" X 12" X .5" Steel Plate						4	\$ 100.00	\$0.40K	discussion w/ Kurita					
	Hole Shields						8	\$ 50.00	\$0.40K	discussion w/ Kurita					
	Screw Plates						8	\$ 20.00	\$0.16K	discussion w/ Kurita					
	Lifting Lugs						8	\$ 10.00	\$0.08K	discussion w/ Kurita					
	Misc Hardware						2	\$ 200.00	\$0.40K	discussion w/ Kurita					
	PPS Lock						2	\$ 20.00	\$0.04K	discussion w/ Kurita					
(XPP 1221525)	Labor								\$10.75K						
	Machine Plates				Mech Fab	40			\$3.58K	discussion w/ Kurita					
	Assembly/Welding				Mech Fab	80			\$7.17K	discussion w/ Kurita					

QUOTATION



"Committed to Excellence"

9437 Santa Fe Springs Road • Santa Fe Springs, CA 90670
562 / 946-6334 • Fax 562 / 941-3804
granite@standridgegranite.com

Quote No. 012908-ST
Date January 29, 2008
Quoted by Tony DeLeon
FOB SFS, CA
Terms To be determined
Delivery ARO* See below
Granite See below
Weight See below

Stanford Linear Accelerator Center

ESTIMATED PRICES

ATTN: Jim Defever
PHONE: 650-926-8531
EMAIL/FAX:

Quantity	Description	Net US\$
One	We are pleased to quote the following as you requested: 18" x 18" x 40" Grade AA 0-Ledge Black Granite Surface Plate Estimated weight: 1,388 lbs/ea	\$2,500.00 Ea
One	Steel Frame for the above Estimated weight: 370 lbs/ea Delivery: 4 weeks	\$650.00 Ea
	Estimated freight rate to Menlo Park, CA for the above	\$500.00
One	36" x 160" x 20" Grade AA 0-Ledge Sierra Gray Granite Surface Plate Estimated weight: 11,334 lbs/ea	\$16,000.00 Ea
One Lot	Consisting of: (3) Pedestals with leveling jacks Estimated weight: 560lbs/lt Delivery: 14 to 16 weeks	\$1,500.00 Lt
	Estimated freight rate on a flatbed truck to Menlo Park, CA for the above	\$2,500.00 Ea
One	36" x 200" x 40" Grade AA 0-Ledge Sierra Gray Granite Surface Plate	\$36,000.00 Ea
One Lot	Consisting of: (3) Pedestals with jacks Estimated weight: 560lbs/lt Delivery: 14 to 16 weeks	\$1,500.00 Lt
	Estimated freight rate on a flatbed truck to Menlo Park, CA for the above	\$3,500.00
	If we can be of further assistance, please contact us.	

PREMIUM GRANITE CLEANER penetrates the granite surface to loosen dirt, grime, and residues. It leaves the surface clean, which cuts down wear on precision surfaces. Sold in pint squeeze bottles and 1 gallon cans.

DELIVERY TIME CONTINGENT ON ORDER CONFIRMATION AND RECEIPT OF DOWN PAYMENT, IF APPLICABLE.

UNLESS STATED OTHERWISE

PRICES VALID FOR SHIPMENTS WITHIN NORTH AMERICA • PRODUCT QUOTES VALID FOR 30 DAYS • FREIGHT QUOTES SUBJECT TO CHANGE

*DELIVERY TIME EXCLUDES HOLIDAYS & TRANSIT TIME

BC2 - - RAIL/CARRIAGE QUOTE - - -

Cymatix, Inc.

1160 Industrial Ave. Suite J, Petaluma, CA 94952
Tel: 800-913-0555 Fax: 707-773-0466

QUOTATION NUMBER: Q_JPB_052407

Company: Stanford Linear Accelerator Center Date: May 24, 2007
Address: 2575 Sand Hill Road
Bldg 280B, rm 253
Menlo Park, CA 94025
USA
Contact: Steve Score Phone: (650)926-4951
Submitted By: John Bundschuh Fax:

Item	Quantity	Part Number and Description	Price/Unit	Lead Time
A	1-9	CYM3647, IDC actuator, EC3-X-50-16B-600-MT4- FS2-IDR61C with Superior Step motor, KML091S02E mounted, 5:1 spur gear reduction, 16 mm/rev ball screw, 600 mm travel, trunion mount, spherical end	\$3,355	4-5 weeks
B	1-9	KML092S09E, Superior Step motor, 610 oz-in holding torque, 4.6A, rear shaft	\$290	3-4 weeks
C	1-9	521H25AD-1560, Thomson linear ball rail, 25 mm wide, high grade, 1560 mm long, Duralloy coated	\$709	2 weeks
D	1-9 10-24	511H25A1D, Thomson ball carriage, 25 mm rail width, high grade, standard carriage, Duralloy, thin dense chrome coated	\$171 \$165	2 weeks
E	1-9	PSN-2, Hall sensor travel limit NPN, normally closed	\$70	2 weeks

Please fax purchase order to:

Cymatix, Inc.
1160 Industrial Avenue
Suite J
Petaluma, CA 94952
Phone 707-773-1193
Fax 707-773-0466

This quotation is valid for 30 days from the date of the quote.

From: Humad Asghar
To: Delor, James;
cc: Corey Foster;
Subject: RE: Rails & Prime Mover Quote
Date: Friday, February 08, 2008 1:46:26 PM
Attachments: E3230-BSS%20COMPACT%20FA%20SERIES.pdf

Hi Jim

I have revisited the sizing information. I do apologize for I did perform the sizing for 2500lbf instead of 25000.

1. Rails and Ball Screw for 25000lbf, assuming a 2000mm distance between each block on rail.

Qty	P/N	Description	Price (per part)
2	SGL35F2-3000P/W2	NB 3000mm travel, precision slide guide 32KN normal load capability, w/ 2 blocks	1238.44
1	PSS2505N1D1233	NSK, 1 meter travel ball screw with 25mm dia. and 5mm lead.	1420.33

2. Rails and Ball Screw for 1000lbf load, assuming about a 900mm distance between each block on rail.

Qty	P/N	Description	Price (per part)
2	SEB15AUU2-1900P/W2	NB 1900mm travel, precision slide guide 4.74KN normal load capability, w/ 2 blocks	502.86
1	PSS1510N1D1179	NSK, 1 meter travel ball screw with 15mm dia. and 10mm lead	1180.16

Please also find the attached .pdf giving you details about the ball screws along with information about the end support units. There are a few options for the end supports.

Do feel free to contact me if you have any questions.

Regards

Humad Asghar
Application Engineer
(408) 328-2629

WTM Division of
Valin Corporation
555 E. California Ave
Sunnyvale, CA 94086
Phone (408) 730-9850
Fax (408) 730-1363

From: Delor, James [mailto:delorj@slac.stanford.edu]

Sent: Friday, February 08, 2008 10:31 AM

To: Corey Foster

Subject: RE: Rails & Prime Mover Quote

Corey,

I don't see the load capacity in the range of 25,000 lbf for the rail (ball rail?). For 4 ball carriages that winds up being on the order of 28KN apiece. the needed travel distance is only about 1000mm.

Thanks.

Jim DeLor

(650)926-3136 (x3136), MS 41

DelorJ@slac.stanford.edu

From: Corey Foster [mailto:cfoster@valin.com]

Sent: Thursday, February 07, 2008 9:47 PM

To: Delor, James

Subject: Rails & Prime Mover Quote

Jim,

My Applications Engineer hopped right to it and came up with this for us...

PSS2505N1D1233

NSK, 1 meter travel ball screw with 25mm dia. and 5mm lead.

\$1420.33 (would need a couple of ballscrew mounts on the ends to hold it so had some money for that, but I'm not sure how much.)

SEB15AUU2-1900P/W2

NB 1900mm travel, precision slide guide 4.74KN normal load capability, w/ 2 blocks

\$352 (multiply by 2 for one system)

SGL20F2-3000P/W2

NB 3000mm travel precision slide guide 11.91KN normal load capability, w/ 2 blocks

\$561 (multiply by 2 for one system)

Linear motor coil and track (no rails or encoder)

The R16-1 is \$1,995.00

Magnet track 240mm long is \$480 (multiply by 4.25 to get the full travel length)

NSK guides are about twice as much in price.

I have a couple different kinds of linear encoders to choose from. They can go

anywhere from \$300 to \$2000 or so depending upon the requirements. I'd probably budget \$1500.

Let me know if you have any more last minute questions that I can try to help you with, Jim.

Corey Foster

Territory Manager

(650) 996-2456

cfoster@westerntechnology.com

Western Technology

A subsidiary of Valin Corporation

555 E. California Ave

Sunnyvale, CA 94086

(408) 465-2600

<http://www.westerntechnology.com>

<http://www.valin.com>

Kurita, Nadine

From: Defever, Jim
Sent: Tuesday, February 12, 2008 9:19 AM
To: Kurita, Nadine
Cc: Langton, J. Brian
Subject: XPP granite block rigging estimate

The estimate for moving a 28kip granite block into the NEH from the FEH.

From: Ken Carrion [mailto:kwcarrion@rigginginternational.com]
Sent: Tuesday, February 12, 2008 7:59 AM
To: Defever, Jim
Subject: RE: SLAC estimate

Dear Jim,

Sorry about the delay in getting a budgetary price to you but here it is. The cost will be approximately \$20,000.00 to move and set the granite surface plate. However, it could be less depending on access and jobsite conditions at the time of the move. There is a strong probability that we will have to insert some sort lifting inserts at various locations throughout the roof along the travel route in order to make the sharp turns. As the date for installation draws closer I should be able to firm up this estimate with better look at the site conditions. If you have further questions or need clarifications please contact anytime and again thank-you for your patience.

Sincerely,

Ken Carrion
District Superintendent
Cell: 510-504-3119
Office: 510-865-2400 ext.180

From: Defever, Jim [mailto:defever@slac.stanford.edu]
Sent: Monday, February 11, 2008 9:08 AM
To: kwcarrion@rigginginternational.com
Subject: SLAC estimate

Hello Ken,

I'm sorry to keep bugging you, but have you had time to put together an estimate for moving the granite surface plate for me?

Thanks,

Jim Defever
Stanford Linear Accelerator Center
2575 Sand Hill Road MS 43A
Menlo Park, CA 94025
650-926-8531

1.2.02.02 Optics Support Table & Support

LUSI XPP SUPPORT TABLE, SUPPORTS & SHIELDING
WBS 1.2.2.2

Estimator Langton/Defever

in Hutch 2. Rigging is not included.

WBS/ Activity ID	DESCRIPTION	Part Number	Material	Man Months	Resource	Hours	QTY	Unit Cost (\$)	Direct Total	Source/Status of Estimate	Weight each (lb)	Weight total (lb)	Vendor	Note 1	Note 2
	PED														
	Total					380			\$24.97K						
	Short Table Support Design														
XPP 1222105	Preliminary				Engineer	24			\$1.38K	langton					
XPP 1222105	Preliminary				Designer	45			\$3.06K	langton					
	tot					69			\$4.44K						
XPP 1222150	Final				Engineer	13			\$0.75K	langton					
XPP 1222150	Final				Designer	42			\$2.86K	langton					
	tot					55			\$3.60K						
	Shielding Design														
XPP 1222125	Preliminary				Engineer	28			\$1.61K	langton					
XPP 1222125	Preliminary				Designer	57			\$3.88K	langton					
	tot					85			\$5.48K						
XPP 1222145	Final				Engineer	17			\$0.98K	langton					
XPP 1222145	Final				Designer	31			\$2.11K	langton					
	tot					48			\$3.08K						
	Documentation														
XPP 1222195	Detail				Designer	77			\$5.24K	langton					
XPP 1222200	Checking				Designer	46			\$3.13K	langton					
	MSL														
	Total								\$21.22K						
1222515	Procurements								\$7.24K			\$6.00K			
XPP 1222537	Fab/Assy					156			\$13.98K						
	Table														
(XPP 1222515)	Procurements								\$6.30K						
	18" x 18" x 40" Grade AA 0-Ledge Black Granite Surface Plate						1	\$ 2,500.00	\$2.50K	Quotation			Standridge		
	Delivery Charge						1	\$ 500.00	\$0.50K	Quotation			Standridge Quote		
	Welded Steel Frame						1	\$ 2,000.00	\$2.00K	discussion w/ Kurita					
	Al Jig Plate						1	\$ 600.00	\$0.60K	discussion w/ Kurita					
	Support Plate						4	\$ 50.00	\$0.20K	discussion w/ Kurita					
	Hardware (bolts, Hiltis)						1	\$ 500.00	\$0.50K	discussion w/ Kurita					
(XPP 1222537)	Labor								\$6.81K						
	Machine Jig Plate				Mech Fab	20			\$1.79K	discussion w/ Kurita					
	Assembly				Mech Fab	40			\$3.58K	discussion w/ Kurita					
	Machine Holes in Granite				Mech Fab	8			\$0.72K	discussion w/ Kurita					
	Install Inserts into Granite				Mech Fab	8			\$0.72K	discussion w/ Kurita					
(XPP 1222515)	Shielding														
	Procurements								\$0.94K						
	18" X 12" X .5" Steel Plate						2	\$ 100.00	\$0.20K	discussion w/ Kurita					
	12" X 12" X .5" Steel Plate						2	\$ 100.00	\$0.20K	discussion w/ Kurita					
	Hole Shields						4	\$ 50.00	\$0.20K	discussion w/ Kurita					
	Screw Plates						4	\$ 20.00	\$0.08K	discussion w/ Kurita					
	Lifting Lugs						4	\$ 10.00	\$0.04K	discussion w/ Kurita					
	Misc Hardware						1	\$ 200.00	\$0.20K	discussion w/ Kurita					
	PPS Lock						1	\$ 20.00	\$0.02K	discussion w/ Kurita					
(XPP 1222537)	Labor								\$7.17K						
	Machine Plates				Mech Fab	40			\$3.58K	discussion w/ Kurita					
	Assembly/Welding				Mech Fab	40			\$3.58K	discussion w/ Kurita					

QUOTATION



"Committed to Excellence"

9437 Santa Fe Springs Road • Santa Fe Springs, CA 90670
 562 / 946-6334 • Fax 562 / 941-3804
 granite@standridgegranite.com

Quote No. 012908-ST
Date January 29, 2008
Quoted by Tony DeLeon
FOB SFS, CA
Terms To be determined
Delivery ARO* See below
Granite See below
Weight See below

Stanford Linear Accelerator Center

ESTIMATED PRICES

ATTN: Jim Defever
PHONE: 650-926-8531
EMAIL/FAX:

Quantity	Description	Net US\$
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UNLESS STATED OTHERWISE

PRICES VALID FOR SHIPMENTS WITHIN NORTH AMERICA • PRODUCT QUOTES VALID FOR 30 DAYS • FREIGHT QUOTES SUBJECT TO CHANGE

*DELIVERY TIME EXCLUDES HOLIDAYS & TRANSIT TIME

Kurita, Nadine

From: Defever, Jim
Sent: Tuesday, February 12, 2008 9:19 AM
To: Kurita, Nadine
Cc: Langton, J. Brian
Subject: XPP granite block rigging estimate

The estimate for moving a 28kip granite block into the NEH from the FEH.

From: Ken Carrion [mailto:kwcarrion@rigginginternational.com]
Sent: Tuesday, February 12, 2008 7:59 AM
To: Defever, Jim
Subject: RE: SLAC estimate

Dear Jim,

Sorry about the delay in getting a budgetary price to you but here it is. The cost will be approximately \$20,000.00 to move and set the granite surface plate. However, it could be less depending on access and jobsite conditions at the time of the move. There is a strong probability that we will have to insert some sort lifting inserts at various locations throughout the roof along the travel route in order to make the sharp turns. As the date for installation draws closer I should be able to firm up this estimate with better look at the site conditions. If you have further questions or need clarifications please contact anytime and again thank-you for your patience.

Sincerely,

Ken Carrion
District Superintendent
Cell: 510-504-3119
Office: 510-865-2400 ext.180

From: Defever, Jim [mailto:defever@slac.stanford.edu]
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To: kwcarrion@rigginginternational.com
Subject: SLAC estimate

Hello Ken,

I'm sorry to keep bugging you, but have you had time to put together an estimate for moving the granite surface plate for me?

Thanks,

Jim Defever
Stanford Linear Accelerator Center
2575 Sand Hill Road MS 43A
Menlo Park, CA 94025
650-926-8531

1.2.02.03 X-ray Emission Spectrometer

1.2.03 XPP Laser

NO BOE
FOR THIS
WBS:

1.2.03.01 Ti: Sapphire Laser

1.2.03.01.01 Ti: Sapphire Oscillator Sys & Pump

ITEMS FOR
THIS WBS
DESCOPED:

1.2.03.01.02 T1: Sapphire Amplifier(s) Sys/Pumps

LUSI "XPP amp system / pumps"
WBS 1.2.3.1.2

Estimator Fritz

Description: Power amplifier for XPP laser system

ACTIVITY ID	DESCRIPTION	Part Number	Material	Man Months	Resource	Hours	QTY	Unit Cost [\$]	Direct Total	Source/Status of Estimate	Weight each (lb)	Weight total (lb)	Vendor	Note 1	Note 2
	MSL														
XPP 03300	External Pockels Cell Laser Metrics	5046					1	\$ 9,500.00	\$9.50K				Laser Metrics		
XPP 03447	External Compressor								\$23.78K						
	Gratings	PC 1400					1	\$ 5,893.00	\$5.89K	Vendor quote			Spectragon		
	Rotation Stage	URS150BPP					1	\$ 3,415.00	\$3.42K	Catalog			Newport		
	Translation Stage	UTS150PP					2	\$ 3,400.00	\$6.80K	Catalog			Newport		
	Tip/Tilt Platform	37					1	\$ 677.00	\$0.68K	Catalog			Newport		
	Grating Holder						1	\$ 500.00	\$0.50K						
	Breadboard	RG-22-2					1	\$ 992.00	\$0.99K	Catalog			Newport		
	Retroreflector						2	\$ 2,000.00	\$4.00K						
	Retro Holder						2	\$ 500.00	\$1.00K						
	Box						1	\$ 500.00	\$0.50K						
XPP 03200	Ti:Sapphire Power Amplifier								\$38.16K						
	Laser Metrics	5046					1	\$ 9,500.00	\$9.50K	Catalog			Laser Metrics		
	Breadboard	RG-24-4-ML					1	\$ 2,222.00	\$2.22K	Catalog			Newport		
	532 nm Telescope	HB-4XAR.14					1	\$ 2,236.00	\$2.24K	Catalog			Newport		
	800 nm Telescope	HB-4XAR.16					1	\$ 2,288.00	\$2.29K	Catalog			Newport		
	Telescop Holders	VB-2					2	\$ 86.00	\$0.17K	Catalog			Newport		
	Mirror Mounts	U200-A2K-NL					6	\$ 146.00	\$0.88K	Catalog			Newport		
	Mirrors - Ultrafast	20B20UF.25					2	\$ 399.00	\$0.80K	Catalog			Newport		
	Mirrors - 532 nm	20QM20HM.35					2	\$ 345.00	\$0.69K	Catalog			Newport		
	Dichroic Mirror						1	\$ 600.00	\$0.60K	Catalog			Newport		
	Optical Isolator	ISO-05-800-BB-					1	\$ 2,999.00	\$3.00K	Catalog			Newport		
	Polarizer	10FC16PB.5					1	\$ 375.00	\$0.38K	Catalog			Newport		
	Neslab	3941-30-M1S					1	\$ 2,650.00	\$2.65K	Vendor E-mail			Spectra-Physics		
	Ti:Sapphire Xtal						1	\$ 5,000.00	\$5.00K	Vendor E-mail			Spectra-Physics		
	Xtal Mount						1	\$ 2,000.00	\$2.00K	Vendor E-mail			Spectra-Physics		
	Various Optomechanics						1	\$ 2,000.00	\$2.00K	Vendor E-mail			Spectra-Physics		
	Box						1	\$ 750.00	\$0.75K	Vendor E-mail			Spectra-Physics		
	Spectra Physics Chiller	EMP Chiller 110- VWV					1	\$ 3,000.00	\$3.00K	Vendor e-mail			Newport/Spectra Physics		
XPP 03400	Pump Laser Thales Jedi	Jedi					1	\$ 220,000.00	\$220.00K	SLAC purchase for gun laser			Thales		
	Totals								\$353.37K						

Hi David,
Thanks for contacting Spectra-Physics.

Below are excerpts from our price list. Please let me know if you have questions or need additional information.

Oscillator:

Millennia PRO 5sJ CW high power ProLite diode-pumped laser, 5 W @ 532 nm, TEM₀₀
\$53,000

Chiller 110WW Standard Neslab (110 volt system) \$2,650

3941-30-M1S < 30 fs Tsunami, Millennia PRO 5s pumping, 800 nm \$65,000

C-Option Complete Lok-to-Clock accessory. Includes all necessary mechanics in the laser head, a PZT-driven mirror for the wavelength range of operation and Model 3930 electronics with built-in 80 MHz reference oscillator. Can only be ordered together with Tsunami \$25,000

Oscillator total: \$145,650

3 mJ, 1 kHz, 35 fs amplifier:

SPFIRE PRO-35F-xKXP High Power (>3W) kilohertz < 35fs Ti:Sapphire regenerative amplifier, including stretcher and compressor and SP-OS-1 optics for 780-820 nm, specify rep rate in kHz (x = 1 or 5) \$140,000

EMPOWER 30-110 High Power, CW Diode pumped, 1-10kHz Nd:YLF intra-cavity doubled, 527nm Q-switched pump laser, 30W @ 5kHz, 110V/60Hz \$96,500

EMP CHILLER 110-WW Chiller for use with Empower lasers, 110 V, 50-60 Hz \$3,000

Total 3 mJ amplifier: \$239,500

5 mJ, 1 kHz, 40 fs amplifier:

SPFIRE PRO-40F-xK5W High Power kilohertz (>5W) < 40fs Ti:Sapphire hybrid regenerative/multipass amplifier, including stretcher and compressor and SP-OS-1 optics for 780-820 nm, specify rep rate in kHz (x = 1 or 5) \$190,000

2xEMPOWER 30-110 High Power, CW Diode pumped, 1-10kHz Nd:YLF intra-cavity doubled, 527nm Q-switched pump laser, 30W @ 5kHz, 110V/60Hz \$193,000

2xEMP CHILLER 110-WW Chiller for use with Empower lasers, 110 V, 50-60 Hz \$6,000

Total 5 mJ amplifier: \$389,000

All the best,
Magnus

Magnus Bengtsson

Field Sales Engineer

Spectra-Physics

A Division of Newport Corporation

1344 Terra Bella Ave
Mountain View, CA 94043
Office Ph: 888 466 5581
Cell Ph: 650 346 7674



Newport Corporation
Corporate Headquarters
 1791 Deere Avenue, Irvine, CA 92606
 Tel (800) 222-6440 • Fax (949) 253-1680
 Federal I.D. 94-0849175

Spectra-Physics Lasers Division
 1335 Terra Bella Avenue, Mountain View, CA 94043
 Tel 800-SPL-LASER (800-775-5273)
 Fax (650) 964-3584

Quotation No.
QVD336

Ryan Coffee

Stanford Linear Accelerator Center
 2575 Sand Hill Road
 Mail Stop 69
 Menlo Park, CA 94025

Telephone: +1 (650) 926-4608

Fax: +1 (650) 926-4100

E-mail: coffee@slac.stanford.edu

Quotation Date: 31-October-2007		Customer Reference: Request for Quote		Quote Firm for: 30 Days		Payment Terms: Net 30		F.O.B. Origin PPA		Ship By Best Way	
ITEM	QTY	DESCRIPTION				APPROX. SHIP DATE	EACH	TOTAL			
1	1	SPFIRE PRO-35F-1KXP High power kilohertz <35 fs Ti:sapphire regenerative amplifier, greater than 3.5 Watts output with Spectra-Physics Empower pump (typically 15 mJ pump for >3 mJ amplifier output), stretcher and compressor and SP-OS-1optics for 750-840 nm, 1 kHz repetition rate.					\$140,000.00	\$140,000.00			
							Subtotal	\$140,000.00			
							Discount	-\$25,000.00			
							Total	\$115,000.00			

Notes:

All commercially reasonable efforts will be applied to achieve 3 mJ or greater with 15 mJ pump at 1 kHz from customer's existing Quantronix Darwin pump laser.

Darwin pump laser to be sent to Spectra-Physics factory to be used during the entire build process of Spitfire Pro XP amplifier. Telescope optics in the Spitfire for mode-matching the pump laser will be adjusted or changed as needed to achieve best performance.

Note:

A PC is required to run the Spitfire Graphical User Interface.

Recommended Diagnostics and Accessories:

A	1	Chiller 110WW Standard 110 volt chiller for use with either Millennia or Tsunami laser system.		\$2,650	\$2,650
---	---	----------------------------------------------------------------------------------------------------------	--	---------	---------

Nesslab Merlin 25 Chiller or equivalent is recommended to cool the rod tower in the Spitfire Pro.

THALES

L A S E R

QUOTATION

Reference n° :DC/08.01.0016/FG
Date : 22/01/2008
Contact : Fabien GHEZ
Tel : + 33 1 69 33 02 25

Dr. David Fritz
Physicist and LCLS Instrument Scientist
Stanford Linear Accelerator Center
2575 Sand Hill Road, M/S 43A
Menlo Park, CA 94025

(650) 926-3779 - Office
(650) 926-3615 - Fax

Item	Description	Delivery Time	Unit Price	Qty	Total Price
1	ISEO 20 OUTPUTS No PC included	6-8 weeks	5534 USD	1	5534 USD
	Packing and Shipping DDU Menlo Park, CA, USA		275 USD	1	275 USD
	Total				5809 USD

All prices are in American Dollar (\$)

Quotation Validity : 30 days

Shipment Terms (Incoterms 2000) :DDU Menlo Park, CA, USA

Warranty Conditions : 1 year

Payment Terms : 100 % after delivery. Net days.

Bank details : Société Générale Paris Opéra : SOGEFRPP

IBAN : FR76 30003 03620 00120008494 75

This quotation is submitted to Thales Laser Sales Terms and Conditions

THALES LASER S.A.

Route Départementale 128 – BP 46 – 91 401 Orsay Cedex – France. Tel : +33 (0)1 69 33 06 94. Fax : +33 (0)1 69 33 02 71

Registered in France: RCS Evry B 352 811 954 – VAT number: FR 04 352 811 954

Fritz, David M.

From: Spectrogon US [sales.us@spectrogon.com]
Sent: Thursday, January 17, 2008 8:35 AM
To: Fritz, David M.
Subject: grating RFQ

Thank you for your inquiry. Spectrogon is pleased to quote the following:

PC 1400 120 x 140 x 20 800nm

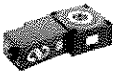

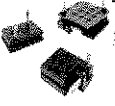

Unit Price: \$5893.00
Lead time: approx. 8 weeks aRO

Regards,
Kelly Koerber

Spectrogon US, Inc.
24B Hill Rd.
Parsippany, NJ 07054

Website: www.spectrogon.com
E-mail: sales.us@spectrogon.com
tel. 973-331-1191
fax. 973-331-1373

Continue Shopping or begin Secure Checkout.

Quantity	Unit	Product	Description	Availability	Total Price	
1	EA	URS150BPP	 ROTATION STAGE,W/STEPPER MOTOR see product detail	1 on 3/21/08	3,415.00 USD	remove ✓
1	EA	UTS150PP	 STEPPER DRIVEN LINEAR STAGE 150mm see product detail	1 on 2/7/08	3,400.00 USD	remove ✓
1	EA	37	 TILT PLATFORM see product detail	1 on 2/7/08	677.00 USD	remove ✓
1	EA	RG-22-2	 BREADBOARD,RESEARCH GRADE see product detail	1 on 3/7/08	992.00 USD	remove ✓

Order Subtotal: 8,484.00 USD

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Continue Shopping or begin Secure Checkout.

Quantity	Unit	Product	Description	Availability	Total Price	
1	EA	RG-24-4-ML	 BBOARD,RESEARCH GR.4 IN M/L see product detail	1 on 3/10/08	2,222.00 USD	<input type="button" value="remove"/>
1	EA	HB-4XAR.14	 BEAM EXPANDER ASSY 4X see product detail	1 on 4/28/08	2,236.00 USD	<input type="button" value="remove"/>
1	EA	HB-4XAR.16	 BEAM EXPANDER ASSY 4X see product detail	1 on 4/28/08	2,288.00 USD	<input type="button" value="remove"/>
2	EA	VB-2	 ASSY,V-BLOCK,VB-2 see product detail	2 on 2/11/08	172.00 USD	<input type="button" value="remove"/>
6	EA	U200-A2K-NL	 MOUNT MIRROR U200-A-SERIES see product detail	6 on 2/8/08	876.00 USD	<input type="button" value="remove"/>
2	EA	20B20UF.25	 MIRROR,ULTRAFast see product detail	2 on 2/8/08	798.00 USD	<input type="button" value="remove"/>
2	EA	20QM20HM.35	 MIRROR, FLAT HIGH POWER LASER see product detail	2 on 2/8/08	690.00 USD	<input type="button" value="remove"/>



Order Subtotal: 9,282.00 USD

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Continue Shopping or begin Secure Checkout.

Quantity	Unit	Product	Description	Availability	Total Price	
1	EA	ISO-05-800-BB-P	 BB ISOLATOR,800NM,5MM,PBS see product detail	1 on 2/8/08	2,990.00 USD	<input type="button" value="remove"/>
1	EA	10FC16PB.5	 BEAMSPLITTER,POLARIZING see product detail	1 on 2/8/08	375.00 USD	<input type="button" value="remove"/>

Order Subtotal: 3,365.00 USD

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0000129561 [Search Req](#)

Approved

Type: **Regular Purchase Requisition**
 Requisition: **0000129561**
 Date: 12/11/06
 Buyer: [Freeman, Beverly J.](#)
 Entered by: [DARLENE](#)
[All Comments](#)
 Requestor: [Gilevich, Alexandra](#)
 Suggested Vendor: [Thales Laser Sa](#)

Item	Qty	Unit \$	Unit	Est Cost	Description	P.O.	Charge No.	Dlvr To	PO Cost
1	2	189,000.000	EA	378,000.000	B280, JEDI with power supply and cooling unit	68396	9682035	280B-151	378,000.000
<< See Attached Sole Source Justification See attached Quote 06.11.0320/DC >>									
Totals				\$378,000.000					\$378,000.000

Purchase Order: 68396

Dispatched
Fully
Received

TYPE: Regular Purchase Order
 PO Date: 5/2/2007
 Buyer: FREY
 Comment: You are hereby authorized to supply the items on this order based upon a Waiver of the "Buy American Act" Article of the Terms and Conditions which has been made by the Department of Energy or Stanford Linear Accelerator Center on May 1, 2007.
 Approved [Thales Laser Sa](#)
 Vendor:

PO Line	Req Line	Qty	Unit Price	Unit	P.O. Cost	Description	Due Date	Charge No.	Location	Date Received
1	<u>1</u>	2	189,000.00	EA	378,000.00	(B280) THALES JEDI 532 PUMP LASER, #6801278.	9/14/2007	9682035	280B-151	10/23/07

Voucher Information:

Vndr	Invoice	Invoice Date	Vchr	Acctg Date	PO ID	PO Line	Description	Chrg No.	Qty	Amount

12266	2007068A	9/28/2007	252797	10/24/2007	68396	1.1	(B280) THALES JEDI 532 PUMP LA	9682035	2	\$378,000.00
Totals									2	\$378,000.00

Payment Information:

Voucher	Vendor	Payment Method	Date	Paid Check#	Amount
252797	12266	System Check	10/24/2007	062716	\$378,000.00
Totals					\$378,000.00

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



Quotation

Quotation No.	Revision	Quotation Date	FOB	
Q-356231	N/A	11/28/2007	Santa Clara	
Payment Terms*	Customer Ref No.	Application Code	Taxable	Estimated Ship Date
Net 30	N/A	SCI-111	Yes	8 Weeks ARO

Company: Stanford Linear Accelerator Center
 Customer: Ryan Coffee
 Address: 2575 Sand Hill Road, Mail Stop 69
 Bldg. 137, Rm. 202
 Menlo Park, CA94025

Send Order To: Sales Order Administration
 5100 Patrick Henry Dr, MS P-46
 Santa Clara, CA 95054

fax 408-764-4646

Phone #: 650-926-4608
 Fax #: 650

Please reference this Quote and Revision number on your Purchase Order: Q-356231

Product	Qty	Price	Extended Price
P/N: 1122122 Legend Elite-USP-1K-HE The Legend Elite family is a new generation of ultrafast, Ti:sapphire amplifiers that ensures the highest levels of sustainable performance and reliability. The system features · Integrated Evolution pump laser (sold separately) for overall system compactness and stability · Temperature-stabilized regenerative amplifier platform for environmental stability · New high-efficiency cavity design for maximum pulse energy · Enhanced stretcher/compressor elements for optimum pulse width and beam quality. Combined with Coherent's proven, market-leading sub-systems such as Micra, Mira or Vitesse ultrafast oscillators, Verdi CW and Evolution DPSS green pump lasers, or OPerA Solo and TOPAS OPA systems, the Legend Elite guarantees Better Ultrafast, Every Day. The Legend Elite USP-1K-HE is a high energy model that comfortably guarantees the following un-matched performance when pumped by Coherents Evolution-30 diode-pumped, Q-switched laser and seeded by Coherents Micra Ti:sapphire oscillator. Pulse Energy >3mJ Repetition rate 1kHz Pulse Width <35fs Energy Stability <0.75% rms Beam Quality M2 <1.35 (see data sheet for full list of specifications)	1	USD 151,000.00	USD 151,000.00
DISCOUNT	1	USD -33,100.00	USD -33,100.00
Total			USD 117,900.00

Quote Expires On: 12/15/2007

In addition to the above products, Coherent offers a complete line of Laser Measurement and Control Solutions including Power and Energy Meters, Beam Diagnostic and Analysis Systems, Wavelength Meters, Spectrum Analyzers and Control Systems. For more information please call toll free at 1-800-343-4912 or visit our website and www.Coherent.com, highlight Products and click on Laser Measurement and Control.

*Payment Terms referred to on quote are subject to approval.

Any order based on this quotation is subject to the Standard Terms and Conditions of Sale (see attached).

S-19931

Terms and Conditions attached.



1.2.03.01.03 Temporal Pulse Shaper

LUSI "XPP temporal pulse shaper"
WBS 1.2.3.1.3

Estimator Fritz

Description: Temporal pulse shaper for XPP laser sytem

Activity ID	DESCRIPTION	Part Number	Material	Man Months	Resource	Hours	QTY	Unit Cost [\$]	Direct Total	Source/Status of Estimate	Weight each (lb)	Weight total (lb)	Vendor	Note 1	Note 2
	MSL														
	Total								\$61.74K						
XPP 03520	Temporal Pulse Shaper Fastlite Dazzler	HR-800					1	\$61,740.00	\$61.74K	Vendor e-mail			Fastlite	42,000 Euro	

Fritz, David M.

From: Pascal Tournois [pascal.tournois@fastlite.com]
Sent: Friday, November 10, 2006 10:07 AM
To: Fritz, David M.
Subject: Fwd: Re: Dazzler Quotation
Attachments: spec-HR-800-5.pdf; Phazzler-technical-description.pdf; Phazzler-data-sheet.pdf; ATT6542625.txt; ATT6542626.htm

With the HR-800 specs now...

Date: Fri, 10 Nov 2006 19:04:47 +0100
To: "Fritz, David M." <dmfritz@slac.stanford.edu>
From: Pascal Tournois <pascal.tournois@fastlite.com>
Subject: Re: Dazzler Quotation
Cc: info@fastlite.com

Hello David,

Following to our discussion, please find here after the information you kindly requested:

1] Dazzler

The HR-800 Dazzler list price is as follow:

HR-800/T1: 42 000 Euros

The list price includes delivery, a typical two days training and installation session and a one year warranty.

The specs are here attached.

2] Phazzler

While not yet on our web site, I have attached the data sheet of a brand new product, named the Phazzler, which enables for the implementation of various measurement methods (Spider, Frog, autocorrelation) in a single device, and in a single beam geometry. Moreover, the Phazzler device is tunable over the same wavelength range than the Dazzler system quoted above. Adding the Phazzler to a given experiment allows for a easy and reliable pulse characterization for complex pulse shapes, and this for any wavelengths belonging to the device range.

The Phazzler PH-750-850 (see attached spec) is list priced 68 000 Euros.

The list price also includes delivery, a typical two days training and installation session and a one year warranty.

Thank you again for your interest with respect to our products.

Should you need any additional information, please do not hesitate to contact us.

Best regards,
Pascal Tournois

At 15:04 09/11/2006 -0800, you wrote:

Hello,

I was interested in obtaining a cost estimate for a HR-800 Dazzler system. It would be wonderful if a quotation could be send to me via e-mail. Thank you!

Sincerely,

David Fritz
LCLS Instrument Scientist

Stanford Linear Accelerator Center
2575 Sand Hill Road, MS 43A
Menlo Park, CA 94025

(650) 926-3779 Phone
(650) 926-3165 Fax

1.2.03.01.04 Optical Parametric Amplifier

LUSI "XPP optical parameteric amplifier"
WBS 1.2.3.1.4

Estimator Fritz

Description: OPA for XPP laser sytem

Activity ID	DESCRIPTION	Part Number	Material	Man Months	Resource	Hours	QTY	Unit Cost [\$]	Direct Total	Source/Status of Estimate	Weight each (lb)	Weight total (lb)	Vendor	Note 1	Note 2
XPP 03640	MSL														
	Total								\$98.58K						
	Optical Parametric Amplifier TOPAS OPA	HE-TOPAS					1	\$ 98,575.10	\$98.58K	previous SLAC PO			Light Conversion		

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0000115233 Search Req

Approved

Type: **Regular Purchase Requisition**
 Requisition: **0000115233**
 Date: 12/09/04
 Buyer: Freeman, Beverly J.
 Entered by: SLATER
 Comment: faxing quote & sole source & specifications to SLAC purchasing 12-9-04
All Comments
 Requestor: Lindenberg, Aaron M.
 Suggested Vendor: Quantronix Corp

Item	Qty	Unit \$	Unit	Est Cost	Description	P.O.	Charge No.	Divr To	PO Cost
1	1	93,800.000	EA	93,800.000	#Topas-FS-SFG/NDFG-1 separate, computer controlled, 800nm pump, tuning 475-2600nm and 1.15-11 microns, input energy <1.5mJ (see quote, sole source, specs)	54841	254802	137E-202	94,075.100
2	1	4,500.000	EA	4,500.000	Topas pump laser optics kit	54841	254802	137E-202	4,500.000
Totals				\$98,300.000					\$98,575.100

Purchase Order: 54841

Complete
 PO
 Partially
 Received
 No
 activity
 (D)

TYPE: Regular Purchase Order
 PO Date: 2/14/2005
 Buyer: CWJAMISO
 Comment: TIME IS OF THE ESSENCE

 Time is of the essence in Seller's performance of this purchase order. In the event the Seller encounters difficulty in timely meeting the performance requirements of this purchase order, or when the Seller anticipates difficulty in meeting the purchase order Due Date, Seller shall immediately notify the Buyer, in writing, giving pertinent details; however, this data shall be informational only in character and compliance with this provision shall not be construed as a waiver by the Buyer of any delivery schedule or of any rights or remedies provided by law or by this purchase order.

Approved Vendor: Quantronix Corp

PO Line	Req Line	Qty	Unit Price	Unit	P.O. Cost	Description	Due Date	Charge No.	Location	Date Received
1	<u>1</u>	1	93,800.00	EA	93,800.00	#Topas-FS-SFG/NDFG-1 separate, computer controlled, 800nm pump, tuning 475-2600nm and 1.15-11 microns, input energy <1.5mJ, per vendor Quote #1014-001-04, dated 11/8/04.	4/29/2005	254802	137E-202	03/28/05
2	<u>2</u>	1	4,500.00	EA	4,500.00	Topas Pump Laser Optics Kit	4/29/2005	254802	137E-202	05/24/05
3	<u>1</u>	1	275.10	LOT	275.10	NRE Freight Charges	4/29/2005	254802	137E-202	N/A

Voucher Information:

Vndr	Invoice	Invoice Date	Vchr	Acctg Date	PO ID	PO Line	Description	Chrg No.	Qty	Amount
11919	222054	3/22/2005	190623	5/24/2005	54841	1.1	#Topas-FS-SFG/NDFG-1 separate,	254802	1	\$93,800.00
11919	222054	3/22/2005	190623	5/24/2005	54841	2.1	Topas Pump Laser Optics Kit	254802	1	\$4,500.00
Totals									2	\$98,300.00

Payment Information:

Voucher	Vendor	Payment Method	Date	Paid Check#	Amount
190623	<u>11919</u>	System Check	5/25/2005	024709	\$98,300.00
Totals					\$98,300.00

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

1.2.03.01.05 Laser Timing System

NO BOE
FOR THIS
WBS:

1.2.03.02 Optics
Optomechanics & Diagnostics

1.2.03.02 Optics
Optomechanics & Diagnostics

NO BOE
FOR THIS
WBS:

1.2.03.02.01 Optics & Optomechanics

LUSI "XPP optics and optomechanics"
WBS 1.2.3.2.1

Estimator Fritz

Description: Optics & optomechanics

ACTIVITY ID	DESCRIPTION	Part Number	Material	Man Months	Resource	Hours	QTY	Unit Cost [\$]	Direct Total	Source/Status of Estimate	Weight each (lb)	Weight total (lb)	Vendor	Note 1	Note 2
XPP 03760	MSL														
	Total								\$190.33K						
	Retroreflector	UBR2 5-11					1	\$ 1,320.00	\$1.32K	Newport Catalog			Newport		
	Rotation Stage (manual)	RSP-1T					10	\$ 186.00	\$1.86K	Newport Catalog			Newport		
	Mirror Mounts	U200-A2K-NL					60	\$ 146.00	\$8.76K	Newport Catalog			Newport		
	Periscope	BSD-2A, PS-SC					3	\$ 462.00	\$1.39K	Newport Catalog			Newport		
	Quarter Waveplate	10RP54-2					2	\$ 775.00	\$1.55K	Newport Catalog			Newport		
	Half Waveplate	10RP52-2					4	\$ 775.00	\$3.10K	Newport Catalog			Newport		
	Window	20BW40-30AR.16					4	\$ 308.00	\$1.23K	Newport Catalog			Newport		
	Motorized Linear Stage	MFA-PP					2	\$ 1,365.00	\$2.73K	Newport Catalog			Newport		
	Rotation Stage (motorized)	PR50PP					4	\$ 1,315.00	\$5.26K	Newport Catalog			Newport		
	Lense Holders	LA1V-XY					15	\$ 130.00	\$1.95K	Newport Catalog			Newport		
	Manual Translation Stage	SDS40					5	\$ 442.00	\$2.21K	Newport Catalog			Newport		
	Motorized Actuators	CMA-12PP					10	\$ 820.00	\$8.20K	Newport Catalog			Newport		
	Ultrafast Mirrors	20B20UF.25					60	\$ 399.00	\$23.94K	Newport Catalog			Newport		
	Beamsplitters	20RQ0OUB.2					6	\$ 315.00	\$1.89K	Newport Catalog			Newport		
	Ultrafast Beam Sampler	10B20-01NC.2					6	\$ 199.00	\$1.19K	Newport Catalog			Newport		
	Beam Sampler Mount	U100-AC2K					6	\$ 178.00	\$1.07K	Newport Catalog			Newport		
	Beamsplitter mounts	U200-AC2K					6	\$ 258.00	\$1.55K	Newport Catalog			Newport		
	Polarizer	10P109AR.16					5	\$ 1,460.00	\$7.30K	Newport Catalog			Newport		
	ND Filters	FS-ND					1	\$ 1,074.00	\$1.07K	Newport Catalog			Newport		
	Color Filters	FS-C					1	\$ 999.00	\$1.00K	Newport Catalog			Newport		
	Filter Holders	M-PPF50					10	\$ 68.30	\$0.68K	Newport Catalog			Newport		
	Long Delay Stage	IMS600LM					1	\$ 9,320.00	\$9.32K	Newport Catalog			Newport		
	Spherical Lenses	various					15	\$ 150.00	\$2.25K	Newport Catalog			Newport		
	Cylindrical Lenses	various					5	\$ 419.00	\$2.10K	Newport Catalog			Newport		
	Non-linear Crystals	BBO Type I					4	\$ 990.00	\$3.96K	EKSPLA Catalog			Altos Photonics		
	Manual Rotation Stage for Xtals	124-0050					5	\$ 240.00	\$1.20K	Optosigma Catalog			Optosigma		
	Pedestals	9961					100	\$ 28.00	\$2.80K	Newfocus Catalog			Newfocus		
	Pedestal Shims	9950					10	\$ 49.00	\$0.49K	Newfocus Catalog			Newfocus		
	Pedestal Clamps	9909					100	\$ 15.00	\$1.50K	Newfocus Catalog			Newfocus		
	Iris	ID50					20	\$ 108.20	\$2.16K	Thorlabs Catalog			Thorlabs		
	Posts	TR4					50	\$ 5.87	\$0.29K	Thorlabs Catalog			Thorlabs		
	Post Holders	PH4-ST					50	\$ 9.17	\$0.46K	Thorlabs Catalog			Thorlabs		
	Post Feet	BA2					50	\$ 7.27	\$0.36K	Thorlabs Catalog			Thorlabs		
	HeNe	HRP020					1	\$ 950.00	\$0.95K	Thorlabs Catalog			Thorlabs		
	CCD for Steering Stab	TM-6710CL					5	\$ 2,037.00	\$10.19K	Vendor Quote			Visys Incorporated		
	CCD for Steering Stab	G52-274					3	\$ 399.00	\$1.20K	Edmund Catalog			Edmund Optics		
	Various Optomechanics						50	\$ 100.00	\$5.00K						
	Relay imaging tube & optics						1	\$ 5,000.00	\$5.00K	eng judge					
	Custom mounting						10	\$ 500.00	\$5.00K	eng judge					
	Mirror Mounts	U200-A2K-NL					40	\$ 146.00	\$5.84K	Newport Catalog			Newport		
	Quarter Waveplate	10RP54-2					2	\$ 775.00	\$1.55K	Newport Catalog			Newport		
	Half Waveplate	10RP52-2					2	\$ 775.00	\$1.55K	Newport Catalog			Newport		
	Motorized Actuators	CMA-12PP					4	\$ 820.00	\$3.28K	Newport Catalog			Newport		
	Ultrafast Mirrors	20B20UF.25					40	\$ 399.00	\$15.96K	Newport Catalog			Newport		
	Ultrafast Beam Sampler	10B20-01NC.2					4	\$ 199.00	\$0.80K	Newport Catalog			Newport		
	Beam Sampler Mount	U100-AC2K					4	\$ 178.00	\$0.71K	Newport Catalog			Newport		
	Polarizer	10P109AR.16					5	\$ 1,460.00	\$7.30K	Newport Catalog			Newport		
	Non-linear Crystals	BBO Type I					4	\$ 990.00	\$3.96K	EKSPLA Catalog			Altos Photonics		
	Various Optomechanics						50	\$ 100.00	\$5.00K						
	Custom mounting						10	\$ 500.00	\$5.00K	eng judge					
	Pedestals	9961					100	\$ 28.00	\$2.80K	Newfocus Catalog			Newfocus		
	Pedestal Shims	9950					10	\$ 49.00	\$0.49K	Newfocus Catalog			Newfocus		
	Pedestal Clamps	9909					100	\$ 15.00	\$1.50K	Newfocus Catalog			Newfocus		
	Posts	TR4					50	\$ 5.87	\$0.29K	Thorlabs Catalog			Thorlabs		
	Post Holders	PH4-ST					50	\$ 9.17	\$0.46K	Thorlabs Catalog			Thorlabs		
	Post Feet	BA2					50	\$ 7.27	\$0.36K	Thorlabs Catalog			Thorlabs		

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0000118351 Search Req

Complete

Type: **Regular Purchase Requisition**
 Requisition: **0000118351**
 Date: 06/21/05
 Buyer: Escudero, John A.
 Entered by: SLATER
[All Comments](#)
 Requestor: Lindenberg, Aaron M.
 Suggested Vendor: Altos Inc

Item	Qty	Unit \$	Unit	Est Cost	Description	P.O.	Charge No.	Dlvr To	PO Cost
1	1	750.000	EA	750.000	BBO crystal 8x8x0.5mm, type 1 the 29.2 deg phi=90 deg. Coated P@400-8 nm, for SHG @ 800nm, mounted	56921	197010	137E-202	750.000
2	1	75.000	EA	75.000	1" ring holder for crystal	56921	197010	137E-202	75.000
3	1	165.000	EA	165.000	Positioning mount 840-0199 for nonlinear crystal	56921	197010	137E-202	165.000
Totals				\$990.000					\$990.000

Purchase Order: 56921

Complete
Fully Received
Matched/Complete

TYPE: Regular Purchase Order
 PO Date: 7/1/2005
 Buyer: JOHNE
 Comment: Order placed with Jurgita. Reference Order Number 30624.

Stanford Linear Accelerator Center Terms and Conditions for Commercial Supplies and Services, M366 (4/05), are attached hereto and incorporated by reference.

Approved Vendor: Altos 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	750.00	EA	750.00	BBO crystal 8x8x0.5mm, type 1 the 29.2 deg phi=90 deg. Coated P@400-8 nm, for SHG @ 800nm, mounted	7/22/2005	197010	137E-202	07/27/05
2	<u>2</u>	1	75.00	EA	75.00	1" ring holder for crystal	7/15/2005	197010	137E-202	07/27/05
3	<u>3</u>	1	165.00	EA	165.00	Positioning mount 840-0199 for nonlinear crystal	7/15/2005	197010	137E-202	07/27/05

Voucher Information:

Vndr	Invoice	Invoice Date	Vchr	Acctg Date	PO ID	PO Line	Description	Chrg No.	Qty	Amount
<u>11242</u>	3100	7/22/2005	195443	8/4/2005	56921	1.1	BBO crystal 8x8x0.5mm, type 1	197010	1	\$784.09
<u>11242</u>	3100	7/22/2005	195443	8/4/2005	56921	2.1	1" ring holder for crystal	197010	1	\$78.41
<u>11242</u>	3100	7/22/2005	195443	8/4/2005	56921	3.1	Positioning mount 840-0199 for	197010	1	\$172.50
Totals									3	\$1,035.00

Payment Information:

Voucher	Vendor	Payment Method	Date	Paid Check#	Amount
195443	<u>11242</u>	System Check	8/19/2005	028722	\$1,035.00
Totals					\$1,035.00

[Feedback | SLAC]
 Owner: bis-admin



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3 items in cart | Sub-Total \$4,790.00

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SHOPPING CART

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IMAGE	MODEL NUMBER	NAME	AVAILABILITY	QUANTITY	PRICE	ITEM TOTAL	REMOVE
	9961	4" Pedestal	 In stock	100	\$28.00	\$2,800.00	<input type="checkbox"/>
	9950	Pedestal Shim Set	 In stock	10	\$49.00	\$490.00	<input type="checkbox"/>
	9909	Regular Holding Fork	 In stock	100	\$15.00	\$1,500.00	<input type="checkbox"/>



Sub-Total: \$4,790.00

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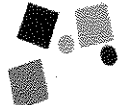


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Quantity	Unit	Product	Description	Availability	Total Price	
1	EA	UBBR2.5-1I	 RETROREFLECTOR,63MM ASSY see product detail	1 on 3/10/08	1,320.00 USD	<input type="button" value="remove"/>
10	EA	RSP-1T	 STAGE,ROTARY see product detail	10 on 2/8/08	1,860.00 USD	<input type="button" value="remove"/>
60	EA	U200-A2K-NL	 MOUNT MIRROR U200-A-SERIES see product detail	25 on 2/8/08 6 on 3/3/08 17 on 4/1/08 12 on 5/1/08	8,760.00 USD	<input type="button" value="remove"/>
1	EA	BSD-2A	 BEAM STEERER see product detail	1 on 2/8/08	415.00 USD	<input type="button" value="remove"/>
2	EA	PS-SC	 ASSY,CLAMP,MOUNTING,POST see product detail	2 on 2/8/08	47.00 USD	<input type="button" value="remove"/>
2	EA	10RP54-2	 1/4 WAVEPLATE,ACHROMATIC NIR see product detail	2 on 2/8/08	1,550.00 USD	<input type="button" value="remove"/>
4	EA	10RP52-2	 1/2 WAVEPLATE,ACHROMATIC NIR see product detail	4 on 2/8/08	3,100.00 USD	<input type="button" value="remove"/>
4	EA	20BW40-30AR.16	 WINDOW, PARALLEL, COATED see product detail	4 on 3/3/08	1,232.00 USD	<input type="button" value="remove"/>
2	EA	MFA-PP	 LINEAR STAGE,MINI,STPR MOTOR see product detail	2 on 2/8/08	2,730.00 USD	<input type="button" value="remove"/>

Continue Shopping or begin Secure Checkout.

Quantity	Unit	Product	Description	Availability	Total Price	
4	EA	PR50PP	 STAGE,ROTARY,MINI,STEPPER see product detail	4 on 2/8/08	5,260.00 USD	<input type="button" value="remove"/>
15	EA	LA1V-XY	 OSSY,LENS POSITIONER see product detail	15 on 2/8/08	1,950.00 USD	<input type="button" value="remove"/>
5	EA	SDS65	 LINEAR STAGE,65X65 MM, see product detail	5 on 2/8/08	2,760.00 USD	<input type="button" value="remove"/>
10	EA	CMA-12PP	 CMA,12MM,STEPPER,OPEN LOOP see product detail	10 on 2/8/08	8,200.00 USD	<input type="button" value="remove"/>
60	EA	20B20UF.25	 MIRROR,ULTRAFAST see product detail	23 on 2/8/08 25 on 3/14/08 12 on 4/7/08	23,940.00 USD	<input type="button" value="remove"/>
6	EA	20RQ00UB.2	 BEAMSPLITTER,ULTRAFAST,50.8 see product detail	6 on 2/8/08	1,914.00 USD	<input type="button" value="remove"/>
6	EA	10B20-01NC.2	 BEAM SAMPLER,ACHROMATIC see product detail	6 on 2/8/08	1,194.00 USD	<input type="button" value="remove"/>
6	EA	U100-AC2K	 MOUNT,MIRROR see product detail	6 on 2/8/08	1,068.00 USD	<input type="button" value="remove"/>
6	EA	U200-AC2K	 MOUNT,MIRROR,2 IN CAPTURED see product detail	6 on 2/8/08	1,548.00 USD	<input type="button" value="remove"/>

Continue Shopping or begin Secure Checkout.

Quantity	Unit	Product	Description	Availability	Total Price	
5	EA	10P109AR.16	 <p>POLARCOR POLARIZER 800,25.4 see product detail</p>	1 on 2/11/08 4 on 3/3/08	7,300.00 USD	<input type="button" value="remove"/>
1	EA	FS-ND	 <p>FILTER SET,UVFS,50.8 SQ see product detail</p>	1 on 2/8/08	1,074.00 USD	<input type="button" value="remove"/>
1	EA	FS-C	 <p>FILTER SET COLORED GLASS see product detail</p>	1 on 2/15/08	999.00 USD	<input type="button" value="remove"/>
10	EA	M-PPF50	 <p>HOLDER,FILTER,SPRING,FINGER see product detail</p>	10 on 2/8/08	683.00 USD	<input type="button" value="remove"/>
1	EA	IMS600LM	 <p>LM STAGE,600MM TRAVEL see product detail</p>	1 on 4/4/08	9,320.00 USD	<input type="button" value="remove"/>

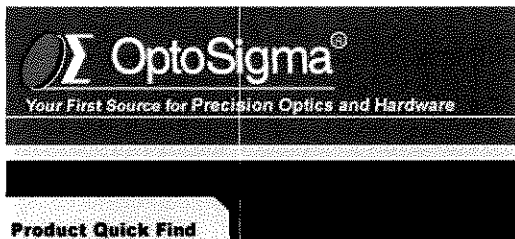
Order Subtotal: 88,224.00 USD

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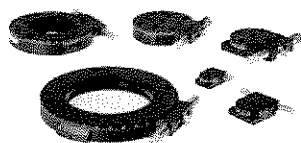


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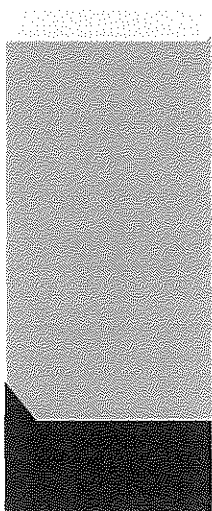


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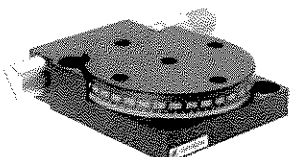
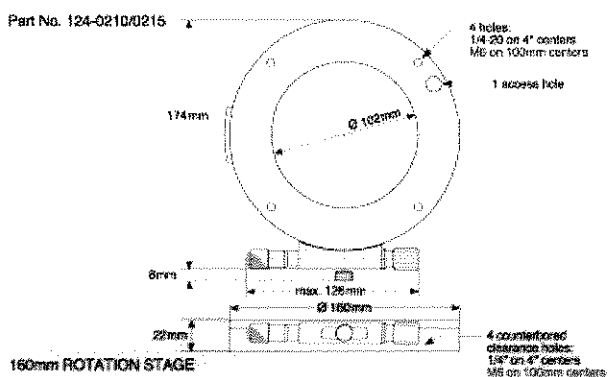
Rotation Stages

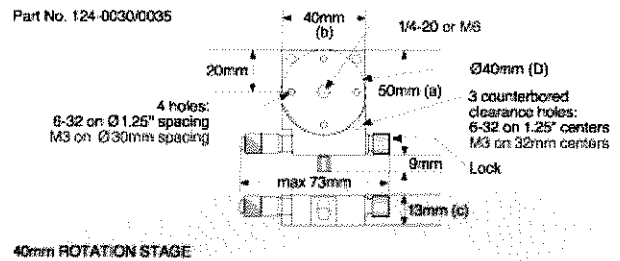
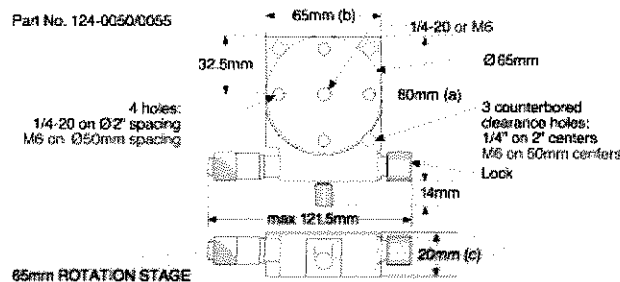
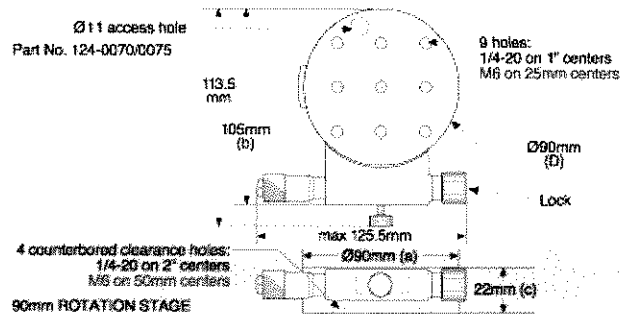
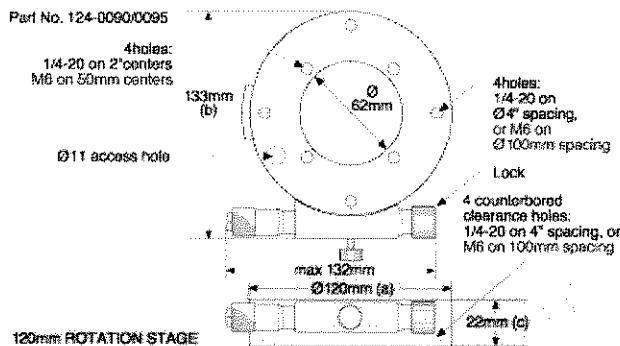


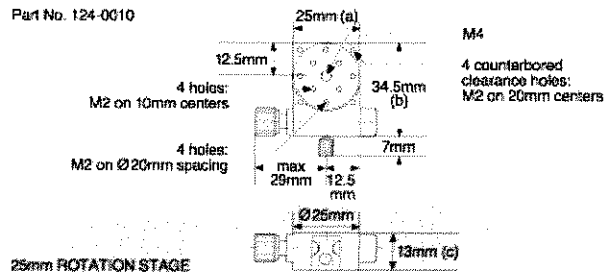
- Continuous 360 degree rotation
- Fine adjustment by micrometer
- Concentricity <50microns
- Compatible with linear translation stages
- Five sizes cover most applications
- Inch and metric mounting



Rotation stages permit the precise angular adjustment of components. These stages use plain brass bearings to provide coarse adjustment over a full 360 degree circle. A scale around the circumference provides an indication of the angle. Once set approximately in place the stage may be locked by means of a clamp screw and then fine adjusted by a micrometer (fine pitch screw is used for the 25mm stage). The sizes of these stages are such that they may be mounted together with translation stages to form compound motion devices. The largest stage we offer has a diameter of 160mm and a 102mm central aperture. The 120mm stage has a 62mm central aperture so it can be mounted with an optical beam passing through its center. The 90mm stage will accept a 65mm linear stage and the 65mm rotation stage can be mounted on top of a 65mm translation stage. The 40mm stage is ideal for OEM applications. The 25mm stage works well with the mini-system. The 160, 120 and 90mm stages utilize crossed roller bearings for high load capacity.







Specifications & Tolerances

Dimensions: +0.2mm
 Material: Brass
 Concentricity: <0.05mm
 Finish: Black chrome
 Parallelism: <0.05mm

Rotation Stages

Outer Diameter, d	Dimensions, a x b	Height, c	Vernier Resolution	Minimum Incremental Motion	Fine Adjustment Range	Load Capacity	Price	INCH	METRIC
								PART NUMBER	PART NUMBER
(mm)	(mm)	(mm)			(deg)	(kg)			
160	160 x 174.0	22	5'	20"	+3	20	\$1,095.00	124-0210	124-0215
120	120 x 133.0	22	5'	20"	+4	20	\$795.00	124-0090	124-0095
90	90 x 103.0	22	5'	30"	+5	15	\$495.00	124-0070	124-0075
65	65 x 80.0	20	20'	30"	+5	7	\$240.00	124-0050	124-0055
40	40 x 50.0	13	20'	30"	+5	5	\$200.00	124-0030	124-0035
25	25 x 34.5	13	20'	1'	+5	3	\$140.00	-	124-0010



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Item	Image	Partnumber	Ship Date	Quantity	Price	Subtotal	Remove
1		ID50 - WEIGHT(Total): 7.73 lbs Standard Iris, 50.0mm max. Aperture	Today	20	\$108.20	\$2,164.00	<input type="checkbox"/>
2		TR4 - WEIGHT(Total): 10.76 lbs Post 0.499" dia x 4" 8-32 stud 1/4-20 tapped hole	Today	50	\$5.87	\$293.50	<input type="checkbox"/>
3		PH4-ST - WEIGHT(Total): 13.11 lbs Post Holder with Spring-Loaded Thumbscrew, L=4" * NOTE: * The quantity you have requested for part number PH4-ST exceeds available stock. A portion of your order will have a lead time. After you have finalized your order, a customer representative will contact you with an exact delivery date or you are welcome to contact us by phone at 1-973-579-7227 or by email at sales@thorlabs.com .	Lead Time	50	\$9.17	\$458.50	<input type="checkbox"/>
4		BA2 - WEIGHT(Total): 8.52 lbs Mounting Base, 2" x 3" x 3/8" (51 x 76 x 10 mm) * NOTE: * The quantity you have requested for part number BA2 exceeds available stock. A portion of your order will have a lead time. After you have finalized your order, a customer representative will contact you with an exact delivery date or you are welcome to contact us by phone at 1-973-579-7227 or by email at sales@thorlabs.com .	Lead Time	50	\$7.27	\$363.50	<input type="checkbox"/>
5		HRP020 - WEIGHT(Total): 11.65 lbs HeNe Laser, 633nm, 2.0mW, Polarized * NOTE: * The quantity you have requested for part number HRP020 exceeds available stock. A portion of your order will have a lead time. After you have finalized your order, a customer representative will contact you with an exact delivery date or you are welcome to contact us by phone at 1-973-579-7227 or by email at sales@thorlabs.com .	Lead Time	1	\$950.00	\$950.00	<input type="checkbox"/>
TOTAL:						\$4,229.50	

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1.2.03.02.02 Laser Diagnostics

LUSI "XPP laser diagnostics"
WBS 1.2.3.2.2

Estimator Fritz

Description: Laser Diagnostics

ACTIVITY ID	DESCRIPTION	Part Number	Material	Man Months	Resource	Hours	QTY	Unit Cost [\$]	Direct Total	Source/Status of Estimate	Weight each (lb)	Weight total (lb)	Vendor	Note 1	Note 2
	MSL														
	Sub Total								\$193.67K						
XPP 03960	Fast Oscilloscope	WaveMaster 8420A					1	\$ 48,990.00	\$48.99K	Vendor Quote			Lecroy		
									\$21.50K						
XPP 04060	Grenouille	UPM-8-20					1	\$ 19,000.00	\$19.00K	Swamp Optics Catalog			Swamp Optics		
	Grenouille Software	UPM-SP-1-PCI					1	\$ 2,500.00	\$2.50K	Swamp Optics Catalog			Swamp Optics		
XPP 04260	Sampling Scope Mainframe	WaveExpert 100H					1	\$ 32,640.00	\$32.64K	Vendor Quote			Lecroy		
XPP 04300									\$48.54K						
	Energy Meter head	818E-20-50-S					1	\$ 1,395.00	\$1.40K	Newport Catalog			Newport		
	Energy Control Unit	2835-C-CAL					1	\$ 5,859.00	\$5.86K	Newport Catalog			Newport		
	Power Meter Head	818P-030-18H					1	\$ 1,695.00	\$1.70K	Newport Catalog			Newport		
	Beam Profiler	LBA-712PC-D					1	\$ 4,295.00	\$4.30K	Previous SLAC purchase			Spiricon		
	Fast Photodiode	1554A					2	\$ 4,175.00	\$8.35K	New Focus Catalog			New Focus		
	Photodiodes	DET10A					6	\$ 132.00	\$0.79K	Thorlabs Catalog			Thorlabs		
	Utility Oscilloscope	TDS3054B					2	\$ 9,995.00	\$19.99K	Test Equity Catalog			Tektronix		
	IR viewer	IRV2-270					1	\$ 1,495.00	\$1.50K	Newport Catalog			Newport		
	Viewer Microscope lens	IRV-MA					1	\$ 65.00	\$0.07K	Newport Catalog			Newport		
	Viewer head strap	IRV-HB					1	\$ 125.00	\$0.13K	Newport Catalog			Newport		
	Viewer Filter	IRV-ND					1	\$ 60.00	\$0.06K	Newport Catalog			Newport		
	Viewer Iris	IRV-ID					1	\$ 60.00	\$0.06K	Newport Catalog			Newport		
	Target Cards	F-IRC1					10	\$ 142.00	\$1.42K	Newport Catalog			Newport		
	Spectrometer	USB4000					1	\$ 2,516.00	\$2.52K	Newport Catalog			Newport		
	Spectrometer Calibration Source	HG-1					1	\$ 419.00	\$0.42K	Newport Catalog			Newport		
XPP 04160	3rd Order Correlator	Rincon SS					1	\$ 42,000.00	\$42.00K	Vendor E-mail			Del Mar Photonics		

Dear David,

Thank you for requesting a quotation from LeCroy!
Here is the pricing for the product(s) you have requested:

Quote #: 35116

Date: 7/7/2006

Valid until: 8/6/2006

WaveMaster 8420A

1 WaveMaster 8420A \$48,990.00
4 GHz, 4 Ch, 20 GS/s, 8MPts/4 channels

Sub Total for WaveMaster 8420A system: \$48,990.00

Total: \$48,990.00

Fritz, David M.

From: webquote@lecroy.com
Sent: Thursday, November 15, 2007 12:39 PM
To: Fritz, David M.
Subject: LeCroy Request for Quotation

Dear David,

Thank you for requesting a quotation from LeCroy!
Here is the pricing for the product(s) you have requested:

Quote #: 47427
Date: 11/15/2007
Valid until: 12/15/2007

WaveExpert 100H

- 1 WaveExpert 100H \$21,250.00
Standard 4-slot Mainframe. Includes full calibrations (SOLT), TDR with s-parameter measurement, digital filters and customization.
- 1 WE-XXL \$3,300.00
510M (1 Ch), 255M (2 Ch), 128M (4 Ch) Waveform Memory
- 1 GPIB-1 \$790.00
IEEE-488 GPIB Remote Control Interface
- 1 RMA-25 \$1,250.00
Rackmount Kit - 25 inch Slide
- 1 SE-30 \$3,850.00
30 GHz electrical sampling head
- 1 SE-50 \$6,050.00
50 GHz electrical sampling head
- 1 ST-20 \$7,000.00
20 GHz electrical sampling head with TDR

Sub Total for WaveExpert 100H system: \$43,490.00

Total: \$43,490.00

If you would like to revise this quote, simply click the link below to make modifications and update the quote live.

Now that you are registered on our website, you can see pricing for any LeCroy oscilloscope product configuration in "real time". Just visit www.lecroy.com from your computer and get USA pricing live all the time.

<http://www.lecroy.com/cm.asp?l=23406&qid=47427&flg=true&lid=1033>

To review our Purchase Terms and Conditions for United States please follow the link below:

http://www.lecroy.com/shopper/Terms_USA.asp

To participate in LeCroy Educational Seminars or Tradeshows near you please follow the link below:

<http://www.lecroy.com/Events/default.asp?menuid=27>

For Order Placement or Technical Information, please call 1-800-5-LECROY (1-800-553-2769). LeCroy's standard terms of sale are Net30 days after invoice date. As with all credit items, satisfactory credit accommodations must be arranged. Minimum order is \$50.00. These commodities licensed by U.S. for ultimate destination within the United States. Diversion contrary to U.S. law prohibited.

Note: This email has been sent to you from our webserver on behalf of your CSR (Customer Service Representative), Danielle Smith. Your CSR is available to assist you with any questions that you may have. If you require immediate assistance, and for some reason Danielle Smith is not available, please contact our Customer Care Center at 1-800-553-2769, and another CSR will be able to help you.

Your contact information: (you can modify your profile at <http://www.lecroy.com>)

Client: Dr. David Fritz
Company: Stanford Linear Accelerator Center
Address: 2575 Sand Hill Road MS #69
City: Menlo Park
State: California
Zip: 94025
Country: United States
Phone: 650-926-3779
Email: dmfritz@slac.stanford.edu



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1 item in cart | Sub-Total \$8,350.00

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IMAGE	MODEL NUMBER	NAME	AVAILABILITY	QUANTITY	PRICE	ITEM TOTAL	REMOVE
	1454	18.5-ps Broadband Photodetector (FC connectorized) 	Available in 6 weeks	2	\$4,175.00	\$8,350.00	<input type="checkbox"/>



Sub-Total: \$8,350.00

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Sales Tax Exempt and Purchase Order information available.

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Quantity	Unit	Product	Description	Availability	Total Price	
1	EA	818E-20-50-S	 ENGY.PWR S/P,50MM,20W see product detail	1 on 3/6/08	1,581.00 USD	remove
1	EA	2835-C-CAL	 POWER METER/W/CALIBRATION CERT see product detail	1 on 2/7/08	6,444.00 USD	remove
1	EA	818P-030-18H	 PWR DETECTOR,18MM APERTURE see product detail	1 on 2/7/08	1,921.00 USD	remove
1	EA	IRV2-270	 LSR VIEWER,270-1700NM see product detail	1 on 2/7/08	1,495.00 USD	remove
1	EA	IRV-ND	 FILTER,ND,T=3.5%@1064NM see product detail	1 on 2/7/08	60.00 USD	remove
1	EA	IRV-MA	 ADAPTER,MICROSCOPE, see product detail	1 on 2/21/08	65.00 USD	remove
1	EA	IRV-ID	 DIAPHRAGM,IRIS see product detail	1 on 2/7/08	60.00 USD	remove
1	EA	IRV-HB	 HEAD STRAP,HANDS FREE OP see product detail	1 on 2/28/08	125.00 USD	remove
10	EA	F-IRC1	 SENSOR CARD,INFRARED see product detail	10 on 2/7/08	1,420.00 USD	remove

Order Subtotal: 13,171.00 USD[Back](#)[Recalculate Price](#)[Continue Shopping](#)[Secure Checkout](#)[Email Cart Quote](#)

February 4, 2008

Item Code	Description	Retail Price
GRATING #8	Grating 8, installed, select 50-75 nm, best: 290-340 nm	\$0.00
GRATING #9	Grating 9, installed, select 200-270 nm, best: 400-800 nm	\$0.00
GRATING #H1	Grating H1, installed, select 425-445 nm, best: 200-575 nm	\$0.00
GRATING #H10	Grating H10, installed, select 95-140 nm, best: 200-635 nm	\$0.00
GRATING #H11	Grating H11, installed, select 75-135 nm, best: 320-800 nm	\$0.00
GRATING #H12	Grating H12, installed, select 60-100 nm, best: 200-575 nm	\$0.00
GRATING #H13	Grating H13, installed, best: 300-1100 nm	\$0.00
GRATING #H14	Grating H14, installed, select 410-420 nm, best: 650-1100 nm	\$0.00
GRATING #H2	Grating H2, installed, select 415-445 nm, best: 250-800 nm	\$0.00
GRATING #H3	Grating H3, installed, select 410-440 nm, best: 350-850 nm	\$0.00
GRATING #H4	Grating H4, installed, select 410-430 nm, best: 530-1100 nm	\$0.00
GRATING #H5	Grating H5, installed, select 205-220 nm, best: 200-400 nm	\$0.00
GRATING #H6	Grating H6, installed, select 140-195 nm, best: 500-1100 nm	\$0.00
GRATING #H7	Grating H7, installed, select 70-100 nm, best: 200-500 nm	\$0.00
GRATING #H9	Grating H9, installed, select 165-205 nm, best: 400-800 nm	\$0.00
GRATING #HC1	HR Composite Grating, installed, 200-1100 range	\$630.00
GRATING #HC1-QE	HR Composite Grating for QE65000s, installed, 200-925 range	\$630.00
GRATING #N1	Grating N1 for NIR256 or NIR512, select 900 nm range	\$0.00
GRATING #N2	Grating N2 for NIR256 only, 900-2500nm	\$0.00
GR-PLSPLUS/IQ	PLS Development Software for GRAMS/AI	\$595.00
GR-PLSPLUS/IQ-I	PLS Development Software for GRAMS/AI -- International	\$595.00
GR-SPECID	Spectral ID Software for use with GRAMS/AI	\$749.00
HG-1	Mercury Argon Calibration Source	\$419.00
HIOXY-18G	Oxygen Sensor, 300-micron fiber, 18-gauge needle tip	\$944.00
HIOXY-21G	Oxygen Sensor, 300-micron fiber, 21-gauge needle tip	\$944.00
HIOXY-AL300	Oxygen Sensor, 300-micron fiber, aluminum jacketing, 1 m	\$787.00
HIOXY-CAL	In-house calibration for HIOXY Systems	\$314.00
HIOXY-CAL-EXT	In-house calibration for FOXY Systems, extended range	\$449.00
HIOXY-CAL-NO	HIOXY calibration not required	\$0.00
HIOXY-OR125	Oxygen Sensor, 1000-micron fiber in 1/8" OD SS ferrule	\$944.00
HIOXY-OR125-G	Oxygen Sensor, 1000-micron fiber in 1/8" OD SS grooved ferr.	\$944.00
HIOXY-OR125-GT	Oxygen Sensor, 1000-micron fiber in 1/8" OD titanium O-ring	\$1,028.00
HIOXY-R	Oxygen Sensor, 1000-micron fiber in 1/16" OD SS ferrule	\$787.00
HIOXY-R-8CM	Oxygen Sensor, 1000-micron in 1/16" OD SS, 8 cm	\$787.00
HIOXY-RECOV	Oxygen Sensor Reconditioning/Recoating Service	\$150.00
HIOXY-RECOV-N	Oxygen Sensor Needle Probe Reconditioning/Recoating Service	\$175.00
HIOXY-T1000	Oxygen Sensor, 1000-micron fiber in 1/4" OD SS ferrule	\$1,574.00
HIOXY-T1000-RTD	Oxygen Sensor, 1000-micron fiber in 1/4" ferrule with RTD	\$1,574.00
HIOXY-T1000-TS	Oxygen Sensor, 1000-micron fiber in 1/4" OD SS ferrule w/the	\$2,099.00
HL-2000	Tungsten Halogen Source, 360-2000nm, 1500 hrs, 2960 K	\$749.95 *
HL-2000-B	Bulb for HL-2000, HL-2000-FHSA	\$97.22 *
HL-2000-B-LL	Bulb for HL-2000-LL (KB)	\$113.07 *
HL-2000-CAL	Radiometrically Calibrated HL-2000, 300-1050 nm	\$992.76
HL-2000-CAL-EXT	Upgrade for Extended Range on HL-2000-CAL; enter range	\$250.00
HL-2000-CAL-ISP-LSO	HL-2000-CAL for use with ISP-50-8-I	\$805.44
HL-2000-FHSA	HL-2000 with filter holder, shutter, attenuator	\$1,587.09 *
HL-2000-FHSA-LL	HL-2000 with filter holder, shutter, attenuator, long-life	\$1,640.03 *
HL-2000-HP	HL-2000 with 20 W output	\$1,287.43 *

Prices in U.S Dollars, EXW Dunedin, Florida; All prices subject to change without notice

Prices marked with (*) are subject to changes in exchange rates.

February 4, 2008

Item Code	Description	Retail Price
TTS-NIR-ES	NIR series spectrometer protection plan; after original purc	\$6,500.00
TTS-QE	QE series spectrometer protection plan; one year	\$2,000.00
TTS-QE-ES	QE series spectrometer protection plan; after original purch	\$2,750.00
TTS-USB	USB series spectrometer protection plan; one year	\$350.00
TTS-USB-ES	USB series spectrometer protection plan; after original purc	\$500.00
UPGD-DET-HR	Upgrade to Sony detector ILX511-B and advanced electronics	\$750.00
UPGD-DET-USB	Upgrade to Sony detector ILX511-B and advanced electronics	\$500.00
UPGD-HR-1	HR series upgrade, one optical bench component	\$400.00
UPGD-HR-2	HR series upgrade, two optical bench components	\$600.00
UPGD-HR-3	HR series upgrade, three optical bench components	\$750.00
UPGD-HR-4	HR series upgrade, four optical bench components	\$900.00
UPGD-HR-CG	HR series upgrade, HC-1 grating, DET4-200-1100 and slit	\$1,350.00
UPGD-NIR-1	NIR series upgrade, one optical bench component	\$750.00
UPGD-NIR-2	NIR series upgrade, two optical bench components	\$900.00
UPGD-QE-1	QE series upgrade, one optical bench component	\$500.00
UPGD-QE-2	QE series upgrade, two optical bench components	\$650.00
UPGD-QE-3	QE series upgrade, three optical bench components	\$800.00
UPGD-QE-4	QE series upgrade, four optical bench components	\$900.00
UPGD-QE-CG	QE series upgrade, HC-1, DET4-200-1100 and slit	\$1,050.00
UPGD-S-1	S2000 series upgrade, one optical bench component	\$400.00
UPGD-S-2	S2000 series upgrade, two optical bench components	\$550.00
UPGD-S-3	S2000 series upgrade, three optical bench components	\$700.00
UPGD-S-4	S2000 series upgrade, four optical bench components	\$850.00
UPGD-SUV+	UV Response Upgrade and ASP with existling USB spectrometers	\$450.00
UPGD-USB-1	USB series upgrade, one optical bench component	\$400.00
UPGD-USB-2	USB series upgrade, two optical bench components	\$550.00
UPGD-USB-3	USB series upgrade, three optical bench components	\$700.00
UPGD-USB-4	USB series upgrade, four optical bench components	\$850.00
USB2000+	USB2000 Spectrometer with advanced electronics	\$2,399.00
USB2000-FLG	Gated Spectrofluorometer, 350-1000 nm	\$2,999.00
USB2000-O2CODE	Stand-alone Oxygen Firmware for USB2000	\$499.00
USB4000	USB4000 Plug-and-Play Miniature Fiber Optic Spectrometer	\$2,309.00
USB4000-FL	USB4000 Preconfigured for Fluorescence	\$2,624.00
USB4000-FL-395	USB4000-FL Preconfigured for Fluorescence, w/ USB-LS-395	\$3,202.00
USB4000-FL-450	USB4000-FL Preconfigured for Fluorescence, w/ USB-LS-450	\$3,202.00
USB4000-UV-VIS	USB4000 Preconfigured for General Lab Use, 200-850 nm	\$2,782.00
USB4000-VIS-NIR	USB4000 Preconfigured for General Lab Use, 350-1000 nm	\$2,624.00
USB-650	Red Tide Spectrometer, preconfigured, 350-1000 nm	\$1,049.00
USB-650UV	Red Tide Spectrometer, preconfigured, 200-850nm	\$1,299.00
USB-650-UV/VIS	Red Tide Spectrometer with USB-ISS-UV/VIS	\$2,624.00
USB-650-VIS/NIR	Red Tide Spectrometer with USB-ISS-VIS	\$1,574.00
USB-ADP-BB	Adapter to connect HR4000 Breakout Box to the USB4000	\$100.00
USB-ADP-DT	Adapter to connect spectrometer to DT-MINI ISS-UV-VIS	\$104.00
USB-ADP-DT2	Adapter to attach USB-DT to USB2 or USB4	\$104.00
USB-ADP-H	Adapter pkg. to connect spectrometer to handheld PC	\$104.00
USB-ADP-H-E	Adapter pkg. to connect spectrometer to handheld PC, Euro	\$104.00
USB-ADP-PC	Adapter pkg. to connect spectrometer to PC	\$94.00
USB-ADP-PC-E	Adapter pkg. to connect spectrometer to PC, Euro	\$79.00

Prices in U.S Dollars, EXW Dunedin, Florida; All prices subject to change without notice

Prices marked with (*) are subject to changes in exchange rates.

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0000119814 Search Req

Approved

Type: **Regular Purchase Requisition**
 Requisition: **0000119814**
 Date: 09/02/05
 Buyer: Villanueva, Vincent C.
 Entered by: PDUNGAN
[All Comments](#)
 Requestor: Gilevich, Alexandra
 Suggested Vendor: Spiricon Inc

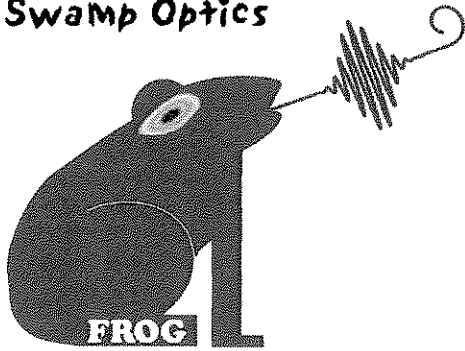
Item	Qty	Unit \$	Unit	Est Cost	Description	P.O.	Charge No.	Dlvr To	PO Cost
1	1	4,295.000	EA	4,295.000	LCLS-Laser Beam Analyzer Model LBA-712PC-D	58284	9242124	280B-151	4,295.000
2	1	1,495.000	EA	1,495.000	LCLS-Laptop Adapter Model SP-LTA-D PCI to PCMCIA Adapter Box	58284	9242124	280B-151	1,495.000
3	1	1,895.000	EA	1,895.000	LCLS-Digital Camera Model UP-680-12 (12 Bit)	58284	9242124	280B-151	1,895.000
4	1	395.000	EA	395.000	LCLS-Digital Camera Cable Model CC-UP12-PC	58284	9242124	280B-151	395.000
5	1	3,995.000	EA	3,995.000	LCLS-Digital Camera Model COHU 7512 (10 Bit)	58284	9242124	280B-151	3,995.000
6	1	395.000	EA	395.000	LCLS-Digital Camera Cable Model CC-7512-PC	58284	9242124	280B-151	395.000
Totals				\$12,470.000					\$12,470.000

Purchase Order: 58284

Complete
 Fully Received
 Matched/Complete

TYPE:
 PO Date: 9/8/2005
 Buyer: CRUMB

Swamp Optics



Swamp Optics, LLC
6300 Powers Ferry Rd #600-345
Atlanta, GA 30339-2919
Federal ID #58-2663197
404-54swamp or 404-547-9267
FAX PO to Linda @ 866-855-4518 FAX
Linda.Trebino@swampoptics.com
www.swampoptics.com

Effective February 2, 2007

Swamp Optics Price List

All FROGs and GRENOUILLEs now use USB cameras and allow free-running and triggered-single-shot measurements. No power supply is needed.

FROG Model 8-9-USB Ultrashort-pulse spatio-temporal measurement device.
Measures 700-1100 nm pulses $\sim 10\text{-}\sim 100$ fs long @ 800 nm US\$22,000

GRENOUILLE Model 8-20-USB Ultrashort-pulse spatio-temporal measurement device.
Measures 700-1100 nm pulses $\sim 18\text{-}\sim 180$ fs long @ 800 nm US\$19,000

GRENOUILLE Model 8-50-USB Ultrashort-pulse spatio-temporal measurement device.
Measures 700-1100 nm pulses $\sim 50\text{-}\sim 500$ fs long @ 800 nm US\$19,000

GRENOUILLE Model 8-300-USB Ultrashort-pulse spatio-temporal measurement device.
Measures 700-1100 nm pulses ~ 300 fs- ~ 2 ps long @ 800 nm US\$22,000

FROG Model 8-500-USB Ultrashort-pulse spatio-temporal measurement device.
Measures 700-900 nm pulses ~ 500 fs- ~ 5 ps long @ 800 nm US\$22,000

GRENOUILLE Model 10-100-USB Ultrashort-pulse spatio-temporal measurement device.
Measures 900-1100 nm pulses ~ 100 fs- ~ 1 ps long @ 1050 nm US\$19,000

FROG Model 10-500-USB Ultrashort-pulse spatio-temporal measurement device.
Measures 900-1100 nm pulses ~ 500 fs- ~ 5 ps long @ 800 nm US\$22,000

GRENOUILLE Model 15-40-USB Ultrashort-pulse spatio-temporal measurement device.
Measures 1320-1620 nm pulses ~ 40 fs- ~ 400 fs long @ 1550 nm US\$21,000

GRENOUILLE Model 15-100-USB Ultrashort-pulse spatio-temporal measurement device.
Measures 1320-1620 nm pulses ~ 100 fs- ~ 1 ps long @ 1550 nm .. US\$21,000

Software for retrieving pulses

Mesa Photonics' VideoFROG real-time pulse-retrieval
and spatial-profile software US\$2,500

Femtosoft Technology's QuickFROG real-time pulse-retrieval
and spatial-profile software US\$2,500

Note that these devices usually measure somewhat shorter pulses at their longest wavelengths and somewhat longer pulses at their shortest wavelengths. Refer to the brochure/spec sheet for specific values on www.swampoptics.com
When ordering, customer to supply a shipping account number (FedEx or UPS, but not DHL) for shipping and handling; FOB Origin. Delivery is 2-4 weeks upon receipt of a Purchase Order FAXed to 866-855-4518.

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Cart Contents

Remove	Product(s)	Qty. (Must select "Update" button after change)	Total
<input type="checkbox"/>	Tektronix TDS3054B 500 MHz 4 Ch Digital Oscilloscope	1	\$9,995.00

Sub-Total:\$9,995.00

A minimum order amount of \$25 is required in order to checkout.

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Item	Image	Partnumber	Ship Date	Quantity	Price	Subtotal	Remove
1		DET10A - WEIGHT(Total): 1.20 lbs High-Speed Si Detector, 200-1100 nm, 1 ns Rise Time	Today	6	\$132.00	\$792.00	<input type="checkbox"/>
TOTAL:						\$792.00	

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NOTE: This will remove the items from your Shopping Cart.

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Items remain in your basket for 24 hours. Make sure that you are logged on if you cannot view your basket contents.

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Thorlabs - Newton, New Jersey
Sales: 1-973-579-7227
Support: 1-973-300-3000



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Fritz, David M.

From: Del Mar Photonics [sergey@dmphotonics.com]
Sent: Tuesday, November 14, 2006 9:05 PM
To: Fritz, David M.
Subject: Re: Rincon SS single shot cross-correlator

Hi David,

List price for our single shot cross correlator is \$42,000.- Cross-correlator Rincon-SS
Wavelength, nm 700-1500
Dynamic range 108 (window 104)
Temporal range, ps 950

Rincon-SS works in single-shot mode with time windows providing quick measurements of cross-correlation function.

Can you describe briefly your laser system and requirements? Some custom work can be necessary but that doesn't necessarily means that the price will increase.

If the above specifications and price look acceptable I will send you a formal quote. We can discuss both custom specifications as well as price adjustment for standard model.

Best regards,
Sergey Egorov
Del Mar Photonics
4119 Twilight Ridge
San Diego, CA 92130
tel (858) 755-6727
fax (858) 630-2376
sergey@dmphotonics.com
<http://www.dmphotonics.com/>
<http://www.sciner.com/>

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

From: "Fritz, David M." <dmfritz@slac.stanford.edu>
To: "Del Mar Photonics" <sergey@dmphotonics.com>
Sent: Tuesday, November 14, 2006 1:41 PM
Subject: RE: Rincon SS single shot cross-correlator

> Hi Sergey,
>
> Yes, this is the correct address. Thank you for the reply and I look
> forward to the quotation.
>
> Sincerely,
>
> David Fritz
> LCLS Instrument Scientist
>
> Stanford Linear Accelerator Center
> 2575 Sand Hill Road, MS 43A
> Menlo Park, CA 94025
>
> (650) 926-3779 Phone
> (650) 926-3165 Fax

>
>
>
> -----Original Message-----
> From: Del Mar Photonics [mailto:sergey@dmphotonics.com]
> Sent: Tuesday, November 14, 2006 1:05 PM
> To: Fritz, David M.
> Subject: Rincon SS single shot cross-correlator
>
> Dear Sir,
>
> thank you for your recent call.
>
> I have not been able to reply to you earlier as I was on a demo/customer
> support trip on the East Coast and in Chicago.
>
> This mail is to check if I spelled your e-mail correctly. Please reply
> with a short confirmation.
>
> Best regards,
> Sergey Egorov
> Del Mar Photonics
> 4119 Twilight Ridge
> San Diego, CA 92130
> tel (858) 755-6727
> fax (858) 630-2376
> sergey@dmphotonics.com
> <http://www.dmphotonics.com/>
> <http://www.sciner.com/>
>

1.2.03.02.03 Hutch Optical Table Sytem




LUSI XPP optical support table & Supports
WBS 1.2.3.2.3

Estimator Defever

Description: This represents all the hardware to to located the pump laser optic table for the XPP system (laser hall and hutch tables)

WBS/ Activity ID	DESCRIPTION	Part Number	Material	Man Months	Resource	Hours	QTY	Unit Cost [K\$]	Direct Total	Source/Status of Estimate	Weight each (lb)	Weight total (lb)	Vendor	Note 1	Note 2
	PED														
	Total								\$14.35K						
	<i>Optic table sizing-location-fit-integ; Optic table support</i>														
XPP 1232115	Preliminary				Engineer	71			\$4.08K	langton					
XPP 1232115	Preliminary				Designer	31			\$2.11K	langton					
	tot					102			\$6.19K						
XPP 1232125	Final				Engineer	51			\$2.93K	langton					
XPP 1232125	Final				Designer	29			\$1.97K	langton					
	tot					80			\$4.90K						
	<i>Documentation</i>														
XPP 1232200	Detail				Designer	30			\$2.04K	langton					
XPP 1232205	Checking				Designer	18			\$1.22K	langton					
	MSL														
XPP 04460	Total								\$46.75K						
	5' x 8' x 8"	RS4000-58-8					1	\$ 6,151.00	\$6.15K	vendor website catalog					
	5' x 10' x 18"	RS4000-510-18					2	\$ 10,167.00	\$20.33K	vendor website catalog					
	Table Leg set	RL-2000-					3	\$ 1,264.00	\$3.79K	vendor website catalog					
	Earthquake restraints	ERS97-123.5					3	\$ 656.00	\$1.97K	vendor website catalog					
	Table Connection and Customization						1	\$ 10,000.00	\$10.00K	vendor website catalog					
	Custom Breadboard						1	\$ 4,500.00	\$4.50K	vendor website catalog					

Continue Shopping or begin Secure Checkout.

Quantity	Unit	Product	Description	Availability	Total Price	
1	EA	ERS97-123.5	 EARTHQUAKE RESTRAINT SYSTEM see product detail	1 on 4/16/08	656.00 USD	remove
1	EA	RS4000-58-8	 TABLE TOP see product detail	1 on 3/26/08	6,151.00 USD	remove
1	EA	RS4000-510-18	 TABLE TOP see product detail	1 on 3/26/08	10,167.00 USD	remove
1	EA	RL-2000-419.5	 SUPPORT SYSTEM-LAB LEG see product detail	1 on 3/26/08	1,264.00 USD	remove

Order Subtotal: 18,238.00 USD

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1.2.03.02.04 Optical Experiments

LUSI "XPP Optical experiments"
WBS 1.2.3.2.4

Estimator

Fritz

ACTIVITY ID	DESCRIPTION	Part Number	Material	Man Months	Resource	Hours	QTY	Unit Cost [\$]	Direct Total	Source/Status of Estimate	Weight each (lb)	Weight total (lb)	Vendor	Note 1	Note 2
	MSL														
XPP 04620	Total								\$21.84K						
	High Resolution Spectrometer	QE65000					1	\$ 10,499.00	\$10.50K	Vendor Catalog			Ocean Optics		
	Lock in Amplifier	SR850					1	\$ 7,500.00	\$7.50K	Vendor Catalog			SRS		
	Balanced Detector	2017					1	\$ 1,795.00	\$1.80K	Vendor Catalog			New Focus		
	Optical Chopper	3501					1	\$ 2,000.00	\$2.00K	Vendor Catalog			New Focus		
	Chopper Wheel	3512					1	\$ 47.00	\$0.05K	Vendor Catalog			New Focus		



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3 items in cart | Sub-Total \$3,767.00

SHOPPING CART

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IMAGE	MODEL NUMBER	NAME	AVAILABILITY	QUANTITY	PRICE	ITEM TOTAL	REMOVE
	2017	125-kHz Auto-Balanced Receiver	 In stock	1	\$1,795.00	\$1,795.00	<input type="checkbox"/>
	3501	Optical Chopper	 Available in 1 week	1	\$1,925.00	\$1,925.00	<input type="checkbox"/>
	3512	Chopper Wheel	 In stock	1	\$47.00	\$47.00	<input type="checkbox"/>



Sub-Total: \$3,767.00

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Sales Tax Exempt and Purchase Order information available.

February 4, 2008

Item Code	Description	Retail Price
PX-2-FIRMWARE	USB2000 programmed for use with PX-2	\$0.00
QBIF200-MIXED	200um Premium Bifurcated Fiber, MIXED, 2m (BTO)	\$314.00
QBIF200-UV/VIS	200um Premium Bifurcated Fiber, UV/VIS, 2m (BTO)	\$314.00
QBIF200-VIS/BX	200um Premium Bifurcated Fiber, VIS/NIR, 2m, BX Jacket (BTO)	\$314.00
QBIF200-VIS/NIR	200um Premium Bifurcated Fiber, VIS/NIR, 2m (BTO)	\$314.00
QBIF400-MIXED	400um Premium Bifurcated Fiber, MIXED, 2m (BTO)	\$346.00
QBIF400-UV/VIS	400um Premium Bifurcated Fiber, UV/VIS, 2m (BTO)	\$346.00
QBIF400-VIS/BX	600um Premium Bif. Fiber, VIS/NIR, 2 m, BX Jacket (BTO)	\$346.00
QBIF400-VIS/NIR	400um Premium Bifurcated Fiber, VIS/NIR, 2m (BTO)	\$346.00
QBIF50-UV/VIS	50um Premium Bifurcated Fiber, UV/VIS, 2m (BTO)	\$314.00
QBIF50-VIS/NIR	50um Premium Bifurcated Fiber, VIS/NIR, 2m (BTO)	\$314.00
QBIF600-UV/BX	600um Premium Bif.Fiber, UV/VIS, 2 m, BX Jacket (BTO)	\$388.00
QBIF600-UV/VIS	600um Premium Bifurcated Fiber, UV/VIS, 2m (BTO)	\$388.00
QBIF600-VIS/BX	600um Premium Bif. Fiber, VIS/NIR, 2m, BX Jacket (BTO)	\$388.00
QBIF600-VIS/NIR	600um Premium Bifurcated Fiber, VIS/NIR, 2m (KB)	\$388.00
QBOX	Plastic storage case for optical fiber	\$8.00
QCL-UV	AR-Coated Collimating Lens for CUV-QPOD products	\$390.00
QD-CS-1V	Vial of Core Shell EviDots: specify wavele	\$449.00
QD-CS-VIS	Pick 6 Vials Core Shell: 490, 520, 540, 560,580, 600 or 620	\$699.00
QD-T2-MP-1V	Vial of Carboxyl EviTags: specify wavelength	\$399.00
QD-T2-MP-A-1V	Vial of Amine EviTags: specify wavelength	\$399.00
QE65000	QE65000 Spectrometer w/scientific-grade detector	\$10,499.00
QFH	Filter Holder, 12.5mm Diameter Filters, for CUV-QPOD product	\$199.00
QIL-UV	AR-Coated Imaging Lens Doublet for CUV-QPOD products	\$587.00
QMP	Spherical Mirror Plug for CUV-QPOD products	\$270.00
QP1000-2-UV/BX	1000um Premium Fiber, UV/VIS, 2m, BX Jacket (KB)	\$377.00
QP1000-2-UV/VIS	1000um Premium Fiber, UV/VIS, 2m (KB)	\$377.00
QP1000-2-VIS/BX	1000um Premium Fiber, VIS/NIR, 2m, BX Jacket (BTO)	\$377.00
QP1000-2-VIS/NI	1000um Premium Fiber, VIS/NIR, 2m (KB)	\$377.00
QP100-2-UV/BX	100um Premium Fiber, UV/VIS, 2m, BX Jacket (BTO)	\$157.00
QP100-2-UV/VIS	100um Premium Fiber, UV/VIS, 2m (KB)	\$158.00
QP100-2-VIS/BX	100um Premium Fiber, VIS/NIR, 2m, BX Jacket (BTO)	\$157.00
QP100-2-VIS/NIR	100um Premium Fiber, VIS/NIR, 2m (KB)	\$158.00
QP115-025-XSR	115um Premium Fiber, XSR, 25cm (BTO)	\$125.00
QP115-1-XSR	115um fiber, XSR, 1m (BTO)	\$157.00
QP115-2-XSR	115um fiber, extreme solarization-resistant, 2m (BTO)	\$188.00
QP200-2-SR/BX	200um Premium Fiber, SR, 2m, BX Jacket (KB)	\$188.00
QP200-2-UV/BX	200um Premium Fiber, UV/VIS, 2m BX Jacket (KB)	\$157.00
QP200-2-UV/VIS	200um Premium Fiber, UV/VIS, 2m (KB)	\$158.00
QP200-2-VIS/BX	200um Premium Fiber, VIS/NIR, 2m, BX Jacket (KB)	\$157.00
QP200-2-VIS/NIR	200um Premium Fiber, VIS/NIR, 2m (KB)	\$158.00
QP230-0.25-XSR	235um Fiber, extreme solarization-resistant, 25cm (BTO)	\$157.00
QP230-1-XSR	235um Fiber, extreme solarization-resistant, 1m (BTO)	\$188.00
QP230-2-XSR	235um Fiber, extreme solarization-resistant, 2m (KB)	\$209.00
QP300-1-SR	300um Premium Fiber, solarization-resistant, 1m (BTO)	\$158.00
QP300-1-SR/BX	300um Premium Fiber, solarization-resistant, 1m (BTO)	\$158.00
QP400-025-SR	400um Premium Fiber, solarization-resistant, 25cm (KB)	\$125.00
QP400-025-SR/BX	400um Premium , solarization-resistant, 25cm, BX Jacket (BTO)	\$125.00

Prices in U.S Dollars, EXW Dunedin, Florida; All prices subject to change without notice

Prices marked with (*) are subject to changes in exchange rates.



Stanford Research Systems

1290-D Reamwood Ave., Sunnyvale CA 94089

Phone: 408-744-9040 FAX: 408-744-9049

email: info@thinksrs.com Web: www.thinksrs.com

U.S.A. Price List - October 2007

FFT Spectrum Analyzers

SR760	Single-channel FFT spectrum analyzer	\$4950
SR770	Single-channel FFT spectrum analyzer (w/ source)	\$6500
O760H	Carrying handle for SR760 and SR770	\$100
O760RM	Rack mount kit for SR760 and SR770	\$85
SR780	Dual-channel dynamic signal analyzer	\$9950
SR785	Dual-channel dynamic signal analyzer	\$11950
O780M1	8 MSample memory for SR780 and SR785	\$800
O780RM	Rack mount kit for SR780 and SR785	\$85
CT100	SRS instrument cart	\$850

Synthesized Function Generators

DS335	3 MHz function generator	\$1095
01	GPIB and RS-232 interfaces	\$495
02	2 ppm TCXO timebase	\$350
DS340	15 MHz function/arb generator	\$1295
01	GPIB & RS-232 interfaces, arb. software	\$495
02	2 ppm TCXO timebase	\$350
DS345	30 MHz function/arb generator	\$1595
01	GPIB & RS-232 interfaces, arb. software	\$495
02	10 ppb high stability OCXO timebase	\$650
O345RMD	Double rack mount kit for DS3XX	\$85
O345RMS	Single rack mount kit for DS3XX	\$85
DS360	Ultra-low distortion function generator	\$2795
01	Digital audio output	\$995
J360RM	Rack mount kit	\$85

Synthesized Clock Generator

CG635	Synthesized clock generator	\$2490
01	PRBS w/ comp. LVDS on SMA	\$550
02	OCXO timebase	\$650
03	Rubidium timebase	\$1650
CG640	CMOS (+5 Vcc) to 100 MHz receiver	\$250
CG641	CMOS (+3.3 Vcc) to 500 MHz receiver	\$250
CG642	CMOS (+2.5 Vcc) to 500 MHz receiver	\$250
CG643	PECL (+5 Vcc) to 2050 MHz receiver	\$250
CG644	PECL (+3.3 Vcc) to 2050 MHz receiver	\$250
CG645	PECL (+2.5 Vcc) to 2050 MHz receiver	\$250
CG646	RF (+7 dBm) to 2050 MHz receiver	\$250
CG647	CML/NIM to 2050 MHz receiver	\$250
CG648	ECL to 2050 MHz receiver	\$250
CG649	LVDS to 2050 MHz receiver	\$250
O635RMD	Double rack mount kit	\$85
O635RMS	Single rack mount kit	\$85

LCR Meters

SR715	10 kHz LCR meter (with RS-232)	\$995
SR720	100 kHz meter w/ RS-232, GPIB & Handler interface	\$1495
SR726	Kelvin clips	\$300
SR727	Surface mount tweezers	\$300
O727RT	2 pairs of replacement tips for SR727	\$45
SR728	Four-wire BNC adapter	\$200
O715RAA	Replacement axial adapters (2 pair)	\$35
O715RRF	Replacement radial fixture	\$75

Time Interval and Frequency Counters

SR620	Time interval/frequency counter (w/ rack mount)	\$4950
01	2 ppb high stability OCXO timebase	\$950
625	SR620 w/ rubidium timebase (w/ rack mount)	\$12500

Frequency Standards / Oscillators

FS725	Benchtop rubidium frequency standard	\$2495
01	Distribution amplifier - 6 additional outputs	\$300
02	Distribution amplifier - 12 additional outputs	\$600
03	Distribution amplifier - 18 additional outputs	\$900
O725RMD	Double rack mount kit for FS725	\$85
O725RMS	Single rack mount kit for FS725	\$85
PRS10	10 MHz rubidium oscillator	\$1495
PRBB	Breakout connector board	\$150
PRPS	24 VDC switching power supply	\$150
PRHS	Benchtop heat sink	\$50
PRMC	D-type mating connector	\$20
SC10	10 MHz ovenized oscillator (base price, qty. 100)	\$250
FS700	LORAN-C freq. std. (with GPIB & rack mount)	\$2950
01	Low phase noise oscillator	\$450
02	RS-232 computer interface	\$350
O700ANT	Replacement antenna	\$250
O700LNG	Lightning protection module	\$100
FS710	10 MHz AGC distribution amplifier (7 channel)	\$1000

Thermocouple Monitor

SR630	16-channel thermocouple monitor	\$1495
O630KF1	K-type thermocouples, 5 ft., fiberglass, qty. 5	\$50
O630KF2	K-type thermocouples, 10 ft., fiberglass, qty. 5	\$75
O630KT1	K-type thermocouples, 5 ft., teflon, qty. 5	\$50
O630KT2	K-type thermocouples, 10 ft., teflon, qty. 5	\$75
O630RMD	Double rack mount kit	\$85
O630RMS	Single rack mount kit	\$85

Dual Channel Programmable Filters

SR640	Two-channel low pass filter (w/ rack mount)	\$3295
SR645	Two-channel high pass filter (w/ rack mount)	\$3295
SR650	One high, one low pass filter (w/ rack mount)	\$3295
01	High current output for SR6XX filters	\$150

Digital Delay / Pulse Generator

DG535	Digital delay / pulse generator (with GPIB)	\$3995
02	+/-32 volt rear panel outputs	\$650
03	1 ppm TCXO timebase	\$350
06	Trigger inhibit input	\$250
O4A	100 ps rise time module	\$250
O4B	100 ps fall time module	\$250
O4C	Bias Tee (used with opt. 02 & O4A or O4B)	\$100
05	Dual rack mount tray	\$150

Lock-In Amplifiers

SR510	Single phase lock-in (w/ RS-232 & rack mount)	\$2495
SR530	Dual phase lock-in (w/ RS-232 & rack mount)	\$2995
01	GPIB computer interface	\$895
SR810	DSP single phase lock-in (with rack mount)	\$3850
SR830	DSP dual phase lock-in (with rack mount)	\$4500
SR844	200 MHz lock-in (with rack mount)	\$8450
SR850	DSP dual phase lock-in (with rack mount)	\$7500
O850H	Carrying handle kit	\$100

1.2.03.02.05 Laser Containment System

LUSI "XPP" LASER CONTAINMENT
WBS 1.2.3.2.5

Estimator Fritz / langton

Description: hardware for csafety containment system for pump laserLaser Containment System

WBS/ Activity ID	DESCRIPTION	Part Number	Material	Man Months	Resource	Hours	QTY	Unit Cost [\$]	Direct Total	Source/Status of Estimate	Weight each (lb)	Weight total (lb)	Vendor	Note 1	Note 2
	PED														
	Sub Total								\$15.91K						
XPP 04760	preliminary design				Designer	114			\$7.75K	langton					
XPP 04840	finalize design				Designer	40			\$2.72K	langton					
XPP 04860	documentation-check-rel				Designer	80			\$5.44K	langton					
	MSL														
XPP 04980	Sub Total								\$30.00K						
	Tools						1	\$ 5,000.00	\$5.00K	previous SLAC PO					
	Hardware						1	\$ 5,000.00	\$5.00K						
	Piece Parts						1	\$ 10,000.00	\$10.00K						
	Windows						1	\$ 5,000.00	\$5.00K						
	Interlocks						1	\$ 5,000.00	\$5.00K						

0000122959 Search Req

Approved

Type: **Regular Purchase Requisition**

Requisition: **0000122959**

Date: 02/16/06

Buyer: Villanueva, Vincent C.

Entered by: MOMENTUM

All Comments

Requestor: Miahnahri, Alireza Alan

Suggested Vendor: Port Plastics Inc

Item	Qty	Unit \$	Unit	Est Cost	Description	P.O.	Charge No.	Delv To	PO Cost
1	18	21.420	EA	385.560	LCLS - PER SLAC DRAWING # PF-380-901-43	61109	9242130	280B -261	1,020.240
2	4	21.420	EA	85.680	LCLS - PER SLAC DRAWING # PF-380-901-44	61109	9242130	280B -261	291.520
3	2	42.800	EA	85.600	LCLS - PER SLAC DRAWING # PF-380-901-45	61109	9242130	280B -261	109.320
4	2	71.420	EA	142.840	LCLS - PER SLAC DRAWING # PF-380-901-46	61109	9242130	280B -261	465.240
5	2	171.800	EA	343.600	LCLS - PER SLAC DRAWING # PF-380-901-47	61109	9242130	280B -261	127.200
6	2	85.700	EA	171.400	LCLS - PER SLAC DRAWING # PF-380-901-48	61109	9242130	280B -261	204.940
7	2	99.100	EA	198.200	LCLS - PER SLAC DRAWING # PF-380-901-49	61109	9242130	280B -261	208.460
8	2	114.280	EA	228.560	LCLS - PER SLAC DRAWING #	61109	9242130	280B -261	166.580

PF-380-901-50											
9	2	42.800	EA	85.600	LCLS - PER SLAC DRAWING # PF-380-901-51	61109	9242130	280B -261	113.360		
10	36	8.500	EA	306.000	LCLS - REQUIREMNT BAG AND TAG	61109	9242130	280B -261	251.250		
CONTACT VENDOR TO SEE IF THEY CAN PUT A NUMBER ON THE SHEET WITH NO BAGGING REQUIRED IF IT IS CHEAPER											
Totals				\$2,033.040					\$2,958.110		

Purchase Order: 61039

Dispatched
PO Not
Received

TYPE: Regular Purchase Order
 PO Date: 2/17/2006
 Buyer: CRUMB
 Comment: THIS ORDER WAS CANCELLED AND PUT BACK IN REQ. SELECTION TO CHANGE
 VENDOR NAME. VCV 2/22/06.
 Approved Vendor: Port Plastics Inc

PO Line	Req Line	Qty	Unit Price	Unit	P.O. Cost	Description	Due Date	Charge No.	Location	Date Received
1 X	<u>1</u>	18	56.68	EA	1,020.24	LCLS - PER SLAC DRAWING # PF-380-901-43	3/3/2006	9242130	280B -261	N/A
2 X	<u>2</u>	4	72.88	EA	291.52	LCLS - PER SLAC DRAWING # PF-380-901-44	3/3/2006	9242130	280B -261	N/A
3 X	<u>3</u>	2	54.66	EA	109.32	LCLS - PER SLAC DRAWING # PF-380-901-45	3/3/2006	9242130	280B -261	N/A
4 X	<u>4</u>	4	71.42	EA	285.68	LCLS - PER SLAC DRAWING # PF-380-901-88	3/3/2006	9242130	280B -261	N/A
5 X	<u>5</u>	2	63.60	EA	127.20	LCLS - PER SLAC DRAWING # PF-380-901-47	3/3/2006	9242130	280B -261	N/A
6 X	<u>6</u>	2	102.47	EA	204.94	LCLS - PER SLAC DRAWING # PF-380-901-48	3/3/2006	9242130	280B -261	N/A

7 X	<u>7</u>	2	104.23	EA	208.46	LCLS - PER SLAC DRAWING # PF-380-901-49	3/3/2006	9242130	280B -261	N/A
8 X	<u>8</u>	2	83.29	EA	166.58	LCLS - PER SLAC DRAWING # PF-380-901-50	3/3/2006	9242130	280B -261	N/A
9 X	<u>9</u>	2	56.68	EA	113.36	LCLS - PER SLAC DRAWING # PF-380-901-51	3/3/2006	9242130	280B -261	N/A
10 X	<u>10</u>	1	240.00	EA	240.00	LCLS - LABOR FOR ABOVE PARTS	3/3/2006	9242130	280B -261	N/A

Purchase Order: 61109

Dispatched
PO Not
Received

TYPE: Regular Purchase Order
 PO Date: 2/22/2006
 Buyer: CRUMB
 Approved Vendor: Tap Plastics Inc

PO Line	Req Line	Qty	Unit Price	Unit	P.O. Cost	Description	Due Date	Charge No.	Location	Date Received
1	<u>1</u>	18	56.68	EA	1,020.24	LCLS - PER SLAC DRAWING # PF-380-901-43	3/3/2006	9242130	280B -261	N/A
2	<u>2</u>	4	72.88	EA	291.52	LCLS - PER SLAC DRAWING # PF-380-901-44	3/3/2006	9242130	280B -261	N/A
3	<u>3</u>	2	54.66	EA	109.32	LCLS - PER SLAC DRAWING # PF-380-901-45	3/3/2006	9242130	280B -261	N/A
4	<u>4</u>	4	116.31	EA	465.24	LCLS - PER SLAC DRAWING # PF-380-901-88	3/3/2006	9242130	280B -261	N/A
5	<u>5</u>	2	63.60	EA	127.20	LCLS - PER SLAC DRAWING # PF-380-901-47	3/3/2006	9242130	280B -261	N/A
6	<u>6</u>	2	102.47	EA	204.94	LCLS - PER SLAC DRAWING # PF-380-901-48	3/3/2006	9242130	280B -261	N/A
7	<u>7</u>	2	104.23	EA	208.46	LCLS - PER SLAC DRAWING # PF-380-901-49	3/3/2006	9242130	280B -261	N/A
8	<u>8</u>	2	83.29	EA	166.58	LCLS - PER SLAC DRAWING # PF-380-901-50	3/3/2006	9242130	280B -261	N/A

9	<u>9</u>	2	56.68	EA	113.36	LCLS - PER SLAC DRAWING # PF-380-901-51	3/3/2006	9242130	280B -261	N/A
10	<u>10</u>	1	251.25	EA	251.25	LCLS - LABOR FOR ABOVE PARTS	2/17/2006	9242130	280B -261	N/A

Voucher Information:

Vndr	Invoice	Invoice Date	Vchr	Acctg Date	PO ID	PO Line	Description	Chrg No.	Qty	Amount
<u>2219</u>	326829	3/8/2006	210112	3/30/2006	61109	1.1	LCLS - PER SLAC DRAWING # PF-3	9242130	18	\$1,020.24
<u>2219</u>	326829	3/8/2006	210112	3/30/2006	61109	2.1	LCLS - PER SLAC DRAWING # PF-3	9242130	4	\$291.52
<u>2219</u>	326829	3/8/2006	210112	3/30/2006	61109	3.1	LCLS - PER SLAC DRAWING # PF-3	9242130	2	\$109.32
<u>2219</u>	326829	3/8/2006	210112	3/30/2006	61109	4.1	LCLS - PER SLAC DRAWING # PF-3	9242130	4	\$285.68
<u>2219</u>	326829	3/8/2006	210112	3/30/2006	61109	5.1	LCLS - PER SLAC DRAWING # PF-3	9242130	2	\$127.20
<u>2219</u>	326829	3/8/2006	210112	3/30/2006	61109	6.1	LCLS - PER SLAC DRAWING # PF-3	9242130	2	\$204.94
<u>2219</u>	326829	3/8/2006	210112	3/30/2006	61109	7.1	LCLS - PER SLAC DRAWING # PF-3	9242130	2	\$208.46
<u>2219</u>	326829	3/8/2006	210112	3/30/2006	61109	8.1	LCLS - PER SLAC DRAWING # PF-3	9242130	2	\$166.58
<u>2219</u>	326829	3/8/2006	210112	3/30/2006	61109	9.1	LCLS - PER SLAC DRAWING # PF-3	9242130	2	\$113.36
<u>2219</u>	326829	3/8/2006	210112	3/30/2006	61109	10.1	LCLS - LABOR FOR	9242130	0.001	\$240.00

ABOVE
PARTS

Totals **38** **\$2,767.30**

Payment Information:

Voucher	Vendor	Payment Method	Date	Paid Check#	Amount
210112	<u>2219</u>	System Check	4/7/2006	038423	\$2,767.30
Totals					\$2,767.30

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

0000122964 Search Req

Complete

Type: **Regular Purchase Requisition**

Requisition: **0000122964**

Date: 02/16/06

Buyer: Villanueva, Vincent C.

Entered by: MOMENTUM

All Comments

Requestor: Miahnahri, Alireza Alan

Suggested Vendor: G.A. Wirth

Item	Qty	Unit \$	Unit	Est Cost	Description	P.O.	Charge No.	Dlvr To	PO Cost
1	4	78.250	EA	313.000	LCLS, EXTRUDED PROFILE 1.5 X 1.5, 1515-7010-156.5	61041	9242130	280B -261	313.000
80/20 IS MANUFACTURER OF THIS ITEM									
2	26	38.000	EA	988.000	LCLS, EXTRUDED PROFILE 1.5X1.5 CUT TO 76 INCHES, 1515-7010-76	61041	9242130	280B -261	988.000
ITEM MANUFACTURER 80/20									
3	12	44.250	EA	531.000	LCLS, EXTRUDED PROFILE, 1515-7010-88.5	61041	9242130	280B -261	716.000
MANUFACTURER 80/20									
4	36	6.000	EA	216.000	LCLS, EXTRUDED PROFILE 1.5X1.5, 1515-7010-12	61041	9242130	280B -261	216.000
80/20 MANUFACTURER									
5	24	12.000	EA	288.000	LCLS, EXTRUDED PROFILE 1.5X1.5, 1515-7010-24	61041	9242130	280B -261	288.000
80/20 MANUFACTURER									
6	42	12.000	EA	504.000	LCLS, EXTUDED PROFILE 1.5X1.5, 1515-7010-24	61041	9242130	280B -261	504.000
LCLS, 80/20 MANUFACTURER									

7	4	39.500	EA	158.000	LCLS - EXTRUDED PROFILE 1.5X1.5, 1515-7010-79	61041	9242130	280B -261	158.000
MANUFACTURER 80/20									
8	2	41.000	EA	82.000	LCLS - EXTRUDED PROFILE 1.5X1.5, 1515-7010-82	61041	9242130	280B -261	82.000
MANUFACTURER 80/20									
9	10	45.000	EA	450.000	LCLS - EXTRUDED PROFILE 1.5X.1.5, 1515-7010-90	61041	9242130	280B -261	450.000
MANUFACTURER 80/20									
10	6	14.000	EA	84.000	LCLS - EXTRUDED PROFILE 1.5X1.5, 1515-7010-28	61041	9242130	280B -261	84.000
MANUFACTURER 80/20									
11	4	35.250	EA	141.000	LCLS - EXTRUDED PROFILE 1.5X1.5, 1515-7010-70.5	61041	9242130	280B -261	141.000
MANUFACTURER 80/20									
12	4	13.250	EA	53.000	LCLS - EXTRUDED PROFILE 1.5X1.5, 1515-7010-26.5	61041	9242130	280B -261	53.000
MANUFACTURER 80/20									
13	2	46.500	EA	93.000	LCLS - EXTRUDED PROFILE 1.5X1.5, 1515-7010-93	61041	9242130	280B -261	93.000
MANUFACTURER 80/20									
14	1	27.500	EA	27.500	LCLS - EXTRUDED PROFILE 1.5X1.5, 1515-7010-55	61041	9242130	280B -261	27.500
MANUFACTURER 80/20									
15	10	15.960	EA	159.600	LCLS - LOWER TRACK, 2220-76	61041	9242130	280B -261	159.600
MANUFACTURER 80/20									

16	1	17.220	EA	17.220	LCLS - LOWER TRACK, 2220-82	61041	9242130	280B -261	17.220
MANUFACTURER 80/20									
17	2	14.800	EA	29.600	LCLS - LOWER TRACK, 2221-70.5	61041	9242130	280B -261	23.970
MANUFACTURER 80/20									
18	10	15.960	EA	159.600	LCLS - UPPER TRACK, 2210-76	61041	9242130	280B -261	159.600
MANUFACTURER 80/20									
19	1	17.220	EA	17.220	LCLS - UPPER TRACK, 2210-82	61041	9242130	280B -261	17.220
MANUFACTURER 80/20									
20	2	14.800	EA	29.600	LCLS - UPPER TRACK, 2211-70.5	61041	9242130	280B -261	23.970
MANUFACTURER, 80/20									
21	37	18.190	EA	673.030	LCLS - PANEL STIFFNER, 2424-53.5	61041	9242130	280B -261	178.340
MANUFACTURER 80/20									
22	37	18.190	EA	673.030	LCLS - PANEL STIFFNER, 2429-53.5	61041	9242130	280B -261	277.130
MANUFACTURER 80/20									
23	1704	.050	EA	85.200	LCLS - DROP-IN-NUT 10-SERIES 1/4-20	61041	9242130	280B -261	340.800
MANUFACTURER 80/20									
24	44	7.600	EA	334.400	LCLS - T-JOINIG PLATE 5 HOLES, 4480	61041	9242130	280B -261	334.400
MANUFACTURER, 80/20									
25	38	6.950	EA	264.100	LCLS - L-JOINING PLATE 5 HOLES, 4481, 15S	61041	9242130	280B -261	264.100
MANUFACTURER 80/20									
26	150	4.050	EA	607.500	LCLS - INSIDE CORNER BRKT 4 HOLES, 4301, 15s hole i.c.b	61041	9242130	280B -261	607.500
MANUFACTURER 80/20									

27	48	8.250	EA	396.000	LCLS - 90 DEG JOINING PLATE 7 HOLES, 4352-15S	61041	9242130	280B-261	396.000
MANUFACTURER 80/20									
28	44	7.750	EA	341.000	LCLS - FLOOR MOUNT BASE PLATE 10 SCR ECON, 2414	61041	9242130	280B-261	341.000
MANUFACTURER 80/20									
29	1730	.210	EA	363.300	LCLS - 1/4-20 UNC-2A X 5/8 BUTTON HD SOC HD SST, 3063	61041	9242130	280B-261	363.300
MANUFACTURER 80/20									
30	1506	.060	EA	90.360	LCLS - WASHER FLAT NARROW 1/4, 3258	61041	9242130	280B-261	90.360
MANUFACTURER 80/20									
31	12	9.950	EA	119.400	LCLS - ADJUSTABLE HINGE, 2080	61041	9242130	280B-261	143.400
MANUFACTURER 80/20									
32	8	6.500	EA	52.000	LCLS - MAGNETIC DOOR CATCH-SET, 2090	61041	9242130	280B-261	52.000
MANUFACTURER 80/20									
33	8	4.200	EA	33.600	LCLS - STEEL DOOR HANDLE	61041	9242130	280B-261	33.600
MANUFACTURER 80/20									
34	177	1.850	EA	327.450	LCLS - CUT TO LENGTH CHARGE	61041	9242130	280B-261	327.450
THIS LINE ITEM IS FOR CUTTING TUBES TO THE LENGTH									
35	20	10.000	EA	200.000	LCLS - 6 HOLE JOINING PLATE, 4366	61041	9242130	280B-261	111.000
MANUFACTURER 80/20									
Totals				\$8,901.710					\$8,375.460

Purchase Order: 61041

Complete
Fully Received
Matched/Complete

TYPE: Regular Purchase Order
PO Date: 2/22/2006

Buyer: CRUMB
 Approved Vendor: G.A. Wirth

PO Line	Req Line	Qty	Unit Price	Unit	P.O. Cost	Description	Due Date	Charge No.	Location	Date Received
1	<u>3</u>	12	44.25	EA	531.00	LCLS, EXTRUDED PROFILE, 1515-7010-88.5	3/10/2006	9242130	280B -261	03/06/06
						MANUFACTURER 80/20				
2	<u>1</u>	4	78.25	EA	313.00	LCLS, EXTRUDED PROFILE 1.5 X 1.5, 1515-7010-156.5	3/10/2006	9242130	280B -261	03/06/06
						80/20 IS MANUFACTURER OF THIS ITEM				
3	<u>2</u>	26	38.00	EA	988.00	LCLS, EXTRUDED PROFILE 1.5X1.5 CUT TO 76 INCHES, 1515-7010-76	3/10/2006	9242130	280B -261	03/06/06
						ITEM MANUFACTURER 80/20				
4	<u>4</u>	36	6.00	EA	216.00	LCLS, EXTRUDED PROFILE 1.5X1.5, 1515-7010-12	3/10/2006	9242130	280B -261	03/06/06
						80/20 MANUFACTURER				
5	<u>5</u>	24	12.00	EA	288.00	LCLS, EXTRUDED PROFILE 1.5X1.5, 1515-7010-24	3/10/2006	9242130	280B -261	03/06/06
						80/20 MANUFACTURER				
6	<u>6</u>	42	12.00	EA	504.00	LCLS, EXTUDED PROFILE 1.5X1.5, 1515-7010-24	3/10/2006	9242130	280B -261	03/06/06
						LCLS, 80/20 MANUFACTURER				
7	<u>7</u>	4	39.50	EA	158.00	LCLS - EXTRUDED PROFILE 1.5X1.5, 1515-7010-79	3/10/2006	9242130	280B -261	03/06/06
						MANUFACTURER 80/20				
8	<u>8</u>	2	41.00	EA	82.00	LCLS - EXTRUDED PROFILE 1.5X1.5, 1515-7010-82	3/10/2006	9242130	280B -261	03/06/06
						MANUFACTURER 80/20				
9	<u>9</u>	10	45.00	EA	450.00	LCLS - EXTRUDED PROFILE 1.5X1.5, 1515-7010-90	3/10/2006	9242130	280B -261	03/06/06
						MANUFACTURER 80/20				
10	<u>10</u>	6	14.00	EA	84.00	LCLS - EXTRUDED PROFILE 1.5X1.5, 1515-7010-28	3/10/2006	9242130	280B -261	03/06/06
						MANUFACTURER 80/20				
11	<u>11</u>	4	35.25	EA	141.00	LCLS - EXTRUDED PROFILE 1.5X1.5, 1515-7010-70.5	3/10/2006	9242130	280B -261	03/06/06
						MANUFACTURER 80/20				
12	<u>12</u>	4	13.25	EA	53.00	LCLS - EXTRUDED PROFILE 1.5X1.5, 1515-7010-26.5	3/10/2006	9242130	280B -261	03/06/06
						MANUFACTURER 80/20				
13	<u>13</u>	2	46.50	EA	93.00	LCLS - EXTRUDED PROFILE 1.5X1.5, 1515-7010-93	3/10/2006	9242130	280B -261	03/06/06
						MANUFACTURER 80/20				
14	<u>14</u>	1	27.50	EA	27.50	LCLS - EXTRUDED PROFILE 1.5X1.5, 1515-7010-55	3/10/2006	9242130	280B -261	03/06/06

	MANUFACTURER 80/20									
15	<u>15</u>	10	15.96	EA	159.60	LCLS - LOWER TRACK, 2220-76	3/10/2006	9242130	280B -261	03/06/06
	MANUFACTURER 80/20									
16	<u>16</u>	1	17.22	EA	17.22	LCLS - LOWER TRACK, 2220-82	3/10/2006	9242130	280B -261	03/06/06
	MANUFACTURER 80/20									
17	<u>17</u>	2	11.99	EA	23.97	LCLS - LOWER TRACK, 2220-70.5	3/10/2006	9242130	280B -261	03/06/06
	MANUFACTURER 80/20									
18	<u>18</u>	10	15.96	EA	159.60	LCLS - UPPER TRACK, 2210-76	3/10/2006	9242130	280B -261	03/06/06
	MANUFACTURER 80/20									
19	<u>19</u>	1	17.22	EA	17.22	LCLS - UPPER TRACK, 2210-82	3/10/2006	9242130	280B -261	03/06/06
	MANUFACTURER 80/20									
20	<u>20</u>	2	11.99	EA	23.97	LCLS - UPPER TRACK, 2210-70.5	3/10/2006	9242130	280B -261	03/06/06
	MANUFACTURER, 80/20									
21	<u>21</u>	37	4.82	EA	178.34	LCLS - PANEL STIFFNER, 8575-53.5	3/10/2006	9242130	280B -261	03/06/06
	MANUFACTURER 80/20									
22	<u>22</u>	37	7.49	EA	277.13	LCLS - PANEL STIFFNER, 8570-53.5	3/10/2006	9242130	280B -261	03/06/06
	MANUFACTURER 80/20									
23	<u>23</u>	1704	.20	EA	340.80	LCLS - - T-NUT 15-SERIES 1/4-20 3286	3/10/2006	9242130	280B -261	03/06/06
	MANUFACTURER 80/20									
24	<u>24</u>	44	7.60	EA	334.40	LCLS - T-JOINIG PLATE 5 HOLES, 4480	3/10/2006	9242130	280B -261	03/06/06
	MANUFACTURER, 80/20									
25	<u>25</u>	38	6.95	EA	264.10	LCLS - L-JOINING PLATE 5 HOLES, 4481, 15S	3/10/2006	9242130	280B -261	03/06/06
	MANUFACTURER 80/20									
26	<u>26</u>	150	4.05	EA	607.50	LCLS - INSIDE CORNER BRKT 4 HOLES, 4301, 15s hole i.c.b	3/10/2006	9242130	280B -261	03/06/06
	MANUFACTURER 80/20									
27	<u>27</u>	48	8.25	EA	396.00	LCLS - 90 DEG JOINING PLATE 7 HOLES, 4352-15S	3/10/2006	9242130	280B -261	03/06/06
	MANUFACTURER 80/20									
28	<u>28</u>	44	7.75	EA	341.00	LCLS - FLOOR MOUNT BASE PLATE 10 SCR ECON, 2414	3/10/2006	9242130	280B -261	03/06/06
	MANUFACTURER 80/20									
29	<u>29</u>	1730	.21	EA	363.30	LCLS - 1/4-20 UNC-2A X 5/8 BUTTON HD SOC HD SST, 3063	3/10/2006	9242130	280B -261	03/06/06
	MANUFACTURER 80/20									

30	<u>30</u>	1506	.06	EA	90.36	LCLS - WASHER FLAT NARROW 1/4, 3258	3/10/2006	9242130	280B -261	03/06/06
MANUFACTURER 80/20										
31	<u>31</u>	12	11.95	EA	143.40	LCLS - ADJUSTABLE HINGE, 2080	3/10/2006	9242130	280B -261	03/06/06
MANUFACTURER 80/20										
32	<u>32</u>	8	6.50	EA	52.00	LCLS - MAGNETIC DOOR CATCH-SET, 2090	3/10/2006	9242130	280B -261	03/06/06
MANUFACTURER 80/20										
33	<u>33</u>	8	4.20	EA	33.60	LCLS - STEEL DOOR HANDLE	3/10/2006	9242130	280B -261	03/06/06
MANUFACTURER 80/20										
34	<u>34</u>	177	1.85	EA	327.45	LCLS - CUT TO LENGTH CHARGE	3/10/2006	9242130	280B -261	03/06/06
THIS LINE ITEM IS FOR CUTTING TUBES TO THE LENGTH										
35	<u>35</u>	20	5.55	EA	111.00	LCLS - 6 HOLE JOINING PLATE, 4366	3/10/2006	9242130	280B -261	03/06/06
MANUFACTURER 80/20										
36	<u>3</u>	100	1.85	EA	185.00	LCLS- 80/20 7212 CUTTING CHARGE FOR LINE 15-22	3/10/2006	9242130	280B -261	03/06/06

Voucher Information:

Vndr	Invoice	Invoice Date	Vchr	Acctg Date	PO ID	PO Line	Description	Chrg No.	Qty	Amount
<u>7795</u>	INV100586	2/28/2006	208539	3/7/2006	61041	1.1	LCLS, EXTRUDED PROFILE, 1515-7	9242130	12	\$531.00
<u>7795</u>	INV100586	2/28/2006	208539	3/7/2006	61041	2.1	LCLS, EXTRUDED PROFILE 1.5 X 1	9242130	4	\$313.00
<u>7795</u>	INV100586	2/28/2006	208539	3/7/2006	61041	3.1	LCLS, EXTRUDED PROFILE 1.5X1.5	9242130	26	\$988.00
<u>7795</u>	INV100586	2/28/2006	208539	3/7/2006	61041	4.1	LCLS, EXTRUDED PROFILE 1.5X1.5	9242130	36	\$216.00
<u>7795</u>	INV100586	2/28/2006	208539	3/7/2006	61041	5.1	LCLS, EXTRUDED PROFILE 1.5X1.5	9242130	24	\$288.00
<u>7795</u>	INV100586	2/28/2006	208539	3/7/2006	61041	6.1	LCLS, EXTUDED PROFILE 1.5X1.5,	9242130	42	\$504.00
<u>7795</u>	INV100586	2/28/2006	208539	3/7/2006	61041	7.1	LCLS - EXTRUDED PROFILE	9242130	4	\$158.00

							1.5X1.			
7795	INV100586	2/28/2006	208539	3/7/2006	61041	8.1	LCLS - EXTRUDED PROFILE 1.5X1.	9242130	2	\$82.00
7795	INV100586	2/28/2006	208539	3/7/2006	61041	9.1	LCLS - EXTRUDED PROFILE 1.5X.1	9242130	10	\$450.00
7795	INV100586	2/28/2006	208539	3/7/2006	61041	10.1	LCLS - EXTRUDED PROFILE 1.5X1.	9242130	6	\$84.00
7795	INV100586	2/28/2006	208539	3/7/2006	61041	11.1	LCLS - EXTRUDED PROFILE 1.5X1.	9242130	4	\$141.00
7795	INV100586	2/28/2006	208539	3/7/2006	61041	12.1	LCLS - EXTRUDED PROFILE 1.5X1.	9242130	4	\$53.00
7795	INV100586	2/28/2006	208539	3/7/2006	61041	13.1	LCLS - EXTRUDED PROFILE 1.5X1.	9242130	2	\$93.00
7795	INV100586	2/28/2006	208539	3/7/2006	61041	14.1	LCLS - EXTRUDED PROFILE 1.5X1.	9242130	1	\$27.50
7795	INV100586	2/28/2006	208539	3/7/2006	61041	15.1	LCLS - LOWER TRACK, 2220-76	9242130	10	\$159.60
7795	INV100586	2/28/2006	208539	3/7/2006	61041	16.1	LCLS - LOWER TRACK, 2220-82	9242130	1	\$17.22
7795	INV100586	2/28/2006	208539	3/7/2006	61041	17.1	LCLS - LOWER TRACK, 2220-70.5	9242130	2	\$29.61
7795	INV100586	2/28/2006	208539	3/7/2006	61041	18.1	LCLS - UPPER TRACK, 2210-76	9242130	10	\$159.60
7795	INV100586	2/28/2006	208539	3/7/2006	61041	19.1	LCLS - UPPER TRACK, 2210-82	9242130	1	\$17.22
7795	INV100586	2/28/2006	208539	3/7/2006	61041	20.1	LCLS - UPPER TRACK, 2210-70.5	9242130	2	\$29.61
7795	INV100586	2/28/2006	208539	3/7/2006	61041	21.1	LCLS - PANEL STIFFNER,	9242130	37	\$178.16

							8575-53				
7795	INV100586	2/28/2006	208539	3/7/2006	61041	22.1	LCLS - PANEL STIFFNER, 8570-53	9242130	37	\$277.13	
7795	INV100586	2/28/2006	208539	3/7/2006	61041	23.1	LCLS - - T-NUT 15-SERIES 1/4-	9242130	1704	\$340.80	
7795	INV100586	2/28/2006	208539	3/7/2006	61041	24.1	LCLS - T-JOINIG PLATE 5 HOLES,	9242130	44	\$334.40	
7795	INV100586	2/28/2006	208539	3/7/2006	61041	25.1	LCLS - L-JOINING PLATE 5 HOLES	9242130	38	\$264.10	
7795	INV100586	2/28/2006	208539	3/7/2006	61041	26.1	LCLS - INSIDE CORNER BRKT 4 HO	9242130	150	\$607.50	
7795	INV100586	2/28/2006	208539	3/7/2006	61041	27.1	LCLS - 90 DEG JOINING PLATE 7	9242130	48	\$396.00	
7795	INV100586	2/28/2006	208539	3/7/2006	61041	28.1	LCLS - FLOOR MOUNT BASE PLATE	9242130	44	\$341.00	
7795	INV100586	2/28/2006	208539	3/7/2006	61041	29.1	LCLS - 1/4-20 UNC-2A X 5/8 BUT	9242130	1730	\$363.30	
7795	INV100586	2/28/2006	208539	3/7/2006	61041	30.1	LCLS - WASHER FLAT NARROW 1/4,	9242130	1506	\$90.36	
7795	INV100586	2/28/2006	208539	3/7/2006	61041	31.1	LCLS - ADJUSTABLE HINGE, 2080	9242130	12	\$143.40	
7795	INV100586	2/28/2006	208539	3/7/2006	61041	32.1	LCLS - MAGNETIC DOOR CATCH-SET	9242130	8	\$52.00	
7795	INV100586	2/28/2006	208539	3/7/2006	61041	33.1	LCLS - STEEL DOOR HANDLE	9242130	8	\$33.60	
7795	INV100586	2/28/2006	208539	3/7/2006	61041	34.1	LCLS - CUT TO LENGTH CHARGE	9242130	177	\$327.45	
7795	INV100586	2/28/2006	208539	3/7/2006	61041	35.1	LCLS - 6 HOLE JOINING PLATE, 4	9242130	20	\$111.00	
7795	INV100586	2/28/2006	208539	3/7/2006	61041	36.1	LCLS- 80/20 7212 CUTTING	9242130	100	\$185.00	

CHARG

Totals 5866 \$8,386.56

Payment Information:

Voucher	Vendor	Payment Method	Date	Paid Check#	Amount
208539	7795	System Check	3/30/2006	038043	\$8,386.56
Totals					\$8,386.56

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

**1.2.03.02.06 Laser Hall
Optical Table Sys**


LUSI "XPP LS Hall Optical Table"
WBS 1.2.3.2.6

Estimator Fritz

Description: LS Hall Optical Tables and Supports

Activity ID	DESCRIPTION	Part Number	Material	Man Months	Resource	Hours	QTY	Unit Cost [\$]	Direct Total	Source/Status of Estimate	Weight each (lb)	Weight total (lb)	Vendor	Note 1	Note 2
	MSL														
XPP 05130	Total								\$30.87K						
	5' x 10' x 18"	RS4000-510-18					2	\$ 10,167.00	\$20.33K	Vendor Quote			newport		
	Table Leg set	RL-2000-419.5					2	\$ 1,264.00	\$2.53K	Vendor Quote			newport		
	Earthquake restraints	ERS97-123.5					2	\$ 656.00	\$1.31K	Vendor Quote			newport		
	Table Connection and Customization						1	\$ 6,700.00	\$6.70K						

Continue Shopping or begin Secure Checkout.

Quantity	Unit	Product	Description	Availability	Total Price	
1	EA	ERS97-123.5	 EARTHQUAKE RESTRAINT SYSTEM see product detail	1 on 4/16/08	656.00 USD	remove
1	EA	RS4000-58-8	 TABLE TOP see product detail	1 on 3/26/08	6,151.00 USD	remove
1	EA	RS4000-510-18	 TABLE TOP see product detail	1 on 3/26/08	10,167.00 USD	remove
1	EA	RL-2000-419.5	 SUPPORT SYSTEM-LAB LEG see product detail	1 on 3/26/08	1,264.00 USD	remove

Order Subtotal: 18,238.00 USD

[Back](#)

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[Secure Checkout](#)

[Email Cart Quote](#)

1.2.04 XPP Detector Sys

NO BOE FOR THIS WBS:

→ BNL IS STATUSING
DIRECTLY TO P3

→ \$ PER BNL - SLAC
MOU

1.2.04.01 Physics Support & Engineering Integration

NO BOE
FOR THIS
WBS:

1.2.04.02 X-ray Sensor

NO BOE
FOR THIS
WBS:

1.2.04.03 Application Specific Integrated Circuits (ASIC)

NO BOE
FOR THIS
WBS:

1.2.04.04 Data Acquisition Sys (DAQ)

NO BOE
FOR THIS
WBS:

NO BOE
FOR THIS
WBS:

1.2.05 XPP Sample Environment & Diffractometer System

NO BOE
FOR THIS
WBS:

1.2.05.01 XPP Diffractometer System

XPP Detector Mover
WBS 1.2.5.1

Estimator Langton/Fritz/Delor
 covered under 1.2.5.3)

Activity ID	DESCRIPTION	Part Number	Material	Man Months	Resource	Hours	QTY	Unit Cost [\$]	Direct Total	Source/Status of Estimate	Weight each (lb)	Weight total (lb)	Vendor	Note 1	Note 2
	PED														
	Sub Total					942			\$59.90K						
	Detector Mover														
XPP 1251240	Preliminary				Engineer	175			\$10.05K	eng judge					
XPP 1251240	Preliminary				Designer	161			\$10.95K	eng judge					
	tot					336			\$21.00K						
XPP 1251260	Final				Engineer	66			\$3.79K	eng judge					
XPP 1251260	Final				Designer	61			\$4.15K	eng judge					
	tot					127			\$7.94K						
	Detector Mover rem parts														
XPP 1251242	Preliminary				Engineer	111			\$6.38K	eng judge					
XPP 1251242	Preliminary				Designer	102			\$6.94K	eng judge					
	tot					213			\$13.31K						
XPP 1251262	Final				Engineer	42			\$2.41K	eng judge					
XPP 1251262	Final				Designer	38			\$2.58K	eng judge					
	tot					80			\$5.00K						
	Documentation														
XPP 1251285	detail detect mover				Designer	44			\$2.99K	eng judge					
XPP 1251290	detail rem parts				Designer	58			\$3.94K	eng judge					
XPP 1251300	assembly docs				Designer	20			\$1.36K	eng judge					
XPP 1251305	check-rel				Designer	64			\$4.35K	eng judge					
	tot								\$12.65K						
	MSL														
	Total								\$186.00K						
	Procurements														
XPP 23130	Robotic detector positioning system						1	#####	\$170.00K	Quotation			Square One Systems Design		
XPP 23210	Robot Support Structure								\$16.00K						
	Cross Beam Support						1	\$ 5,000.00	\$5.00K	eng judge					
	Diagonal Brace						2	\$ 2,000.00	\$4.00K	eng judge					
	Vertical Support						2	\$ 2,000.00	\$4.00K	eng judge					
	Wall-ceiling Plate						4	\$ 750.00	\$3.00K	eng judge					

Description: XPP Sample Mover

Activity ID	DESCRIPTION	Part Number	Material	Man Months	Resource	Hours	QTY	Unit Cost [\$]	Direct Total	Source/Status of Estimate	Weight each (lb)	Weight total (lb)	Vendor	Note 1	Note 2
PED						927			\$60.20K						
Totals															
XPP 1251125	Prelim Design & Analysis - Sample Tilt Platform				Engineer	28			\$1.61K	LANGTON					
XPP 1251125	Prelim Design & Analysis - Sample Tilt Platform				Designer	64			\$4.35K	LANGTON					
tot									\$5.96K						
XPP 1251155	Finalize Design - Sample Tilt Platform				Engineer	17			\$0.88K	LANGTON					
XPP 1251155	Finalize Design - Sample Tilt Platform				Designer	31			\$2.11K	LANGTON					
tot									\$3.08K						
XPP 1251190	Documentation				Designer	16			\$1.09K	LANGTON					
XPP 1251130	Prelim Design & Analysis - Sample Kappa Platform				Engineer	16			\$0.82K	LANGTON					
XPP 1251130	Prelim Design & Analysis - Sample Kappa Platform				Designer	30			\$2.04K	LANGTON					
tot									\$2.96K						
XPP 1251160	Finalize Design - Sample Kappa Platform				Engineer	8			\$0.46K	LANGTON					
XPP 1251160	Finalize Design - Sample Kappa Platform				Designer	13			\$0.88K	LANGTON					
tot									\$1.34K						
XPP 1251195	Documentation				Designer	7			\$0.48K	LANGTON					
XPP 1251135	Prelim Design & Analysis-Diff Beamline Translation				Engineer	72			\$4.14K	LANGTON					
XPP 1251135	Prelim Design & Analysis-Diff Beamline Translation				Designer	123			\$8.36K	LANGTON					
tot									\$12.50K						
XPP 1251165	Finalize Design - Diff Beamline Translation				Engineer	27			\$1.55K	LANGTON					
XPP 1251165	Finalize Design - Diff Beamline Translation				Designer	48			\$3.26K	LANGTON					
tot									\$4.82K						
XPP 1251200	Documentation				Designer	75			\$5.10K	LANGTON					
XPP 1251137	Prelim Design & Analysis - diffractometer other parts				Engineer	49			\$2.82K	LANGTON					
XPP 1251137	Prelim Design & Analysis - diffractometer other parts				Designer	77			\$5.24K	LANGTON					
tot									\$8.05K						
XPP 1251167	Finalize Design - diffractometer other parts				Engineer	22			\$1.26K	LANGTON					
XPP 1251167	Finalize Design - diffractometer other parts				Designer	31			\$2.11K	LANGTON					
tot									\$3.37K						
XPP 1251205	Documentation				Designer	50			\$3.40K	LANGTON					
XPP 1251210	Assembly Drawings - Sample Diffractometer				Engineer	30			\$1.72K	LANGTON					
XPP 1251215	Check and Release Diff Drawings				Designer	93			\$6.32K	LANGTON					
tot									\$8.05K						
MSL															
Grand Total									\$522.12K						
23030	DIFFRACTOMETER SAMPLE TILT								\$227.54K						
DIFFRACTOMETER - COMMON CIRCLES															
	Huber 5203 80 Double Tilt Stage (450mm Center)					1		76,000.00	\$76,000	Vendor Quote-24MAR08			Huber, Germany		
	M-BF-810-73 Stepper					2		940.50	\$1,881	Vendor Quote-24MAR08			Huber, Germany		
	Gear 2016 or 2015					2		1,650.00	\$3,300	Vendor Quote-24MAR08			Huber, Germany		
	Adapter Plate 430 - 5203.80					1		7,500.00	\$7,500	Vendor Quote-24MAR08			Huber, Germany		
	Huber 430 Circle					1		48,750.00	\$48,750	Vendor Quote			Huber, Germany		
	with incre angle incode														
	with incode support														
	with interpolation unit														
	M-BF-810-73 Stepper					1		940.50	\$0.94K	Vendor Quote-24MAR08			Huber, Germany		
	Gear 2016 or 2015					1		1,650.00	\$1.65K	Vendor Quote-24MAR08			Huber, Germany		
TILT PLATFORM - SAMPLE X-Y-Z															
	Huber 5103 C40-XE Lift Stage					1		43,500.00	\$43,500	Vendor Quote-24MAR08			Huber, Germany		
	Huber 5102 51_XY Stage					1		36,250.00	\$36,250	Vendor Quote-24MAR08			Huber, Germany		
	M-BF-810-73 Stepper					3		940.50	\$2,821	Vendor Quote-24MAR08			Huber, Germany		
	Gear 2016 or 2015					3		1,650.00	\$4,950	Vendor Quote-24MAR08			Huber, Germany		
XPP 23080	KAPPA SAMPLE MOVER								\$121.09K						
	1 x 420 / 2 x 410 circle kappa assembly					1		118,500.00	\$118,500	Vendor Quote			Huber, Germany		
	includes encoding of 410 circles												Huber, Germany		
	includes mounting brackets												Huber, Germany		
	includes counterweights												Huber, Germany		
	includes motors and belts for 410 circles												Huber, Germany		
	excludes z-translation head												Huber, Germany		
	M-BF-810-73 Stepper					1		940.50	\$0.94K	Vendor Quote-24MAR08			Huber, Germany		
	Gear 2016 or 2015					1		1,650.00	\$1.65K	Vendor Quote-24MAR08			Huber, Germany		
XPP 23170	DIFFRACTOMETER OTHER PARTS								\$173.49K						
SAMPLE HEADS															
	Huber D4350HM Manual Gon. Head (1006)					1		1,800.00	\$1,800	Vendor Quote			Huber, Germany		
	Huber D4350HSM Step Motor Goniometer Head (1006)					1		5,200.00	\$5,200	Vendor Quote			Huber, Germany		
	Huber 409 Circle					1		6,500.00	\$6,500	Vendor Quote			Huber, Germany		
	Support/Interface For 409 Circle w/Counterweight					1		2,500.00	\$2,500	Vendor Quote			Huber, Germany		
	20106 Gear 2010 (409)					1		1,650.00	\$1,650	Vendor Quote			Huber, Germany		
	M-BF-810-77 Stepper (409)					1		800.00	\$0.80K	Vendor Quote			Huber, Germany		
	Support for Encoder ROD800U					1		3,500.00	\$3,500	Vendor Quote			Huber, Germany		
	Interpolation Unit ISV 660					1		1,400.00	\$1,400	Vendor Quote			Huber, Germany		
	Angle Encoder RON 905 (409, 420, 430)					1		17,000.00	\$17,000	Vendor Quote			Huber, Germany		
	Display for Encoder (409, 430)					1		2,500.00	\$2,500	Vendor Quote			Huber, Germany		
	Huber 5104A (Sample "Z" Translation)					1		1,500.00	\$1,500	Vendor Quote			Huber, Germany		
DIFFRACTOMETER - GLOBAL POSITIONING															
	Huber 5103 D40 Lift Stage (w/enc. mtr. gears)					1		53,125.00	\$53,125	Vendor Quote-24MAR08			Huber, Germany		
	Huber Linear Slide (650mm Custom. with enc / excl motor)					1		36,425.00	\$36,425	Vendor Quote-24MAR08			Huber, Germany		
	M-BF-810-73 Stepper					1		940.50	\$0.94K	Vendor Quote-24MAR08			Huber, Germany		
	Gear 2016 or 2015					1		1,650.00	\$1.65K	Vendor Quote-24MAR08			Huber, Germany		
DIFFRACTOMETER BASE															
	Granite Base (1500 x 600 x 350mm)					1		2,700.00	\$2,700	Vendor Quote			Standridge Granite		
	Leveling Feet & Anchors					1		1,500.00	\$1,500						
	Misc Hardware (including wire management)					1		4,000.00	\$4,000						
TOOLING (LIFTING EQUIP, STORAGE EQUIP)															
						1		5,000.00	\$5,000						
ALIGNMENT FIXTURES															
	Align Tilt Platform to FEL					1		5,000.00	\$5,000						
	Align Kappa Ctr to FEL					1		5,000.00	\$5,000						
	Align Diff Ctr to Detect Motion					1		5,000.00	\$5,000						
BEAM STOP ASSY (Detector Protector)															
	XY Translation Stage (Newport 678026-01-02)					1		6,000.00	\$6,000	Catalogue			Newport		
	Beam Blocker (W = Al, circa 3mm dia cup)					1		1,500.00	\$1,500						
	Support Structure					1		1,500.00	\$1,500						

Langton, J. Brian

From: Delor, James
Sent: Friday, February 08, 2008 12:47 PM
To: Langton, J. Brian
Subject: Answers to Huber Quote Questions

J.,

I just spoke with David Rognlie of Blake industries in Scotch Plains, NJ. The items in my spreadsheet are needed for each Circle, the only exception is the interpolation unit which is an option & will give approx. 10x the readout resolution if incorporated.

The "XE" higher resolution option in the new catalogue is a new feature and very few have been ordered to date, the "X3" tending to still be the most popular on recent orders. Specifying the "XE" may add about 30% to the cost according to David.

Each Circle will need a "Display for Encoder" per David.

The encoder precision is indeed greater, but there doesn't seem to be a lesser resolution option available.

To reiterate, the "interpolation unit" is optional.

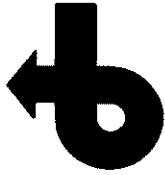
Controller units are not included in estimate & David was not sure to what degree we might be "microstepping", if at all.

Dave Nelson in SLAC controls group may be a good resource for us on how the controllers will be set-up for the Diffractometer. - JTD

E.G.:

Huber 420 Circle
Angle Encoder RON
905 (409, 420, 430)
Display for Encoder
(409, 420, 430)
201600 Gear 2010
M-BF-810-73
Stepper
Support for Encoder
ROD800U
Interpolation Unit IBV
660

Jim DeLor
(650)926-3136 (x3136), MS 41
DelorJ@slac.stanford.edu



BLAKE INDUSTRIES, INC.

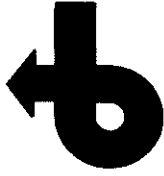
BLAKE INDUSTRIES, INC.
660 Jerusalem Road
Scotch Plains, NJ 07076
TEL: (908) 233-7240
FAX: (908) 233-1354
Email: blake4xray@worldnet.att.net

December 14, 2007

Jim DeLor
Mechanical Engineer, LUSI
Stanford Linear Accelerator Center
2575 Sand Hill Road, Mail Stop 41
Menlo Park, CA 94025
(650)926-3136 (x3136)
DelorJ@slac.stanford.edu

QUOTATION

1 -	480-x3 One Circle Goniometer 480 X3 Precision configuration X3 Diam. 800mm, i=360:1, excl. motor. Loading configuration W2\$46,000.00
1 -	ERA780C Encoder Tape ERA780C 45000 lines, 360° with readout head. Mounted inside model 480. Incl. adapter parts\$10,500.00
1 -	440-X3 One-Circle Goniometer 440X3 Precision configuration X3 Diam. 500mm, i=360:1, excl. motor Loading configuration W2\$26,500.00
1 -	ERA880C Encoder Tape ERA880C 45000 lines, 360° with readout head. Mounted outside on model 440, Incl. adapter parts\$10,500.00



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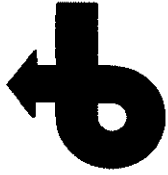
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QUOTATION CONTINUED

1 -	430-x3 One-circle Goniometer 430 X3 Precision configuration X3 Diam. 400mm, i=360:1, excl. motor. Loading configuration W2\$22,000.00
1 -	420-X3 One-circle goniometer 420X3 Precision configuration X3 Diam. 290mm, i=360:1, excl. motor. Loading configuration W2\$15,750.00
1 -	409-X3 One-circle Goniometer 409 X3 Precision configuration X3 Diam. 110mm, i=180:1, excl. Motor Loading configuration W2\$ 6,500.00



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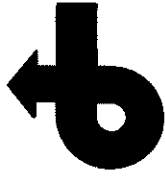
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QUOTATION CONTINUED

3 -	RON 905 Incremental Angle Encoder RON 905, 36000 lines, accuracy +/-0.4 arc sec, incl. plug for 430, 420, 409 @ \$17,000.00 each \$51,000.00
3 -	ROD800U Support For encoder mounting of type ROD, RON, RPN or RCN In Goniometer series 400 For 430, 420 and 409 @ \$3500.00 each \$10,500.00
5 -	IBV 660 Interpolation Unit IBV 660 Heidenhain interpolation electronics @ \$1400.00 each \$ 7,000.00
5 -	ND281B Display For incremental angle encoders (RS-232-interface) optional for Pos. 10 @ \$2500.00 each \$12,500.00



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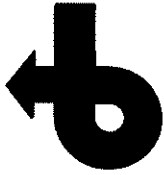
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QUOTATION CONTINUED

- 1 - DIV
Double Tilt Stage 5203.80
For high load capacity and high stability,
Travel range ca. +/-5°,
Size of mounting platform 400mm x 400mm
Distance mounting platform to rotation center: 460mm,
Tangential driving system, non linear
With encoders mounted on rotation axes,
Incl. limit switches, excl. motors.
. \$44,000.00
- 1 - 510251
X-Y Stage 5102.51
Travel range +/-25mm.
Dimensions 400 x 400 x 100mm
Excl. motors, incl. limit switches, load capacity 600kg
High precision versions XE
With linear encoders mounted on translation axes
. \$22,500.00



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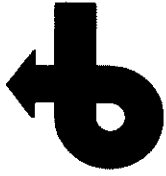
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QUOTATION CONTINUED

1 -	DIV1 Z-Translation Stage 5103.040 For high load capacity and stability, Incl. Linear encoder, Base size 400mm x 400mm, Travel range +/-10mm, incl. limit switches, Excl. motor	\$25,000.00
9 - D5402/20	201600 Gear 2010 (i=20:1), flange diam. 82mm, incl. scale, for models 420, 430, 440, 480, 512, 513 @ \$1,650.00 each	\$14,850.00
1 - D5402/20	20100 Gear 2010 (i=20:1), flange diam. 42mm, incl. scale, for models 409, Series 5000. for 409	\$ 1,650.00
9 -	M-BF-810-73 Stepper Motor Vexta PK 599-BW For RK 599-BE 400 Ncm, flange 82mm, 500/1000 steps/rev. incl. wiring and connector @ \$850.00 each	\$ 7,650.00



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QUOTATION CONTINUED

1 -	M-BF-810-77 Stepper Motor Vexta PK45 NBW 21 Ncm, flange 42mm, 500/1000 steps/rev., incl. wiring and connector for 409\$	600.00
-----	-------------------------------------------------------------------------------------------------------------------------------------------------	--------

Delivery: 6 - 8 months
Terms: Net 30 days
FOB: Scotch Plains, NJ

David G. Rognlie, President

Budgetary Proposal

Robotic Detector Positioning System

Prepared for

**The Linac Coherent Light Source
LCLS Ultrafast Science Instruments (LUSI)**

Submitted by

**Square One Systems Design, Inc.
Proposal Number SQR-1B00487**

February 15, 2007

1. Proposal Overview

The following proposal is in response to the LCLS's request for budgetary information covering the design, fabrication, test, delivery and commissioning of a Robotic Detector Positioning System for the one of the LCLS Ultrafast Science Instruments.

Square One Systems Design, Inc. (Square One) proposes to act as the general contractor for this project. From its base in Jackson, Wyoming, Square One will oversee all phases of component fabrication, system assembly and system testing and will be responsible for all project requirements.

Square One has an experienced engineering staff and advanced R&D facilities that make us uniquely well suited to execute the Robotic Detector Positioning System project. Square One has developed a variety of complex robotic workcells, including high-capacity positioning systems, destined for use in high energy particle accelerators. Our facility has over 2,400 square feet of workspace. We maintain a dedicated assembly area with the material handling infrastructure necessary for large systems. Dimensional and functional testing can be performed on premises. We follow a rigorous quality control policy to ensure that all of our projects meet our customers' requirements. Our record of completing projects on time and of meeting or exceeding our customers' expectations remains the cornerstone of Square One's continued growth and success.

2. System Description

2.1 Robotic Detector Positioning System

The detectors used to collect data in x-ray and neutron diffraction experiments have traditionally been positioned by means of custom-built goniometers. These mechanisms are designed to position the face of a detector at any point on the surface of a section of a sphere that is centered on a sample. Some of these mechanisms also incorporate a translational degree of freedom allowing the distance of the detector face from the sample to be adjusted. While sturdy and reliable, these goniometers are generally very large and the size of the work envelope within which they can position the detector is often less than ideal. Consequently, new methods for positioning detectors are desired.

Commercial, six axis articulated arm robots are capable of locating objects at any point within their work envelope with a very high degree of precision. Further, they are able to orient these objects in all three rotational degrees-of-freedom. Square One proposes using a high-capacity floor mounted robot (Staubli RX160L) to position a detector relative to the sample under test in LUSI. The advantages of this method are an increase in area within which the detector can be positioned, complete flexibility in the stand-off distance of the detector from the sample,

shorter time required to reposition the detector and a reduced mechanism footprint.

The following specifications shall apply:

<i>Requirement</i>	<i>Specification</i>
Solicitation Number	TBD
Part	X-Ray Detector
Weight	10 kg
Maximum Stand-off	1.5 m
Installation Site	LCLS, Stanford Linear Accelerator Center, Menlo Park, CA

Square One proposes a turn-key effort during which our team will take full responsibility for the creation of a completely "mission ready" robotic workcell. Square One will develop the positioning robot and the necessary support hardware. Square One will also supply lock-out industrial safeguards that will reliably segregate the robot from LUSI personnel that may be working in the robot's vicinity. Square One will develop an intuitive graphical user interface that will tie the robot's function into the overall controls architecture of the experiment. Finally, Square One will install and commission the Robotic Detector Positioning System at the LCLS.

3. Price and Delivery

3.1 Budgetary Price

Item	Quantities	Unit Price	Total Price
Robotic Detector Positioning System	1	\$ 170,000	\$ 170,000

- All Prices are in U.S. Dollars
- F.O.B. Destination: LCLS, Stanford Linear Accelerator Center, Menlo Park, CA
- Shipping Point: Square One, Jackson, Wyoming

3.2 Delivery

Square One estimates that delivery of the finished Robotic Detector Positioning System to the LCLS will be **26 Weeks** from the date of the receipt of a purchase order.

4. Milestone Payments

4.1 Payment Schedule

- 20% upon award of contract
- 40% upon acceptance of Final Manufacturing Plan
- 20% upon system acceptance at Square One's Jackson facility
- 20% upon final system acceptance at the LCLS

All invoices are payable net 30 days.

4.2 Manufacturing Plan Acceptance

Square One will develop a Final Manufacturing Plan and hold a formal Design Review approximately eight weeks into the project. Successful completion of this Design Review will initiate parts fabrication and purchasing. This Design Review will also serve as the project's second payment milestone

4.3 Final System Testing

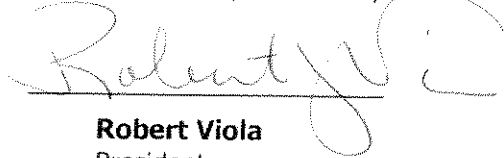
Square One will demonstrate the ability of the Robotic Detector Positioning System to meet all of performance requirements at its Jackson facility approximately 24 weeks into the project. Successful completion of these tests will serve as the project's third payment milestone.

4.4 Final Acceptance

Upon successful completion of the installation and commissioning of the Robotic Detector Positioning System at the LCLS, the project will be considered completed. Delivery, installation and acceptance will serve as the project's fourth and final payment milestone.

5. Authorization

Authorized for Square One Systems Design, Inc.:



Robert Viola
President

Square One Systems Design
PO Box 10520
Jackson, WY 83002
(307) 739-0946

1.2.05.02 XPP Environment

NO BOE
FOR THIS
WBS:

1.2.05.02.01 XPP Cryostat

ITEMS FOR
THIS WBS
DESCOPED:

1.2.05.02.02 XPP Liquid Jet System

ITEMS FOR
THIS WBS
DESCOPED:

1.2.05.02.03 XPP Sample Chamber

ITEMS FOR
THIS WBS
DESCOPED:

1.2.03 XPP Lab Facilities

NO BOE
FOR THIS
WBS:

1.2.06.01 XPP Hutch Specification

NO BOE
FOR THIS
WBS:

1.2.06.02 XPP Utilities & Hutch Equipment

LUSI XPP Hutch facilities
WBS (1.2.6.2)

Estimator Kurita/Langton/Defever

Description: all support equipment not covered by CEF headings

ACTIVITY ID	DESCRIPTION	Part Number	Material	Man Months	Resource	Hours	QTY	Unit Cost [\$]	Direct Total	Source/Status of Estimate	Weight each (lb)	Weight total (lb)	Vendor	Note 1	Note 2
	MSL														
	Total								\$61.03K						
XPP 08380	Hutch Cabinets						1	\$10,611.68	\$10.61K	Vendor Quote			Stanley Vidmar		
XPP 08430	Drop Floor Hardware						1	\$20,423.00	\$20.42K	Vendor Quote			Access Floor Systems		
XPP 08470	Various Cable Trays						4	\$5,000.00	\$20.00K						
XPP 08501	misc hangers, covers, drops, signage						1	\$10,000.00	\$10.00K						



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866-288-8483**

Field Quote Number
505-19S020808

Date:
2/8/2008

Prepared For:

Ship To:

Stanford Linear Accelerator Center
2757 Sand Hill Rd
Menlo Park, CA 94025

Attn: David Fritz
Phone # 650-926-3779

Item #	Qty.	Model #	Description	Unit Price	Aggregate Price
	2	SV0340L	HOUSING SV,340(22 1/2"W X 27 3/4"D X 59"H) WITH LOCKING DEVICE EACH WITH:	1731.93	3463.86
	6	SV2048	SV20 DRAWER WITH LD SV48		
	4	SV2558	SV25 DRAWER WITH LD SV58		
	4	SV3078	SV30 DRAWER WITH LD SV78		
	1	DWS0340	SHELF CABINET - DW,0340 (60"W X 27 3/4"D X 59"H) WITH:	977.92	977.92
	3	DWCS80	SHELF - DW		
	1	SV0175L	HOUSING SV,175(22 1/2"W X 27 3/4"D X 33"H) WITH LOCKING DEVICE EACH WITH:	973.58	973.58
	7	SV2558	SV25 DRAWER WITH LD SV58		
	1	SV0175L	HOUSING SV,175(22 1/2"W X 27 3/4"D X 33"H) WITH LOCKING DEVICE EACH WITH:	825.74	825.74
	2	SV2048	SV20 DRAWER WITH LD SV48		
	1	SV40118	SV40 DRAWER WITH LD SV118		
	1	SV45716	SV45 DRAWER WITH LD SV716		
	1	SV50716	SV50 DRAWER WITH LD SV716		
	1	SV0340L	HOUSING SV,340(22 1/2"W X 27 3/4"D X 59"H) WITH LOCKING DEVICE EACH WITH:	1280.99	1280.99
	2	SV3078	SV30 DRAWER WITH LD SV78		
	2	SV35118	SV35 DRAWER WITH LD SV118		
	3	SV40118	SV40 DRAWER WITH LD SV118		
	2	SV45716	SV45 DRAWER WITH LD SV716		
	1	HT90	HARDWOOD TOP-90 X 30 X 1 3/4	360.71	360.71
	2	HT60	HARDWOOD TOP-60 X 30 X 1 3/4	244.09	488.18
	3	WFS60P	WFS-60X12X15H, STEEL, POWERED	332.22	996.66
	3	BPWFS60	BACK PANEL - 60 X 15, STL	51.68	155.04
	3	FL04807200	FLUORESCENT LIGHT	126.23	378.69
	1	CWFS30	CWFS-30X30X12X15H, STEEL	242.59	242.59
	2	BPWFS30	BACK PANEL - 30 X 15, STL	42.19	84.38
	1	BL1751	BENCH LEG	92.45	92.45
	1	SP	SPLICE PLATE KIT	22.13	22.13
	1	HILO	HI-LO BRACKET KIT	32.55	32.55
	1	SPC1	SPECIAL COLOR	236.21	236.21

Color: Lock Combination: **Total Price: \$10,611.68**

Housings: Special Color
Drawers: Off White

Key all alike

To View Colors Click Here

[Stanley Vidmar Colors](#)

Prepared By:

Phone #:

Randy Streeter

925-829-2250

EZ Freight Terms: F.O.B Origin Frt Charges

PPD and Added To Your Invoice If Stanley Chooses Carrier Terms: Net 30 Days

Prices may change upon notice by the seller. Unless otherwise stated by seller, prices are those in effect at time of order receipt.

Estimated Shipment Date: 3 Weeks A.R.O

Final Approval by Home Office required

Access Floor Systems.com, Inc

PO Box 1148
Abita Springs, LA 70420
985.898.0880, 800.868.8606
985.892.8535 fax
www.accessfloorsystems.com
sales@accessfloorsystems.com

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Access Floor Kit

We offer a complete kit to provide you with an access floor ready to install.

This Kit includes:

- Panels with High Pressure Laminate, Color Grey Starlite with black trim
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- Pedestal Adhesive for securing the pedestals to the concrete slab
- One suction cup knuckle panel lifter to lift the panels once they are installed for underfloor access
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Quote Options

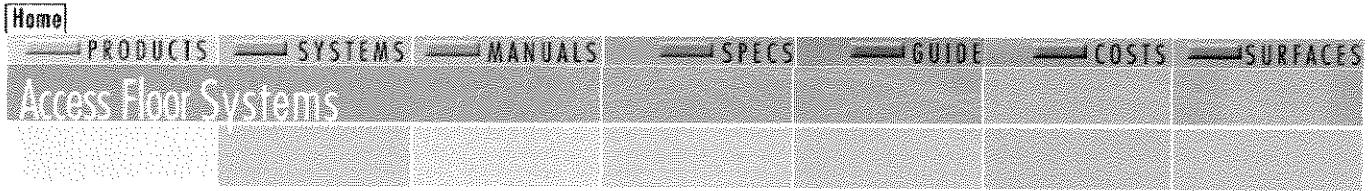
Quote contains items placed in shopping cart in addition to items chosen from quick quote. [Click here to edit shopping cart](#)

Quantity	Description	Product Code	Price	Total
600	Concore Panel Kit - 12 inches high	06ACK12	\$14.99	\$8994.00
10	Closure Kit for 12 inch high floor	06FTK12	\$58.80	\$588.00
10	Step Kit for 12 Inch High Floor	04STK1	\$375.00	\$3750.00
24	Ramp Kit	06RK	\$32.00	\$768.00
20	Floor Mount Guardrail	04FMGR	\$75.00	\$1500.00

20	Cable Cutout Kit	06CCK	\$39.75	\$795.00
600	Charge for 6 month avail.		\$0.5	\$300.00
		Materials Total		\$16395.00
	Charge for shipping including Inside Delivery charge:			\$4028.00
		Total		\$20423.00

Place Order

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These budgetary numbers are average prices based on installation or material sales in the continental United States. Floor prices are based on a high pressure laminate finish with a bolted understructure system, with a finished floor height of 12". No perforated panels, cable cutouts, ramps, steps or handrails are included in these budgetary numbers. Freight charges are in addition to material sales budget. If you do not know what type of floor that you need, simply visit our [QUICK SELECTOR Program](#). In seconds, based on the information you provide to the program, you will have a good idea of the type of floor system to use. You will also be guided back to this page.

General office applications are always cheaper than these equations. See below for special sections:

of Square Feet = 600

Type of Floor	Materials Only
Woodcore Panel Floor System	
Woodcore standard product	\$ 8994.00
All Steel Panel Floor System	
All Steel standard product	\$ 8994.00
All Steel other colors	\$ 11394.00
All Steel, Concrete Filled Panel System	
ConCore ConCore standard product	\$ 10194.00
General Office Access Floors*	
ConCore standard product	\$ 4500.00

*Raised Floor Systems for general office applications are cheaper than standard computer flooring. The budget numbers above reflect no surface covering with a posilock understructure system. There will be no grid. This is for a low finished floor height (no more than 6 inches) with no surface covering.

All Aluminum Panel System

Floating Floors All Aluminum System (standard product) \$ 14994.00

Used Flooring

Previously used raised floor systems (light duty to moderate loads) \$ 4800.00

Installation**

Installation Costs \$ 3000.00

**Installation varies widely based on location, total square footage, project conditions, etc. As a rule of thumb we would allow approximately \$5.00 per square foot. Ramps, Steps, Handrails and Carpet all are extra charges.

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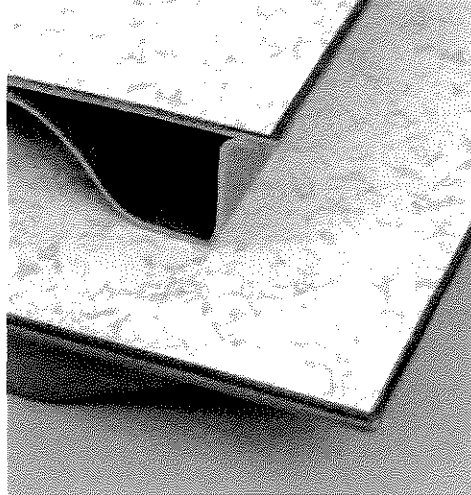
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Benefits:

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- Excellent ultimate load performance
- Epoxy finish for lifetime protection
- Interchangeable with other panel strengths
- Completely non-combustible
- Excellent grounding and electrical continuity
- Flame spread and smoke development rating: Class A

ALL STEEL 1000 PERFORMANCE SELECTION CHART

SYSTEM TYPE		SYSTEM WEIGHT	STATIC LOADS			ROLLING LOADS		IMPACT LOADS
Panel	Understructure		Concentrated Loads	Uniform Loads	Ultimate Loads	10 passes	10,000 passes	
All Steel 1000	Bolted Stringer	6.5 lbs/ft ² 32 kg/m ²	1000 lbs 454 kg	250 lbs 113 kg	2800 lbs 1270 kg	400 lbs 181 kgs	400 lbs 181 kgs	150 lbs 68 kg
	Posilock	5.5 lbs/ft ² 27 kg/m ²	1000 lbs 454 kg	250 lbs 113 kg	2200 lbs 998 kg	400 lbs 181 kg	400 lbs 181 kg	100 lbs 45 kg
All Steel 1250	Bolted Stringer	7.5 lbs/ft ² 37 kg/m ²	1250 lbs 567 kg	300 lbs 136 kg	4400 lbs 1996 kg	500 lbs 227	500 lbs 227 kg	150 lbs 68 kg

						kg		
	Posilock	6.5 lbs/ft ² 32 kg/m ²	1250 lbs 567 kg	300 lbs 136 kg	4000 lbs 1814 kg	500 lbs 227 kg	500 lbs 227 kg	100 lbs 45 kg
All Steel 1500	Bolted Stringer	8.0 lbs/ft ² 39 kg/m ²	1500 lbs 680 kg	375 lbs 170 kg	5050 lbs 2291 kg	600 lbs 272 kg	600 lbs 272 kg	150 lbs 68 kg

Note: Loads applied to a one square inch area. Results above indicate weakest point of panel.

Access Floor Systems.com, Inc. sales@accessfloorsystems.com, or call (800) 868-8606
 Copyright © 1994-2007 Access Floor Systems.com, Inc.

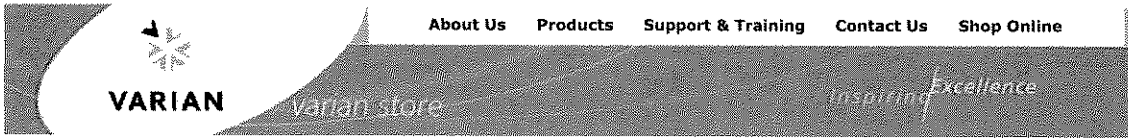
1.2.07 XPP Vacuum Sytem

NO BOE
FOR THIS
WBS:

1.2.07.01 XPP Vacuum Equipment

Description: Vacuum Equipment

Activity ID	DESCRIPTION	Part Number	Material	Man Months	Resource	Hours	QTY	Unit Cost (\$)	Direct Total	Source/Status of Estimate	Weight each (lb)	Weight total (lb)	Vendor	Note 1	Note 2
	PED														
	Sub Total								\$12.55K						
	Vacuum Design/Analysis														
XPP 08580	Preliminary/Final				Engineer	80			\$4.60K	langton					
XPP 08580	Preliminary/Final				Designer	80			\$5.44K	langton					
	tot					160			\$10.04K						
	Vacuum Equipment Layouts														
XPP 08660	Preliminary/Final				Engineer	20			\$1.15K	langton					
XPP 08660	Preliminary/Final				Designer	20			\$1.36K	langton					
	tot					40			\$2.51K						
	MSL														
	Vacuum Pumps														
	55l/s Ion Pump	9191310					5	\$ 2,665.00	\$13.33K	Varian, Inc. website			Varian		
	Ion pump cables	9290708					5	\$ 525.00	\$2.63K	Varian, Inc. website			Varian		
XPP 08940	ion pump subtot								\$15.95K						
	Vacuum Gauging														
	MKS Pirani Gauge	10317000024SH					4	\$ 280.00	\$1.12K	BIS history (PO 68439)			MKS		
5020	MKS Cold Cathode Gauge	104220006					4	\$ 625.00	\$2.50K	BIS history (PO 68439)			MKS		
	gauge subtot								\$3.62K						
	Vacuum Valves														
	VAT Series 10 Gate Valves	10840-UE44					6	\$ 2,770.00	\$16.62K	VAT Price list, valid from Apr 01 2007			VAT		
	Seal kit	82485-R1					6	\$ 250.00	\$1.50K	VAT Price list, valid from Apr 01 2007			VAT		
	Bakable right angle valve	54032-GE02					5	\$ 595.00	\$2.98K	VAT Price list, valid from Apr 01 2007			VAT		
XPP 15064	valve subtot								\$21.10K						
	pumping equipment														
	Roughing cart	Custom					1	\$21,000.00	\$21.00K	Pfeiffer Vacuum -- Nigel Cotton			Pfeiffer Vacuum		
	Leak detector	VSPR021					1	\$21,700.00	\$21.70K	Varian Inc. website			Varian		
	Sniffer probe w/ 10' tubing	K9565306					1	\$ 475.00	\$0.48K	Varian Inc. website			Varian		
	Cart						1	\$ 500.00	\$0.50K	Montanez					
	RGA system	DM300MS					1	\$16,200.00	\$16.20K	Ametek quotation #10132			Ametek		
	Vacuum Roughing Hose	440107					2	\$ 232.00	\$0.46K	MDC website			MDC		
	Vacuum Roughing Hose	440115					2	\$ 237.00	\$0.47K	MDC website			MDC		
XPP 15140	pumping equip subtot								\$60.81K						
XPP 15200	Consumables (bolt sets)	MDC 190064					84	\$57.00	\$4.79K	Kurita/Defever			MDC	2 bolt sets per flange pair	
	Fabrication														
XPP 08960	Testing & Inspection Ion Pumps				Precise Assy	24			\$1.73K	Kurita/Defever					
XPP 15160	Testing & Inspection Pumping Equipment				Precise Assy	80			\$5.76K	Kurita/Defever					
XPP 15040	Testing & Inspection gauges				Precise Assy	16			\$1.15K	Kurita/Defever					
XPP 15068	Testing & Inspection valves				Precise Assy	24			\$1.73K	Kurita/Defever					
	Materials								\$106.27K						
	Labor								\$10.37K						
	Grand Total								\$116.63K						



January 14, 2008

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Shopping Cart

Description	Part Number	Package Quantity	Quantity	Each	Total	Estimated Ship Availability Date ¹	Request Ship Date ¹	Delete
PUMP, ION STARCELL, 300 L/S, BTM CRYOPNL, 120V Requested Lot:	9192642	1	1	\$10,580.00 USD	\$10,580.00 USD	January 18, 2008	01/14/2008	
CABLE, HV, RAD RESIST, INTERLOCK, 10M Requested Lot:	9290708	1	1	\$525.00 USD	\$525.00 USD	February 07, 2008 In stock	01/14/2008	
CABLE, HV, TITANIUM SUBL CARTRIDGE, 3.5 M Requested Lot:	9240730	1	1	\$460.00 USD	\$460.00 USD	Date NOT AVAILABLE at this time In stock	01/14/2008	
GAUGE, ION, UHV-24, 2 FIL TUNGSTEN, 2.75 IN. CFF Requested Lot:	9715008	1	1	\$407.00 USD	\$407.00 USD	January 15, 2008 In stock	01/14/2008	
PUMP, TURBO-V 551 NAVIGATOR, 8 IN. CFF Requested Lot:	9698923	1	1	\$13,845.00 USD	\$13,845.00 USD	February 11, 2008 In stock	01/14/2008	
CABLE, EXT, TURBO-V 551/701/1001, 1000 CM Requested Lot:	9699951L1000	1	1	\$370.00 USD	\$370.00 USD	February 11, 2008	01/14/2008	
GAUGE TUBE,TC, 531, MILD STEEL, 1/8 IN. NPT Requested Lot:	F0472301	1	1	\$55.65 USD	\$55.65 USD	January 15, 2008 In stock	01/14/2008	

Total \$26,242.65 USD

Promotion Code:

[Continue Shopping](#)

(1) Need another ship date? Click on the calendar icon to select another date. We will ship as much of your order as we have in stock.

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cc:

Your Name:



Quotation

JWP20060808-003

Page: 1

VARIAN

Quotation For:

Gary Nintzel
BROOKHAVEN NATIONAL LABORATORY
NSLS
Bldg 725
UPTON, NY 11973
(631) 344 - 2576 FAX: (631) 344 -

Please address inquiries and replies to:

Jim Primm
(516) 795 - 3320
jim.primm@varianinc.com

Your Reference:	Quotation Expires: September 7, 2006
Sales Terms: FOB Lexington, MA	Delivery Leadtime: As Required
Payment Terms: Net 30 Days	Shipping Method: Best Way
Customer # 027115	Destination:

For order placement or further information contact:

Varian Inc.
121 Hartwell Avenue, Lexington, MA 02421

Order Line: (800) 882-7426
Fax: (781) 860-5405

Remit Payment to:
Varian Inc.
P.O. Box 70352
Chicago, IL 60673

Please reference this quotation number when placing your inquiry or order.

These commodities are being delivered for U.S. domestic consumption only.
Export of these commodities is subject to U.S. export control laws and regulations.

F.O.B. for any order shall be Origination, Lexington, Massachusetts, unless otherwise noted on this quotation.

The warranty period shall be one year from date of shipment unless otherwise noted.

Varian's Federal Tax I.D. Number: 77-0501995
Varian's Dunn & Bradstreet Number: 053481404

Submitted by: _____

(Signature)

Name: Jim Primm

Title: Sales Engineer

Date: August 8, 2006



VARIAN

Quotation

JWP20060808-003

Page: 2

BROOKHAVEN NATIONAL LABORATORY, UPTON, NY

Item	Qty	Part #	Product Description	Unit Price	Discount	Extended Price
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The below offer is based upon direct purchase of equipment from Varian Vacuum Technologies.

Section 1

1.01	1	VSPR021	LD,VS Port,DS42,120V	21,700.00	14.00 %	18,662.00
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The VS PR02 is a portable Helium Mass Spectrometer Leak Detector with a fully integrated DS 42 rotary vane primary pump. This powerful instrument is extremely easy to use, without sacrificing valuable functionality. Its features include:

- Totally automatic start-up and tuning/calibration routine
- Touch screen with intuitive menu structure make it is easy to navigate
- High clarity, wide angle, TFT color display provides excellent visibility
- High Test Port Pressure allows short cycle times, and detection of large leaks
- High Sensitivity (5 x 10-12 MDL) meets the most stringent test requirements
- High Helium Pumping Speed ensures fast response and clean-up
- New spectrometer optimizes sensitivity and mass separation
- Multiple language and units capability facilitates worldwide use
- Compact, lightweight design enables easy transporting of instrument
- Automatic test cycle sequencing with selectable roughing and test times
- 3 leak rate set points, 1 pressure set point, and 1 audible leak rate alarm
- Set points w/ selectable greater than or less than settings
- Turbo High Vacuum Pump is totally maintenance free.
- Protection from air inrushes caused by power failures and possible operator errors.
- Split Flow function allows accurate testing of vacuum process systems
- Useful for sniffing and/or vacuum applications, to measure or locate leaks
- The VS PR02 leak detector is delivered with one-year warranty
- Start-up training provided by your Varian Sales Engineer
- A variety of support contracts, completed by Varian Service Engineers, are available. Please ask you sales engineer for more information. Varian has the most direct, factory trained Field Sales Engineers and Field Service Engineers in the industry.

Technical Specifications

Primary pump DS 42, 2 m3/hr (34 l/m)
 Minimum Detectable Leak 5 x 10 -12 mbar l/s, atm cc/sec, 5 x 10-13 Pa m3/sec
 Maximum Test Pressure 13 mbar, 10 Torr, 1330 Pa
 He Pumping Speed (fine test) 1.8 l/s
 Calibration routine Automated or Manual, to Internal or External leak
 Background suppression Push-button initiated Auto Zero, and Auto Zero < Zero
 User Interface High Clarity, Color Display, TFT Touch Screen
 Selectable languages English, French, German, Japanese, Korean, Mandarin, Spanish
 Automated Cyclin Programmable Rough Time, Test Time, Reject Set points
 Set Points 5 Set points, N/O or N/C; 3 Leak Rate, 1 Pressure, 1 Audio
 Response time <0.5 sec
 Communications Interface RS 232 isolated@ 9600 baud (DB-9)
 Conformance Standards UL/CSA, CE
 Weight 38 kg (83 lbs)

This Quotation is exclusively subject to Varian Inc. Terms and Conditions of Sales attached.



Leader in Vacuum Valves



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Series 108 UHV gate valve

Order-No. 10840-UE44

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Inside diameter (ID) :	100 (4") mm/inch
Flange :	CF-F fixed flange UNF threads (compatible with ISO 3669 Fig.2)
Body material :	Stainless steel
Actuator :	Pneumatic actuator with position indicator with solenoid valve double acting
Solenoid :	Yes
Position indicator :	Yes
Feedthrough :	Bellows
Sealing technology :	VATLOCK-System
Sealing materials :	Bonnet: Metal / Gate: Viton®
Pressure range :	1•10 ⁻¹⁰ mbar - 1.6 bar (abs)
Molecular flow conductance :	1700 ls ⁻¹
Max. differential pressure closed position :	1.6 bar
Max. pressure on seat side during opening :	0.03 bar
Compressed air pressure min. - max. overpressure :	4 - 7 bar 58 - 102 psi
Volume of air cylinder :	0.11 l / 0.00388465 ft ³
Closing or opening time :	1.2s
Max. temperature :	Valve body 200°C Actuator 200°C Position indicator 80°C Solenoid °C
Weight :	12 kg / 26.46 lbs

Download

- IOMI (PDF)
- 2D Drawing (PDF)
- 3D Model (ZIP)

Order(Coming soon!)

UHV gate valve
Order-No. :10840-UE44-0006

Article inquiry

Spare parts

Seal kit
Order-No. :82485-R1

Price \$ 250.00

Article inquiry

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0000124212

Approved

Search Req

Type: **Regular Purchase Requisition**

Requisition: **0000124212**

Date: 04/17/06

Buyer: Zadel, Scott A

Entered by: MOMENTUM

All Comments

Requestor: Ratcliffe, Kathleen M.

Suggested Vendor: Vat Inc

Item	Qty	Unit \$	Unit	Est Cost	Description	P.O.	Charge No.	Dlvr To	PO Cost
1	4	510.000	EA	2,040.000	B280 - Vat Valve series 54 part number 54032-GE02	62235	9242151	280B -240	2,040.000
Totals				\$2,040.000					\$2,040.000

urchase Order: 62235

Dispatch
PO Partia
Receiv

TYPE: Regular Purchase Order

PO Date: 4/20/2006

Buyer: FREY

Comment: Order placed with Grace McManus, phone 781-537-5401, fax 781-935-3940.

Stanford Linear Accelerator Center Terms and Conditions for Commercial Supplies and Services, M36 (4/05), are attached hereto and incorporated by reference.

All shipments, shipping papers, invoices, and correspondence must be identified with the SLAC P.O. Number.

PURCHASE ORDER NUMBER MUST APPEAR ON THE OUTSIDE OF THE PACKAGE.

Overshipments will not be accepted unless authorized by Buyer prior to shipment.

RECEIVING HOURS: 7:00am - 11:45am 12:30pm - 4:00pm Phone Number: 650-926-2300.

Approved Vendor:
Vat Inc

PO Line	Req Line	Qty	Unit Price	Unit	P.O. Cost	Description	Due Date	Charge No.	Location	Date Receive
1	1	4	510.00	EA	2,040.00	B280 - Vat Valve series 54 part number 54032-GE02.	4/27/2006	9242151	280B - 240	05/02/06

Voucher Information:

Vndr	Invoice	Invoice Date	Vchr	Acctg Date	PO ID	PO Line	Description	Chrg No.	Qty	Amount
787	775219	6/1/2006	215565	6/21/2006	62235	1.1	B280 - Vat Valve series 54 par	9242151	4	\$2,040.00
Totals									4	\$2,040.00

Payment Information:

Voucher	Vendor	Payment Method	Date	Paid Check#	Amount
215565	787	System Check	6/30/2006	042105	\$2,061.98
215565	787	System Check	6/30/2006	042105	\$.00
Totals					\$2,061.98

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

787	796132	7/18/2007	245568	7/26/2007	69839	1.1	0477-003, 24VDC D	9509026	1	\$1,939.59
Totals									1	\$1,939.59

Payment Information:

Voucher	Vendor	Payment Method	Date	Paid Check#	Amount
245568	787	System Check	8/17/2007	059772	\$1,939.59
Totals					\$1,939.59

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



150 Freeport Road
 Pittsburgh, Pennsylvania 15238
 (412) 828-9040
 Fax: (412) 826-0399

QUOTATION - 10132

DATE: **September 26, 2007** PLEASE REFER TO ABOVE NUMBER WHEN ORDERING

QUOTATION TO:
 Mr. John Bozek
 Linac Coherent Light Source
 Stanford Linear Accelerator Center
 2575 Sand Hill Road, Mail Stop 18
 Menlo Park, CA 94025
 Tel: 650-926-5091
 email: jdbozek@slac.stanford.edu

CUSTOMER REFERENCE:

SALES REPRESENTATIVE IN YOUR AREA:
The Mark Maidman Co.
 P.O. Box 33212
 Los Gatos, CA 95031
 Phone: 408-531-1312

WE SUBMIT THE FOLLOWING QUOTATION

ITEM	QUANTITY		UNIT PRICE	PRICE
------	----------	--	------------	-------


1	✓	1	<p>DM300MS - Dycor Dymaxion Mass Spectrometer: Complete with Dymaxion Electronics Unit and 1-300 AMU range Analyzer head, with Open Ion Source, Faraday Cup and Channel Plate Electron Multiplier detectors, and 24VDC power supply. Also includes System 2000 Single Sensor software for Windows 95 through XP * The Dymaxion Electronics Unit consists of a Smart Sensor electronic box, that mounts directly onto the sensor head. Two RS-485 ports allow the analyzer to be linked directly to a PC host running the Dycor System 2000 software for Windows 95 through XP, or multiple units looped together. An RS-232 port is also provided, which may be used to interface with any other PC or laptop for local monitoring or control * PC not included with system. PC supplied by customer must include the following minimum features: IBM compatible Pentium-class processor, 133 MHz computer, 16MB RAM with Windows 95 through XP capabilities</p>	\$16,200.00
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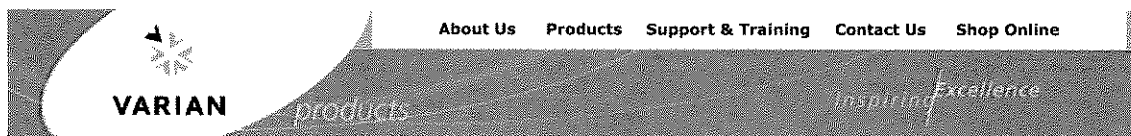
TOTAL, F.O.B. PITTSBURGH, PA **\$16,200.00**

Delivery: 6 - 8 weeks A.R.O. Terms: Net 30, with credit approval FOB/Shipping Point: Pittsburgh, PA Validity of Quotation: 60 days

EXPORT CONTROL CLAUSE:
 As required by U.S. Export Law, these products must not be destined for facilities or activities involving nuclear, chemical or biological weapons, or related missile delivery systems, in named countries or regions.

THIS QUOTATION IS SUBJECT TO ALL TERMS AND CONDITIONS SHOWN ABOVE AND ON REVERSE SIDE OF THIS SHEET.

AMETEK
 by 
 Donald Athey



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ORDERING INFORMATION

Leak Detection Models

- VS Series Automatic Mass-Spec.
- 959 Manual Mass-Spec.
- PHD-4 Sniffer
- 990 Component



North America

- Toll-free: 1.800.882.7426
- E-mail

Europe

- Toll-free: 00.800.234.234.00
- E-mail

Additional Support

- [More Contact Info](#)
- [FAQs](#)

VS Series Automatic Portable Leak Detectors

Technical Specifications

Model names and types of primary pump

PR02 (portable)	DS-42 intrnl. rotary-vane pump
MR15 (mobile)	DS-302 rotary-vane pump
MD30 (mobile)	TS-620 dry scroll pump
BR15 (bench-mounted)	DS-302 rotary-vane pump
BD30 (bench-mounted)	TS-620 dry scroll pump

Minimum detectable leak at 1000 ppm ambient helium

atm-cc/sec helium	5×10^{-12}
mbar-liters/sec helium	5×10^{-12}
Pa-m ³ /sec helium	5×10^{-13}

Maximum test-port pressure	10 torr/13 mbar/1330 Pa
Helium pumping speed	1.8 l/sec at test port in fine test
Calibration routine	Automated or manual

Background helium suppression	Pushbutton-initiated auto zero and auto zero<zero
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User interface	High-clarity color touch screen
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Selectable languages	English, French, German, Japanese, Korean, Mandarin, Spanish
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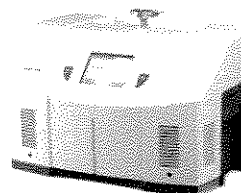
Programmable functions for auto cycling	Roughing time, test time, reject set points
-----------------------------------------	---------------------------------------------

Response time	<0.5 seconds
---------------	--------------

Set points (standard)	3 for leak rate, 1 for pressure, 1 for audio
-----------------------	----------------------------------------------

Communications interface	RS-232 at 9600 baud (DB-9S connector)
--------------------------	---------------------------------------

Conformance standards	UL/CSA, CE
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Quotation

JWP20060808-003

Page: 3

VARIAN

BROOKHAVEN NATIONAL LABORATORY, UPTON, NY

Item	Qty	Part #	Product Description	Unit Price	Discount	Extended Price
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Size, mm (in) 567 (22.3) L, 396 (15.6) W, 441 (17.4) H
Power Requirements 100 VAC, 50 Hz, or 115 VAC, 60 Hz, 20 A
Max. Branch Circuit Breaker: 20A w/ motor-rated delay

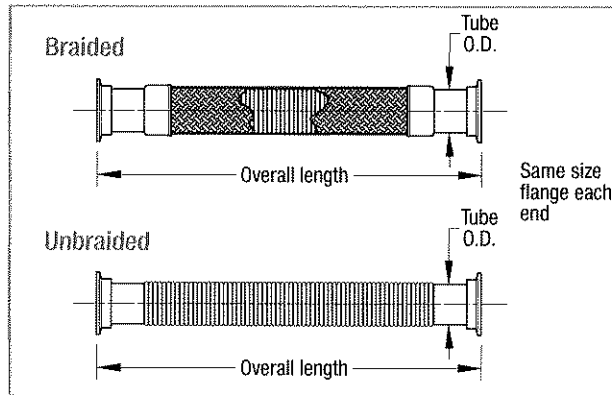
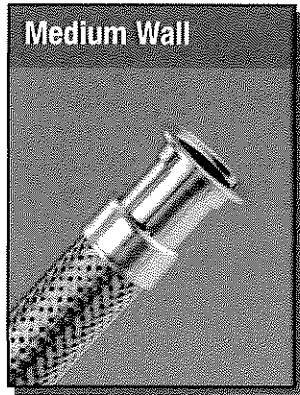
Note: Please order power-cord separately

Section Total \$	21,700.00	14.00 %	18,662.00
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Quotation Total \$	21,700.00	14.00 %	18,662.00
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Terms & Conditions of Sale

This offer is subject to credit approval and is exclusive of any applicable sales taxes or duties.



- Kwik-Flange™ and Large-Flange™
- Medium wall braided and unbraided
- Thin wall unbraided
- Other flanges, connectors and custom lengths available upon request

NOMINAL TUBE O.D.	ISO REF.	OVERALL LENGTH	WALL THK.	STATIC BEND RAD.	SPRING RATE	WT LB	REFERENCE	PART NUMBER	PRICE \$
BRAIDED									
3/4	NW16	18	.008	3	25	3	KFRL-075-18F2	440101	172
3/4	NW16	24	.008	3	19	3	KFRL-075-24F2	440103	192
3/4	NW16	36	.008	3	13	4	KFRL-075-36F2	440105	212
3/4	NW16	48	.008	3	11.5	5	KFRL-075-48F2	440107	232
1	NW25	18	.009	4.25	38	4	KFRL-100-18F2	440109	187
1	NW25	24	.009	4.25	28	4	KFRL-100-24F2	440111	197
1	NW25	36	.009	4.25	18	5	KFRL-100-36F2	440113	217
1	NW25	48	.009	4.25	16.5	6	KFRL-100-48F2	440115	237
1-1/2	NW40	18	.011	6.5	56	5	KFRL-150-18F2	440117	222
1-1/2	NW40	24	.011	6.5	40	6	KFRL-150-24F2	440121	237
1-1/2	NW40	36	.011	6.5	27	8	KFRL-150-36F2	440125	267
1-1/2	NW40	48	.011	6.5	25	9	KFRL-150-48F2	440129	297
2	NW50	18	.012	9	85	6	KFRL-200-18F2	440133	282
2	NW50	24	.012	9	63	9	KFRL-200-24F2	440135	297
2	NW50	36	.012	9	40	13	KFRL-200-36F2	440137	327
2	NW50	48	.012	9	34	15	KFRL-200-48F2	440139	357
2-1/2	NW63	18	.012	10	120	7	LFRL-250-18F2	440156	370
2-1/2	NW63	24	.012	10	82	10	LFRL-250-24F2	440157	390
2-1/2	NW63	36	.012	10	67	16	LFRL-250-36F2	440158	430
2-1/2	NW63	48	.012	10	58	19	LFRL-250-48F2	440159	470
3	NW80	18	.014	11	196	13	LFRL-300-18F2	440200	395
3	NW80	24	.014	11	150	17	LFRL-300-24F2	440201	415
3	NW80	36	.014	11	108	21	LFRL-300-36F2	440202	455
3	NW80	48	.014	11	88	25	LFRL-300-48F2	440203	495
4	NW100	18	.014	13	142	18	LFRL-400-18F2	440204	445
4	NW100	24	.014	13	108	22	LFRL-400-24F2	440205	470
4	NW100	36	.014	13	73	24	LFRL-400-36F2	440206	520
4	NW100	48	.014	13	80	28	LFRL-400-48F2	440207	570

Spring rates are in pounds per inch, axial

1.2.07.02 XPP Vacuum Hardware

NO BOE
FOR THIS
WBS:

1.2.07.02.01 XPP
Spools and Bellows

LUSI XPP Vacuum Hardware -- Bellows & Spools
WBS (1.2.7.2.1)

Estimator Kurita/Langton/Defever

Description: Vacuum Bellows & Spools, Excludes vacuum chambers for optics-diagnostics

Activity ID	DESCRIPTION	Part Number	Material	Man Months	Resource	Hours	QTY	Unit Cost [\$]	Direct Total	Source/Status of Estimate	Weight each (lb)	Weight total (lb)	Vendor	Note 1	Note 2
	PED														
	Sub Total								\$20.79K						
	<i>Spools: Design/Layouts</i>														
	Preliminary/Final				Engineer	20			\$1.15K	Langton					
	Preliminary/Final				Designer	40			\$2.72K	Langton					
XPP 08860	tot					60			\$3.87K						
	<i>Bellows: Design/Layouts</i>														
	Preliminary/Final				Engineer	20			\$1.15K	Langton					
	Preliminary/Final				Designer	40			\$2.72K	Langton					
XPP 08870	tot					60			\$3.87K						
	<i>Documentation</i>														
XPP 12000	Detail				Designer	120			\$8.16K	Langton					
XPP 12005	Checking				Designer	72			\$4.90K	Langton					
	MSL														
	Total								\$51.41K						
	Materials								\$37.83K						
	Labor								\$5.76K						
	Bellows Assy's														
XPP 15700	6" CF welded bellows assy	350-250-5-EE-6" CFF R, NR	SST				8	\$978.00	\$7.82K	Std Bellows Co. Q-22561					
	<i>Vacuum spools</i>														
	4" OD X 120" LG X 6"CFF						10	\$940.00	\$9.40K	Vendor Quote 20mar08			Nor-Cal		
	6" CFF cross	405033	SST				3	\$594.00	\$1.78K	MDC website					
	6" CFF tee	404040	SST				5	\$396.00	\$1.98K	MDC website					
	<i>Vacuum Flanges/Fittings</i>														
	6" Non-Rotatable CFF Blank	110018	SST				4	\$53.00	\$0.21K	MDC website					
	4.5" Non-Rotatable CFF Blank	110025	SST				4	\$77.00	\$0.31K	MDC website					
XPP 15630	6" Quartz window	450024					3	\$880.00	\$2.64K	MDC website					
	\$13.68K														
	<i>Fabrication</i>														
XPP 15660	Vacuum Process Spool				Precise Assy	80			\$5.76K	Kurita					
XPP 15730	Clean Fire Bellows						1	\$ 3,000.00	\$3.00K	Kurita					
XPP 15720	Inspect & Test (Leak Check) Bellows				Precise Assy	8			\$0.58K	Kurita					



QUOTATION

Customer: 191922
 JIM DEFEVER
 S L A C
 2575 SANDHILL RD
 MAILSTOP 43 A
 MENLO PARK CA 94025

NOR-CAL PRODUCTS, INC
 1967 SOUTH OREGON ST.
 P.O. BOX 518
 YREKA CA 96097 530-842-4457

RFQ:

Phone: 650-926-8531
Fax: 650-926-3615

Customer Email: DEFEVER@SLAC.STANFORD.EDU
Revision:

Estimate	Terms	Quote Date	Expiration Date	Salesperson	Customer Currency
255728	NET 30	8/27/2007	9/26/2007	881	US\$ US Dollar

Quantity	Item	List Price	Unit Price	Extended Price
12.000 EA	CUSTOM NIPPLE FULL NIPPLE,CF 10.00" X 20 FT OAL	2,285.00	2,285.00	27,420.00

QUOTED IN 304 STAINLESS STEEL
 STANDARD MILL FINISH ON TUBES.
 LEAK CHECKED TO 1X10-9 MBAR L/SEC.
 +/- .188 ON OAL
 +/- 1 DEGREE ON PERPENDICULARITY OF FLANGES
 ID/OD CLEANING SOAP & WATER ONLY NO CHEM-CLEAN AVAILABLE DUE TO OAL.
 ESTIMATED LEAD-TIME: 6 WEEKS ARO, PLUS TRANSIT.
 QUOTED BY MELISSA MACDONALD
 * DELIVERY TO BE CONFIRMED AT TIME OF ORDER PLACEMENT.
 *PLEASE REFERENCE ESTIMATE NUMBER ON YOUR PURCHASE ORDER.
 *FOB POINT: YREKA, CA
 * VISIT WWW.N-C.COM TO VIEW CAPABILITIES AND RELATED HARDWARE.
 *THANK YOU.

Sale Amount:	27,420.00
Sales Tax:	0.00
Misc Charges:	0.00
Total Amount:	27,420.00



MDC Vacuum Products Corp.

23842 Cabot Blvd., Hayward, CA 94545-1651

Phone: 510-265-3500 Fax: 510-887-0626 Toll Free: 800-443-8817

Email: sales@mdcvacuum.com Web: <http://www.mdcvacuum.com>

HIGH VACUUM COMPONENTS from one source

ATTN: John Gamble
SSRL
PO Box 4349

QUOTATION #: 01-47620-SP
DATE: 8/21/2007
PREPARED BY: Larry Bitz

Stanford, CA 94309

Email: gamble@slac.stanford.edu

PHONE: 650-926-8679

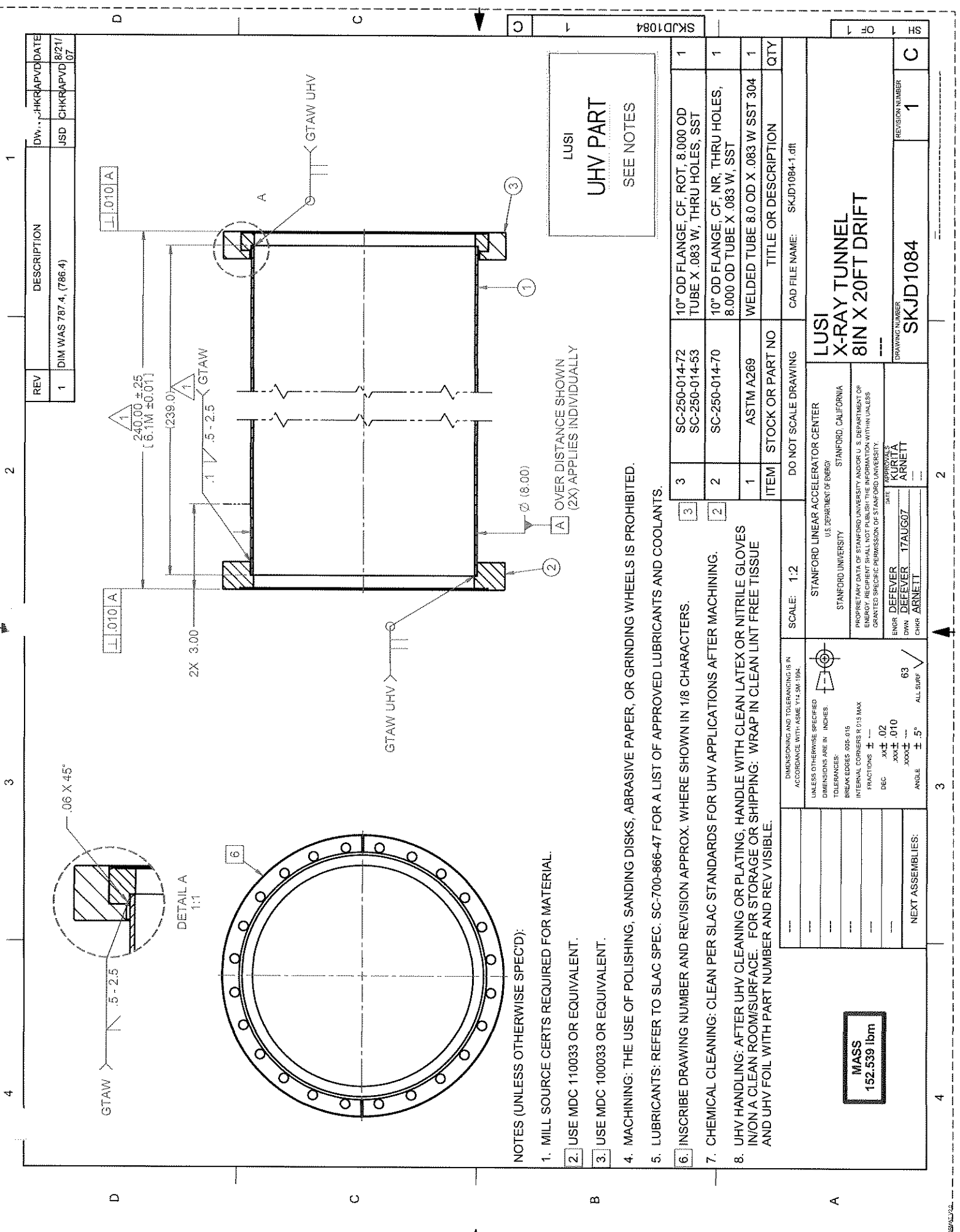
FAX: 650-926-3819

PLEASE DIRECT ANY ORDER OR INQUIRIES REGARDING THIS
QUOTATION TO THE PERSON LISTED ABOVE

TERMS	QUOTE FIRM FOR	F.O.B.	APPROX. DELIVERY
Net 30 Days	30 days	Hayward, CA	4 Weeks ARO

QTY	CATALOG / PART NUMBER AND DESCRIPTION	UNIT PRICE	TOTAL
<i>When placing an order for the items listed below, please return this quotation with a purchase order.</i>			
1	Spec-FF Special Flanges / Fittings X-RAY TUNNEL 8IN X 20FT DRIFT TUBE PER SKETCH SKJD1084 REV 1 STANDARD TUBE FINISH FOR ASTM A269. TUBE FINISH CAN BE GLASS SHOT IF REQUIRED. CLEANED PER STANDARD MDC PRACTICE.	\$4,300.00	\$4,300.00
TOTAL:			\$4,300.00





REV	DESCRIPTION	DW...CHKR	APVD	DATE
1	DIM WAS 787.4, (786.4)	JSD	CHKR	APVD 8/21/07

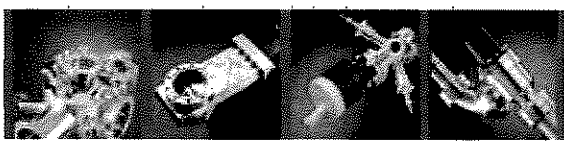
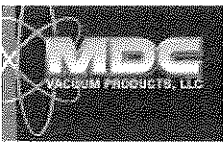
ITEM	STOCK OR PART NO	TITLE OR DESCRIPTION	QTY
3	SC-250-014-72 SC-250-014-53	10" OD FLANGE, CF, ROT, 8.000 OD TUBE X .083 W, THRU HOLES, SST	1
2	SC-250-014-70	10" OD FLANGE, CF, NR, THRU HOLES, 8.000 OD TUBE X .083 W, SST	1
1	ASTM A269	WELDED TUBE 8.0 OD X .083 W SST 304	1

DO NOT SCALE DRAWING		CAD FILE NAME: SKJD1084-1.dft
LUSI X-RAY TUNNEL 8IN X 20FT DRIFT		
STANFORD LINEAR ACCELERATOR CENTER STANFORD UNIVERSITY U.S. DEPARTMENT OF ENERGY		DRAWING NUMBER SKJD1084
<small>PROPRIETARY DATA OF STANFORD UNIVERSITY AND/OR U.S. DEPARTMENT OF ENERGY. RECIPIENT SHALL NOT PUBLISH THE INFORMATION WITHIN UNLESS GRANTED SPECIFIC PERMISSION OF STANFORD UNIVERSITY.</small>		REVISION NUMBER 1
<small>APPROVALS</small> ENGR DEFEVER 17AUG07 DWN DEFEVER CHR ARNETT		SKJD1084 1

- NOTES (UNLESS OTHERWISE SPEC'D):
1. MILL SOURCE CERTS REQUIRED FOR MATERIAL.
 2. USE MDC 110033 OR EQUIVALENT.
 3. USE MDC 100033 OR EQUIVALENT.
 4. MACHINING: THE USE OF POLISHING, SANDING DISKS, ABRASIVE PAPER, OR GRINDING WHEELS IS PROHIBITED.
 5. LUBRICANTS: REFER TO SLAC SPEC. SC-700-866-47 FOR A LIST OF APPROVED LUBRICANTS AND COOLANTS.
 6. INSCRIBE DRAWING NUMBER AND REVISION APPROX. WHERE SHOWN IN 1/8 CHARACTERS.
 7. CHEMICAL CLEANING: CLEAN PER SLAC STANDARDS FOR UHV APPLICATIONS AFTER MACHINING.
 8. UHV HANDLING: AFTER UHV CLEANING OR PLATING, HANDLE WITH CLEAN LATEX OR NITRILE GLOVES IN/ON A CLEAN ROOM/SURFACE. FOR STORAGE OR SHIPPING: WRAP IN CLEAN LINT FREE TISSUE AND UHV FOIL WITH PART NUMBER AND REV VISIBLE.

DIMENSIONING AND TOLERANCING IS IN ACCORDANCE WITH: ASME Y14.5M-1994.		SCALE: 1:2
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		63
TOLERANCES:		ALL SURF ✓
BREAK EDGES 0.05-0.15		
INTERNAL CORNERS R 0.15 MAX		
FRACTIONS: ±		
DEC: .xx ± .02		
.xxx ± .010		
.xxxx ±		
ANGLE ± 5°		

MASS
152.539 lbrm



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Flanges & Fittings
Del-Seal CF Fittings - Crosses

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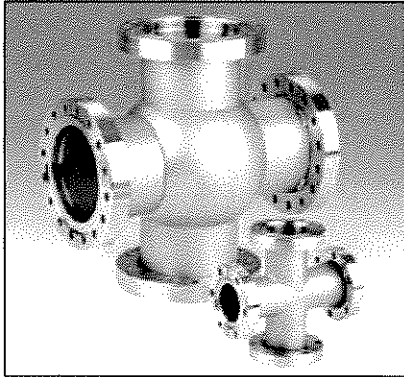
[Four-Way Crosses](#)

[Reducing Crosses](#)

[Five-Way Crosses](#)

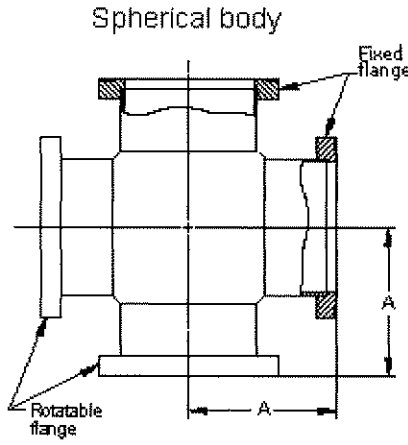
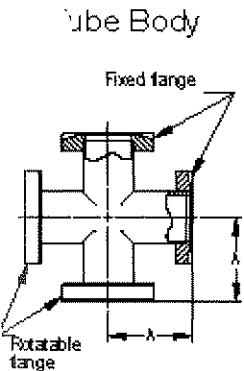
[Six-Way Crosses](#)

Four-Way Crosses



Features

- UHV rated to 1×10^{-13}
- High temperature rated to 450°C
- OFE Copper or optional Viton® elastomer gaskets
- Clearance bolt holes
- Conflat® compatible design
- Standard matte finish
- Each axis has one rotatable flange
- Body type dependent on tube size



Specifications	
Material	
Flanges	304ss
Gaskets	OFE copper
Bolts	300ss and 300ss silver plated
Fastening	
Bolt Type	Hexagonal, 12-point or socket head
Nut Type	Hexagonal or two hole plate nuts
Size / Torque	See individual flange specs.
Vacuum Range	1×10^{-13}
Leak Test	2×10^{-10} cc/sec of He
Temperature Range	-200°C to 450°C
For conversion tables click here	

For any question on this Section Ask our Experts

There are 12 parts in this category. Scroll down to browse the result tables.

For more details, available options and accessories click on desired Part Number link.

In case you already have a list of parts to purchase go to Fast Entry.

All "In Stock" parts ships same business day as ordered. Lead Time indicates business days.

Drawings download if available are indicated by in the Part Number column. Click on to go to Downloads Page

NOMINAL FLANGE	FLANGE O.D.	TUBE O.D.	TUBE WALL	BODY TYPE	SPHERE O.D.	SPHERE WALL	A	WT LB	Part Number & Reference No.	UOM	List Price*	Your Net Price*	Lead Time	Quantity
-1	1.33	.75	.035	TUBE	-	-	1.50	1/4	405000 REF# 075-4	EACH	99.00	99.00	In Stock	<input type="button" value="Buy"/>
-1/8	2.11	1.00	.065	TUBE	-	-	2.04	1/4	405001 REF# 100-4	EACH	110.00	110.00	30 days	<input type="button" value="Buy"/>
-3/4	2.73	1.50	.065	TUBE	-	-	2.46	3/4	405002 REF# 150-4	EACH	121.00	121.00	30 days	<input type="button" value="Buy"/>
-3/8	3.37	2.00	.065	TUBE	-	-	3.23	1	405003 REF# 200-4	EACH	297.00	297.00	30 days	<input type="button" value="Buy"/>

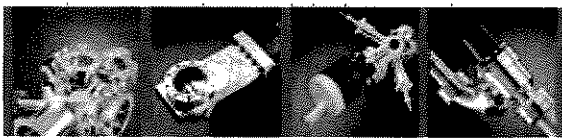
-1/2	4.47	2.50	.005	TUBE	-	-	3.58	3		EACH	558.00	558.00		Buy
-5/8	4.62	3.00	.065	TUBE	-	-	3.63	4	405032 REF# 300-4	EACH	495.00	495.00	30 days	Buy
	5.97	4.00	.083	TUBE	-	-	4.31	6	405033 REF# 400-4T	EACH	594.00	594.00	30 days	Buy
	5.97	4.00	.120	SPHERE	6-1/4	.120	5.31	6	405006 REF# 400-4S	EACH	1,320.00	1,320.00	In Stock	Buy
-3/4	6.75	5.00	.120	SPHERE	9	.120	4.93	6	405007 REF# 500-4S	EACH	1,100.00	1,100.00	40 days	Buy
	7.97	6.00	.120	SPHERE	9	.120	6.56	10- 1/2	405008 REF# 600-4S	EACH	1,870.00	1,870.00	45 days	Buy
0	9.97	8.00	.120	SPHERE	12	.120	8.00	16- 3/4	405009 REF# 800-4S	EACH	2,970.00	2,970.00	In Stock	Buy
3-1/4	13.25	10.00	.120	SPHERE	16	.120	10.00	20	405010 REF# 1000- 4S	EACH	Call	Call	45 days	Buy

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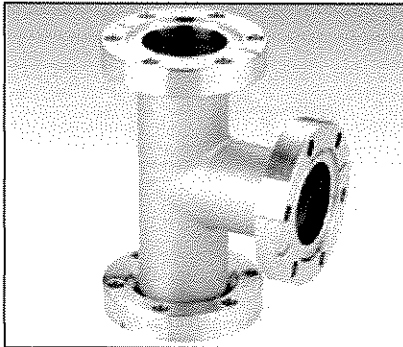
Flanges & Fittings
Del-Seal CF Fittings - Tees

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[Tee](#)

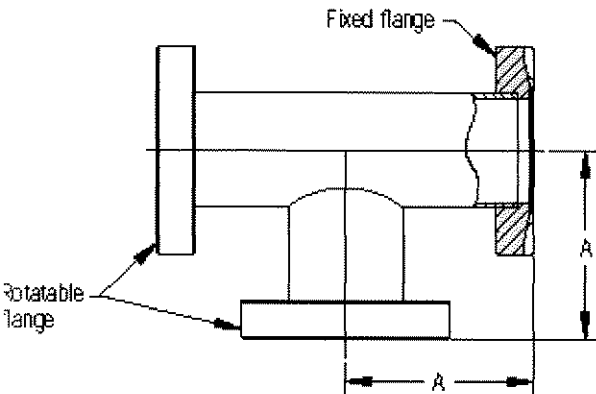
[Reducing Tees](#)

Tee



Features

- UHV rated to 1×10^{-13}
- High temperature rated to 450°C
- OFE Copper or optional Viton® elastomer gaskets
- Clearance bolt holes
- Conflat® compatible design
- Standard matte finish
- Each axis has one rotatable flange



Specifications	
Material	
Flanges	304ss
Gaskets	OFE copper
Bolts	300ss and 300ss silver plated
Fastening	
Bolt Type	Hexagonal, 12-point or socket head
Nut Type	Hexagonal or two hole plate nuts
Size / Torque	See individual flange specs.
Vacuum Range	1×10^{-13}
Leak Test	2×10^{-10} cc/sec of He
Temperature Range	-200°C to 450°C
For conversion tables click here	

For any question on this Section Ask our Experts

There are 11 parts in this category. Scroll down to browse the result tables.

For more details, available options and accessories click on desired Part Number link.

In case you already have a list of parts to purchase go to [Fast Entry](#).

All "In Stock" parts ships same business day as ordered. Lead Time indicates business days.

Drawings download if available are indicated by in the Part Number column. Click on to go to Downloads Page

NOMINAL FLANGE	FLANGE O.D.	TUBE O.D.	TUBE WALL	A	WT LB	Part Number & Reference No.	UOM	List Price*	Your Net Price*	Lead Time	Quantity	
-1/3	1.33	.75	.035	1.50	1/2	404000 REF# 075-3	EACH	75.00	75.00	In Stock	<input type="text"/>	Buy
-1/8	2.11	1.00	.065	2.04	1-1/2	404001 REF# 100-3	EACH	83.00	83.00	In Stock	<input type="text"/>	Buy
-1/2	2.73	1.50	.065	2.46	2	404002 REF# 150-3	EACH	91.00	91.00	25 days	<input type="text"/>	Buy
-3/8	3.37	2.00	.065	3.23	4	404003 REF# 200-3	EACH	231.00	231.00	20 days	<input type="text"/>	Buy
-1/2	4.47	2.50	.065	3.38	8	404038 REF# 250-3	EACH	275.00	275.00	30 days	<input type="text"/>	Buy
-5/8	4.62	3.00	.065	3.63	9	404039 REF# 300-3	EACH	336.00	336.00	30 days	<input type="text"/>	Buy

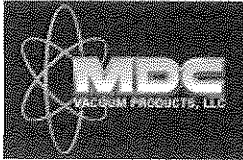
	5.97	4.00	.083	4.31	15	REF# 400-3	EACH	396.00	396.00	30 days	<input type="checkbox"/>	Buy
-3/4	6.75	5.00	.120	4.93	16	404007 REF# 500-3	EACH	583.00	583.00	20 days	<input type="checkbox"/>	Buy
	7.97	6.00	.109	6.12	25	404041 REF# 600-3	EACH	616.00	616.00	In Stock	<input type="checkbox"/>	Buy
0	9.97	8.00	.109	7.50	26	404042 REF# 800-3	EACH	1,100.00	1,100.00	30 days	<input type="checkbox"/>	Buy
3-1/4	13.25	10.00	.120	10.00	38	404010 REF# 1000-3	EACH	Call	Call	45 days	<input type="checkbox"/>	Buy

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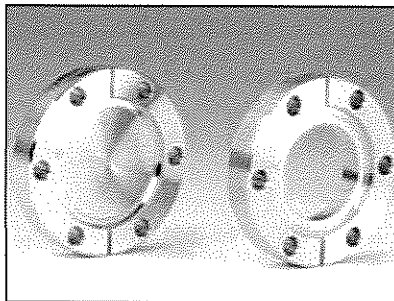
Flanges & Fittings
Del Seal CF Flanges - 2-3/4 Inch OD

Introduction

Nonrotatable

Rotatable

Nonrotatable



Features

- UHV rated to 1×10^{-13}
- High temperature rated to 450°C
- Rotatable and nonrotatable geometrics
- OFE Copper or optional Viton® elastomer gasket
- Tapped or clearance bolt holes
- Conflat® compatible design

Figure 1

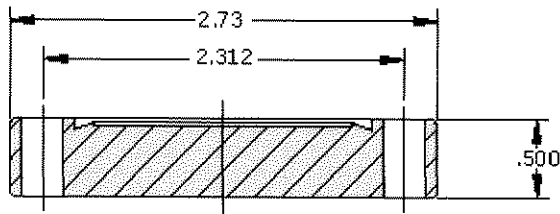
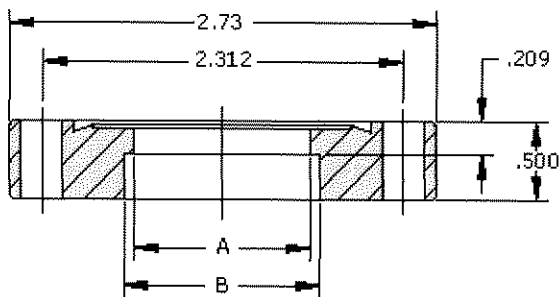


Figure 2



Specifications	
Material	
Flanges	
Gaskets	
Bolts	300ss and 300ss s
Fastening	
Bolt Type	Hexagonal or 12
Nut Type	Hexagonal ot tw
Size	0.
Torque	
Vacuum Range	
Temperature Range	-200'
Dimensions	2.73 OD x 1.375 ID
For conversion tables click here	

For any question on this Section Ask our Experts

There are 16 parts in this category. Scroll down to browse the result tables.

For more details, available options and accessories click on desired Part Number link.

In case you already have a list of parts to purchase go to [Fast Entry](#).

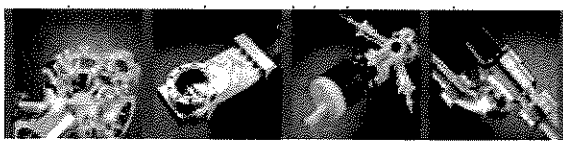
All "In Stock" parts ships same business day as ordered. Lead Time indicates business days.

Drawings download if available are indicated by in the Part Number column. Click on to go to Downloads Pa

ID	BOLT HOLE	A	B	C	FIG	HOLE	HOLE	WT	Part Number & Reference No.	UOM	List Price*	Your Net Price*	Lead Time	Qua
NOMINAL						DIAM	THREAD	LB					Time	
BLANK	CLEARANCE	-	-	-	1 6	0.265	-	1	110008 REF# F275000	EACH	14.00	14.00	10 days	

1/4	CLEARANCE	-	0.252	- 2	6	0.265	-	3/4	110009 REF# F275025	EACH	14.00	14.00	In Stock
1/2	CLEARANCE	-	0.502	- 2	6	0.265	-	3/4	110010 REF# F275050	EACH	14.00	14.00	In Stock
3/4	CLEARANCE	0.690	0.760	- 2	6	0.265	-	3/4	110011 REF# F275075	EACH	14.00	14.00	In Stock
1	CLEARANCE	0.875	1.010	- 2	6	0.265	-	3/4	110012 REF# F275100	EACH	14.00	14.00	10 days
1-1/4	CLEARANCE	1.125	1.255	- 2	6	0.265	-	3/4	110013 REF# F275125	EACH	14.00	14.00	In Stock
1-1/2	CLEARANCE	1.375	1.510	- 2	6	0.265	-	3/4	110014 REF# F275150	EACH	14.00	14.00	10 days
1-3/4	CLEARANCE	1.625	1.760	- 2	6	0.265	-	3/4	110052 REF# F275175	EACH	14.00	14.00	10 days
BLANK	TAPPED	-	-	- 1	6	-	0.250-28	1	130008 REF# F275000T	EACH	20.00	20.00	In Stock
1/4	TAPPED	-	0.252	- 2	6	-	0.250-28	3/4	130009 REF# F275025T	EACH	20.00	20.00	In Stock
1/2	TAPPED	-	0.502	- 2	6	-	0.250-28	3/4	130010 REF# F275050T	EACH	20.00	20.00	10 days
3/4	TAPPED	0.690	0.760	- 2	6	-	0.250-28	3/4	130011 REF# F275075T	EACH	20.00	20.00	In Stock
1	TAPPED	0.875	1.010	- 2	6	-	0.250-28	3/4	130012 REF# F275100T	EACH	20.00	20.00	In Stock
1-1/4	TAPPED	1.125	1.255	- 2	6	-	0.250-28	3/4	130013 REF# F275125T	EACH	20.00	20.00	In Stock
1-1/2	TAPPED	1.375	1.510	- 2	6	-	0.250-28	3/4	130014 REF# F275150T	EACH	20.00	20.00	In Stock
1-3/4	TAPPED	1.625	1.760	- 2	6	-	0.250-28	3/4	130094 REF# F275175T	EACH	20.00	20.00	In Stock

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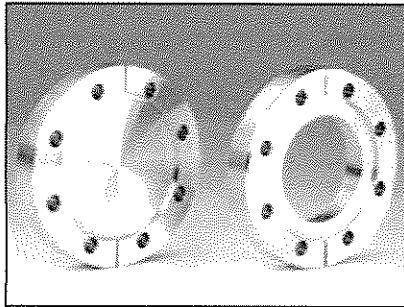
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Flanges & Fittings Del Seal CF Flanges - 4-1/2 Inch OD

[Introduction](#) [Nonrotatable](#) [Rotatable](#)
Nonrotatable



Features

- UHV rated to 1×10^{-13}
- High temperature rated to 450°C
- Rotatable and nonrotatable geometrics
- OFE Copper or optional Viton® elastomer gaskets
- Tapped or clearance bolt holes
- Conflat® compatible design

Figure 1

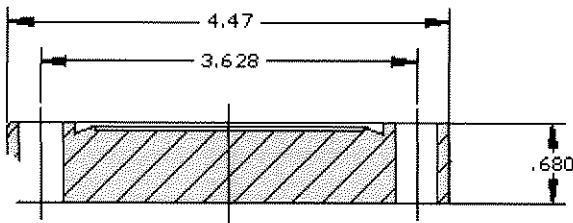
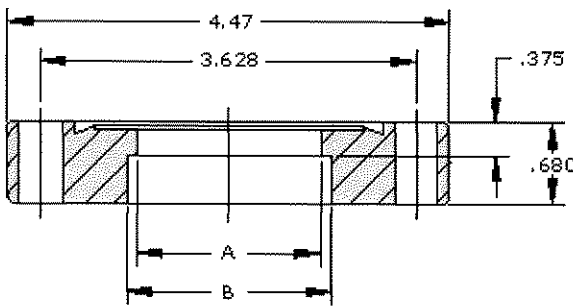


Figure 2



Specifications	
Material	
Flanges	304ss
Gaskets	OFE copper
Bolts	300ss and 300ss silver plated
Fastening	
Bolt Type	Hexagonal or 12-point head
Nut Type	Hexagonal or two hole plate nuts
Size	0.312-24 UNF
Torque	15 lb-ft
Vacuum Range	1×10^{-13}
Temperature Range	-200°C to 450°C
Dimensions	4.47 OD x 2.510 ID maximum
For conversion tables click here	

For any question on this Section Ask our Experts

There are 8 parts in this category. Scroll down to browse the result tables.

For more details, available options and accessories click on desired [Part Number](#) link.

In case you already have a list of parts to purchase go to [Fast Entry](#).

All "In Stock" parts ships same business day as ordered. Lead Time indicates business days.

Drawings download if available are indicated by in the Part Number column. Click on to go to Downloads Page

ID	OMINAL	BOLT HOLE	A	B	FIG	HOLES	HOLE DIAM	HOLE THREAD	WT LB	Part Number & Reference No.	UOM	List Price*	Your Net Price*	Lead Time	Quantity
	LANK	CLEARANCE	-	-	1	8	0.332	-	3	110018 REF# F450000	EACH	53.00	53.00	10 days	<input type="text"/> <input type="button" value="Buy"/>
	-1	CLEARANCE	1.375	1.510	2	8	0.332	-	2-1/2	110019 REF# F450150	EACH	53.00	53.00	In Stock	<input type="text"/> <input type="button" value="Buy"/>
		CLEARANCE	1.875	2.010	2	8	0.332	-	2	110020 REF# F450200	EACH	53.00	53.00	10 days	<input type="text"/> <input type="button" value="Buy"/>
	-1/2	CLEARANCE	2.375	2.510	2	8	0.332	-	2	110021 REF# F450250	EACH	53.00	53.00	10 days	<input type="text"/> <input type="button" value="Buy"/>

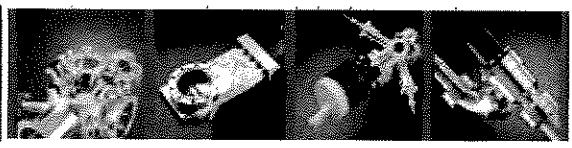
LINK	TAPPED			1	8	-	0.312-24	3		EACH	63.00	63.00		Buy
-1/2	TAPPED	1.375	1.510	2	8	-	0.312-24	2- 1/2	130019	EACH	63.00	63.00	In Stock	Buy
	TAPPED	1.875	2.010	2	8	-	0.312-24	2	130020	EACH	63.00	63.00	30 days	Buy
	TAPPED	2.375	2.510	2	8	-	0.312-24	2	130021	EACH	63.00	63.00	20 days	Buy
									REF# F450150T					
									REF# F450200T					
									REF# F450250T					

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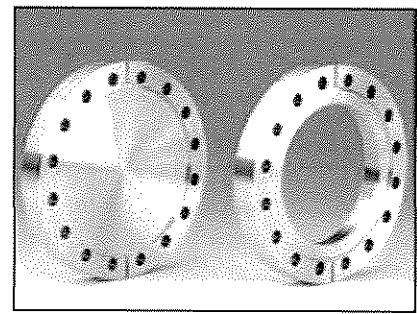
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Flanges & Fittings
Del Seal CF Flanges - 6 Inch OD

Introduction **Nonrotatable** **Rotatable**

Nonrotatable



Features

- UHV rated to 1×10^{-13}
- High temperature rated to 450°C
- Rotatable and nonrotatable geometrics
- OFE Copper or optional Viton® elastomer gaskets
- Tapped or clearance bolt holes
- Conflat® compatible design

Figure 1

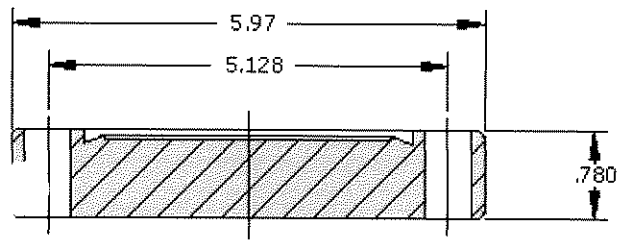
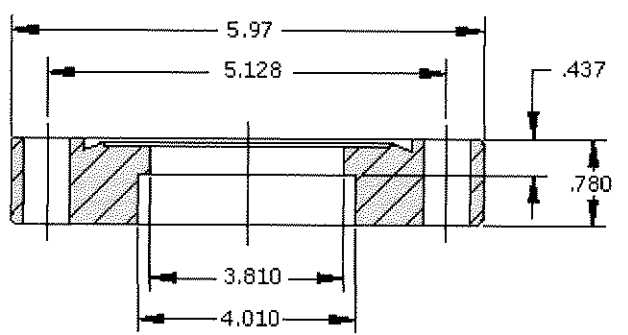


Figure 2



Specifications	
Material	
Flanges	304ss
Gaskets	OFE copper
Boilts	300ss and 300ss silver plated
Fastening	
Bolt Type	Hexagonal or 12-point head
Nut Type	Hexagonal ot two hole plate nuts
Size	0.312-24 UNF
Torque	15 lb-ft
Vacuum Range	1×10^{-13}
Temperature Range	-200°C to 450°C
Dimensions	5.97 OD x 3.810 ID maximum
For conversion tables click here	

For any question on this Section Ask our Experts

There are 4 parts in this category. Scroll down to browse the result tables.
For more details, available options and accessories click on desired Part Number link.
 In case you already have a list of parts to purchase go to [Fast Entry](#).
 All "In Stock" parts ships same business day as ordered. Lead Time indicates business days.

Drawings download if available are indicated by in the Part Number column. Click on to go to Downloads Page

ID	OMINAL	BOLT HOLE	A	B	FIG HOLES	HOLE DIAM	HOLE THREAD	WT LB	Part Number & Reference No.	UOM	List Price*	Your Net Price*	Lead Time	Quantity
LA	CLEARANCE	-	-	1	16	0.332	-	5-1/2	110025 REF# F600000	EACH	77.00	77.00	In Stock	<input type="text"/> <input type="button" value="Buy"/>
	CLEARANCE	3.810	4.010	2	16	0.332	-	3-1/2	110026 REF# F600400	EACH	77.00	77.00	10 days	<input type="text"/> <input type="button" value="Buy"/>
LANK	TAPPED	-	-	1	16	-	0.312-24	5-1/2	130025 REF# F600000T	EACH	97.00	97.00	In Stock	<input type="text"/> <input type="button" value="Buy"/>
	TAPPED	3.810	4.010	2	16	-	0.312-24	3-1/2	130026 REF# F600400T	EACH	97.00	97.00	In Stock	<input type="text"/> <input type="button" value="Buy"/>

1.2.07.02.02 XPP Vacuum Supports

LUSI XPP Vacuum Supports
WBS 1.2.7.2.2

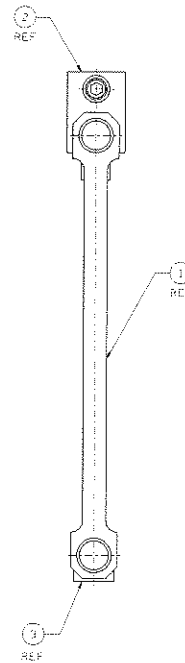
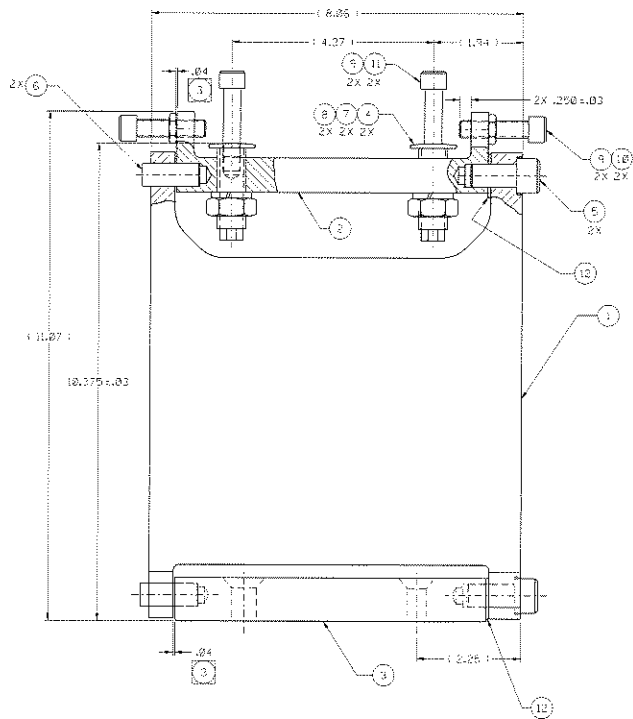
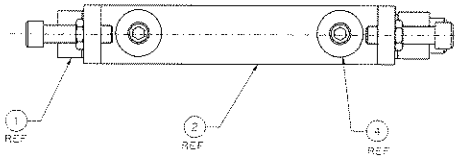
Estimator Langton/Defever

Description: This represents all the hardware to statically support and align the optics vacuum chambers and drift tubes

ACTIVITY ID	DESCRIPTION	Part Number	Material	Man Months	Resource	Hours	QTY	Unit Cost [\$]	Direct Total	Source/Status of Estimate	Weight each (lb)	Weight total (lb)	Vendor	Note 1	Note 2
	MSL														
XPP 16290	Procurements								\$4.50K						
	Drift Tube Support Assy	Similar to SA-341-401-30					5	\$ 400.00	\$2.00K	MFD Fab records			MFD		
	Welded Steel Frame (drift tube-to-floor)	Similar to SA-380-737-39					5	\$ 400.00	\$2.00K	MFD Fab records			MFD		
	Miscellaneous + support plate						5	\$ 100.00	\$0.50K	MFD Fab records					

Detail	Quantity	Estimated	Actual	Variance	Projected	Est. Total Hours	Act. Total Hours	Var. Total Hours
23267/1 - OTRDMP CHMBR & SUPPRT ASSY	1	30,725.36	35,921.70	-5,196.34	39,241.76			
10 MFG_COORD - Manufacturing Coordination	1	2,865.00	3,192.00	-327.00	3,363.90	30.00	37.00	-7.00
15 LIGHTMS_CUT - Material Cutting & Handling	1	382.00	0.00	382.00	382.00	4.00	0.00	4.00
20 MFG_COORD - Manufacturing Coordination	1	27,478.36	32,729.70	-5,251.34	35,495.86	0.01	0.00	0.01
23267-1/1 - CHMBR & SUPPRT ASSY SA-380-528-01	1	27,477.40	32,729.70	-5,252.30	35,494.90			
10 MTLFNESH - Metal Finishing Shop	1	459.00	508.30	-49.30	508.30	3.00	3.50	-0.50
20 VAC_ASSY - Vacuum Shop	1	21,903.40	29,237.65	-7,334.25	29,237.65	28.00	26.50	1.50
ITEM 9, FLANGE BOLT, 12 PT, 5/16-24 X 1.50, SST, SILVER PLTD, (24 EA.) ON ORDER BY	24	37.92	0.00	37.92	0.00			
53-296-002-10 - WASHER, FLAT, SST, #10	4	6.32	6.32	0.00	6.32			
ITEM 11, SCREW, CAP, SCH, HEX, #10-32 UNF-24 X .625, 316 SST, (4 EA.) ON ORDER BY	4	0.84	0.84	0.00	0.84			
53-281-014-03 - SCREW CAP SKT SS 10-32x1/2	14	2.94	2.94	0.00	2.94			
ITEM 14, VIEWPORT, FUSED SILICA, ZERO PROFILE, 3.38 OD, MDC P/N 450021, (1 EA.) O	1	0.00	198.00	-198.00	198.00			
ITEM 15, VIEWPORT, FUSED SILICA, ZERO PROFILE, 6.00 OD, MDC P/N 450024, (1 EA.) O	1	0.00	720.00	-720.00	720.00			
23267-2/1 - CHAMBER SUPPORT ASSY SA-380-724-02	1	4,984.57	5,665.20	-680.63	5,665.20			
10 MTLFNESH - Metal Finishing Shop	1	487.90	139.40	348.50	139.40	3.50	1.00	2.50
20 VAC_ASSY - Vacuum Shop	1	4,496.67	5,525.80	-1,029.13	5,525.80	24.00	8.00	16.00
23267-3/1 - BASE WELDMENT SA-380-724-56	1	1,452.00	2,182.80	-730.80	2,182.80			
10 MTLFNESH - Metal Finishing Shop	1	627.30	278.80	348.50	278.80	4.50	2.00	2.50
20 VAC_ASSY - Vacuum Shop	1	460.70	1,347.20	-886.50	1,347.20	2.00	7.50	-5.50
23267-4/1 - STANDOFF, 3/8-16 UNC, PF-380-724-27	1	12.50	80.00	-67.50	80.00			
10 OV MACHINE - Outside Machining	1	0.00	55.00	-55.00	55.00	0.00	0.00	0.00
20 QUALITY - Quality Control	1	12.50	25.00	-12.50	25.00	0.25	0.50	-0.25
23267-5/1 - DUAL STANDOFF, 3/8-16 UNC, PF-380-724-29	1	12.50	63.00	-50.50	63.00			
10 OV MACHINE - Outside Machining	1	0.00	38.00	-38.00	38.00	0.00	0.00	0.00
20 QUALITY - Quality Control	1	12.50	25.00	-12.50	25.00	0.25	0.50	-0.25
23267-6/1 - SMALL ADJUSTMENT PLATE, PF-380-724-82	1	25.00	90.00	-65.00	90.00			
10 OV MACHINE - Outside Machining	1	0.00	65.00	-65.00	65.00	0.00	0.00	0.00
20 QUALITY - Quality Control	1	25.00	25.00	0.00	25.00	0.50	0.50	0.00
23267-7/1 - DOUBLE SUPPORT TOP PLATE, PF-380-724-83	1	25.00	110.00	-85.00	110.00			
10 OV MACHINE - Outside Machining	1	0.00	85.00	-85.00	85.00	0.00	0.00	0.00
20 QUALITY - Quality Control	1	25.00	25.00	0.00	25.00	0.50	0.50	0.00
23267-8/1 - DOUBLE SUPPORT COLUMN, PF-380-724-84	1	102.10	139.60	-37.50	139.60			
10 LMS_CENTRAL - LIGHTMS - Central Lab Location	1	89.60	89.60	0.00	89.60	1.00	1.00	0.00
20 QUALITY - Quality Control	1	12.50	50.00	-37.50	50.00	0.25	1.00	-0.75
23267-9/1 - SINGLE SUPPORT COLUMN, PF-380-724-85	1	102.10	164.60	-62.50	164.60			
10 LMS_CENTRAL - LIGHTMS - Central Lab Location	1	89.60	89.60	0.00	89.60	1.00	1.00	0.00
20 QUALITY - Quality Control	1	12.50	75.00	-62.50	75.00	0.25	1.50	-1.25
23267-10/1 - BASE PLATE, PF-380-724-86	1	37.50	160.00	-122.50	160.00			
10 OV MACHINE - Outside Machining	1	0.00	135.00	-135.00	135.00	0.00	0.00	0.00
20 QUALITY - Quality Control	1	37.50	25.00	12.50	25.00	0.75	0.50	0.25
30 WELD - Weld Shop (Welders)	1	140.00	288.00	-148.00	288.00	2.00	4.00	-2.00
40 LMS_CENTRAL - LIGHTMS - Central Lab Location	1	224.00	268.80	-44.80	268.80	2.50	3.00	-0.50
23267-11/1 - STRUT BODY, 3/8-24 X 2.00 LG, SA-380-724-35	3	548.96	961.00	-412.04	961.00			
10 OV MACHINE - Outside Machining	3	0.00	825.00	-825.00	825.00	0.00	0.00	0.00
20 QUALITY - Quality Control	3	75.00	100.00	-25.00	100.00	1.50	2.00	-0.50
30 MTLFNESH - Metal Finishing Shop	3	316.46	0.00	316.46	0.00	2.25	0.00	2.25
40 WELD - Weld Shop (Welders)	3	157.50	36.00	121.50	36.00	2.25	0.50	1.75
ITEM 2, THREADED SHAFT COLLAR, ONE PIECE, LOW PROFILE, 303 SST, 3/8-24 UNF	3	0.00	0.00	0.00	0.00			
ITEM 3, THREADED SHAFT COLLAR, ONE PIECE, LOW PROFILE, 303 SST, 3/8-24 UNF	3	0.00	0.00	0.00	0.00			
23267-12/1 - STRUT BODY, 1/2-20 X 3.00 LG, SA-380-724-31	3	548.96	1,069.00	-520.04	1,069.00			

REV	DESC	DRN	CHK	APP	DATE
1	ADDED ITEM ITEM 6 Ø W. .0010 MODIFIED GRAPHICS	JL			



NOTES:

1. DE-GREASE ALL PARTS BEFORE ASSEMBLY.
2. ASSEMBLY PROCEDURE:
 - A. DRIVE ITEMS 5 (SHOULDER PIN) THRU ITEM 1 (FLEX PLATE), INTO ITEMS 2 AND 3 (CRADLE AND BASE BRACKETS RESPECTIVELY).
 - B. DRIVE ITEMS 6 (DOWEL PIN) THRU ITEM 1 (FLEX PLATE), INTO ITEMS 2 AND 3 (CRADLE AND BASE BRACKETS RESPECTIVELY). PUSH DOWEL PIN IN UNTIL IT BOTTOMS OUT, AND SQUEEZES SHOULDER PIN TIGHT AGAINST TAB ON FLEX PLATE.
 - C. MOUNT REMAINING ITEMS ON ITEM 2 (CRADLE BRACKET).
3. MAX. ALLOWABLE "PLAY" IN ASSEMBLY: .002.

ITEM NO.	REF	BASE	SUFF	QTY	DESCRIPTION
12				2	THRUST WASHER, SST, .50 ID X .94 OD X .062 THK.
11				2	3/8 LOCK WASHER, SST
10				2	3/8-16 JAM NUT, SST
9				4	3/8-16 SKT HD CAP SCR X 1.5 LONG, SST
8				2	5/8 LOCK WASHER, SST
7				2	5/8-18 JAM NUT, SST
6				2	DOWEL PIN, SST, Ø.5002 ± .0001 X 1.25 LG
5	PF	341-401		2	35 SHOULDER PIN
4	PF	341-401		2	34 VERTICAL ADJUSTER
3	PF	341-401		1	33 BASE BRACKET
2	PF	341-401		1	32 CRADLE BRACKET
1	PF	341-401		1	31 FLEX PLATE

DO NOT SCALE DRAWING

SCALE: 1/1

STANDARD LINEAR ACCELERATOR CENTER

STANDARD SPECIFICATION

STAMPING, CALIFORNIA

PEP-II HER VACUUM ARC QUAD RAFT ASSEMBLY FLEX SUPPORT ASSEMBLY

SA-341-401-30 E1 E

DATE: JAN 2, 1971

BY: [Signature]

APPROVED: [Signature]

REVISIONS: [Signature]

DATE: [Signature]

SCALE: 1/1

STANDARD LINEAR ACCELERATOR CENTER

STANDARD SPECIFICATION

STAMPING, CALIFORNIA

PEP-II HER VACUUM ARC QUAD RAFT ASSEMBLY FLEX SUPPORT ASSEMBLY

SA-341-401-30 E1 E



Print

PDF Format

Detail	Quantity	Estimated	Actual	Variance	Projected	Est. Total Hours	Act. Total Hours	Var. Total Hours
23305/1 - BRACKETS AND S	1	2,973.71	15,990.83	-13,017.12	15,990.83			
10 MFG_COORD - Manufact	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15 LIGHTMS_CUT - Material	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20 MFG_COORD - Manufact	1	2,973.71	15,990.83	-13,017.12	15,990.83	0.01	0.00	0.01
23305-1/1 - FLEX SUPPOR	40	2,972.75	15,990.83	-13,018.08	15,990.83			
10 MTLFNESH - Metal Finish	40	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20 PRECISN_COIL - Coil S	40	2,972.75	15,990.83	-13,018.08	15,990.83	20.00	26.75	-6.75
23305-2/1 - FLEX PLATE	40	200.00	6,640.00	-6,440.00	6,640.00			
10 OV MACHINE - Outsid	40	0.00	6,440.00	-6,440.00	6,440.00	0.00	0.00	0.00
20 QUALITY - Quality Co	40	200.00	200.00	0.00	200.00	4.00	4.00	0.00
23305-3/1 - CRADLE BR	40	200.00	2,100.00	-1,900.00	2,100.00			
10 OV MACHINE - Outsid	40	0.00	2,000.00	-2,000.00	2,000.00	0.00	0.00	0.00
20 QUALITY - Quality Co	40	200.00	100.00	100.00	100.00	4.00	2.00	2.00
23305-4/1 - BASE BRAC	40	200.00	2,020.00	-1,820.00	2,020.00			
10 OV MACHINE - Outsid	40	0.00	1,920.00	-1,920.00	1,920.00	0.00	0.00	0.00
20 QUALITY - Quality Co	40	200.00	100.00	100.00	100.00	4.00	2.00	2.00
23305-5/1 - VERTICAL A	80	400.00	1,590.00	-1,190.00	1,590.00			
10 OV MACHINE - Outsid	80	0.00	1,440.00	-1,440.00	1,440.00	0.00	0.00	0.00
20 QUALITY - Quality Co	80	400.00	150.00	250.00	150.00	8.00	3.00	5.00
23305-6/1 - SHOULDER	80	400.00	1,460.00	-1,060.00	1,460.00			
10 OV MACHINE - Outsid	80	0.00	1,360.00	-1,360.00	1,360.00	0.00	0.00	0.00
20 QUALITY - Quality Co	80	400.00	100.00	300.00	100.00	8.00	2.00	6.00
DOWEL PIN SST 0.5002"	80	0.00	0.00	0.00	0.00			
JAM NUT, SST 5/8-18	80	0.00	0.00	0.00	0.00			
53-296-014-19 - WASHER	80	15.20	15.20	0.00	15.20			
SOCKET HEAD CAP SCR	160	0.00	0.00	0.00	0.00			
NUT, JAM, SST, 3/8-16	80	0.00	0.00	0.00	0.00			
53-296-014-15 - WASHER	80	7.55	7.55	0.00	7.55			
WASHER, THRUST SST	80	0.00	0.00	0.00	0.00			

1.2.08 XPP Installation

NO BOE
FOR THIS
WBS: