

End Station Controls Chassis 2		Left Rail						
Name	Color	Rail	Module	Number	Channel	Type	Adapter	Pin
Power								
24V	violet	L	OMRON	DC_1	24V	P	TBLOCK	
0V	gray	L	OMRON	DC_1	0V	P	TBLOCK	
24V	violet	L	EK1101	0	24V	P	TBLOCK	
0V	gray	L	EK1101	0	0V	P	TBLOCK	
5V_1	red	L	EK1101	0	+	P	DC_1	+V
5VRET_1	black	L	EK1101	0	-	P	DC_1	-V
5V_2	red	L	EL9190	4	+	P	DC_2	+V
5VRET_2	black	L	EL9190	4	-	P	DC_2	-V
5V_3	red	L	EL9190	8	+	P	DC_3	+V
5VRET_3	black	L	EL9190	8	-	P	DC_3	-V
5V_4	red	L	EL9190	11	+	P	DC_4	+V
5VRET_4	black	L	EL9190	11	-	P	DC_4	-V
24V	violet	L	OMRON	DC_2	24V	P	TBLOCK	
0V	gray	L	OMRON	DC_2	0V	P	TBLOCK	
24V	violet	L	OMRON	DC_3	24V	P	TBLOCK	
0V	gray	L	OMRON	DC_3	0V	P	TBLOCK	
24V	violet	L	OMRON	DC_4	24V	P	TBLOCK	
0V	gray	L	OMRON	DC_4	0V	P	TBLOCK	
Coupler								
Input	CAT5	L	EK1101	0	X2	Comm.	IN	
Output	CAT5	L	EK1101	0	X2	Comm.	M/O	X1
Laser Diagnostics								
Laser diode 1 power monitor +	green	L	EL3104	1	+I1	AI	12	1
Laser diode 1 power monitor -	white	L	EL3104	1	-I1	AI	12	14
Laser diode 2 power monitor +	green	L	EL3104	1	+I2	AI	12	2
Laser diode 2 power monitor -	white	L	EL3104	1	-I2	AI	12	15
Laser crystal, TEC error signal +	green	L	EL3104	1	+I3	AI	12	3
Laser crystal, TEC error signal -	white	L	EL3104	1	-I3	AI	12	16
Doubling crystal, TEC error signal +	green	L	EL3104	1	+I4	AI	12	4
Doubling crystal, TEC error signal -	white	L	EL3104	1	-I4	AI	12	17
Laser diode 1, TEC error signal +	green	L	EL3104	2	+I1	AI	12	6
Laser diode 1, TEC error signal -	white	L	EL3104	2	-I1	AI	12	19
Laser diode 2, TEC error signal +	green	L	EL3104	2	+I2	AI	12	7
Laser diode 2, TEC error signal -	white	L	EL3104	2	-I2	AI	12	20
Noise eater monitor +	green	L	EL3104	2	+I3	AI	12	12
Noise eater monitor -	white	L	EL3104	2	-I3	AI	12	25
	green	L	EL3104	2	+I4	AI	12	
	white	L	EL3104	2	-I4	AI	12	
5V_1	red	L	EL1124	3	+	P	12	VCC
5VRET_1	black	L	EL1124	3	-	P	12	GND
Laser diode 1, temp guard	brown	L	EL1124	3	I1	BI	12	8
Laser diode 2, temp guard	brown	L	EL1124	3	I2	BI	12	9
Interlock	brown	L	EL1124	3	I3	BI	12	13
	brown	L	EL1124	3	I4	BI	12	
LSC Demodulators								
RF Mon 1 +	green	L	EL3104	5	+I1	AI	11	1
RF Mon 1 -	white	L	EL3104	5	-I1	AI	11	20
LO Mon 1 +	green	L	EL3104	5	+I2	AI	11	2
LO Mon 1 -	white	L	EL3104	5	-I2	AI	11	21
RF Mon 2 +	green	L	EL3104	5	+I3	AI	11	3
RF Mon 2 -	white	L	EL3104	5	-I3	AI	11	22
LO Mon 2 +	green	L	EL3104	5	+I4	AI	11	4
LO Mon 2 -	white	L	EL3104	5	-I4	AI	11	23
RF Mon 3 +	green	L	EL3104	6	+I1	AI	11	5
RF Mon 3 -	white	L	EL3104	6	-I1	AI	11	24
LO Mon 3 +	green	L	EL3104	6	+I2	AI	11	6
LO Mon 3 -	white	L	EL3104	6	-I2	AI	11	25
RF Mon 4 +	green	L	EL3104	6	+I3	AI	11	7
RF Mon 4 -	white	L	EL3104	6	-I3	AI	11	26
LO Mon 4 +	green	L	EL3104	6	+I4	AI	11	8
LO Mon 4 -	white	L	EL3104	6	-I4	AI	11	27

SVRET_2	black	L	EL1124	7	-	P	11	19
OK1	brown	L	EL1124	7	I1	BI	11	17
Sign chn 1	brown	L	EL1124	7	I2	BI	11	18
Sign chn 2	brown	L	EL1124	7	I3	BI	11	37
OK2	brown	L	EL1124	7	I4	BI	11	36
RF Amplifiers								
Monitor 1 +	green	L	EL3104	9	+I1	AI	9	12
Monitor 1 -	white	L	EL3104	9	-I1	AI	9	31
Monitor 2 +	green	L	EL3104	9	+I2	AI	9	11
Monitor 2 -	white	L	EL3104	9	-I2	AI	9	30
Monitor 3 +	green	L	EL3104	9	+I3	AI	9	10
Monitor 3 -	white	L	EL3104	9	-I3	AI	9	29
Monitor 4 +	green	L	EL3104	9	+I4	AI	9	9
Monitor 4 -	white	L	EL3104	9	-I4	AI	9	28
SVRET_3	black	L	EL1124	10	-	P	9	19
OK1	brown	L	EL1124	10	I1	BI	9	37
OK2	brown	L	EL1124	10	I2	BI	9	17
OK3	brown	L	EL1124	10	I3	BI	9	34
OK4	brown	L	EL1124	10	I4	BI	9	14
TCS/Hartmann Sensor								
ETM RH Voltage 1 +	green	L	EL3104	12	+I1	AI	8	1
ETM RH Voltage 1 -	white	L	EL3104	12	-I1	AI	8	20
ETM RTD Voltage 1 +	green	L	EL3104	12	+I2	AI	8	2
ETM RTD Voltage 1 -	white	L	EL3104	12	-I2	AI	8	21
ETM PCB Voltage 1 +	green	L	EL3104	12	+I3	AI	8	3
ETM PCB Voltage 1 -	white	L	EL3104	12	-I3	AI	8	22
ETM Current Mon 1 +	green	L	EL3104	12	+I4	AI	8	4
ETM Current Mon 1 -	white	L	EL3104	12	-I4	AI	8	23
ETM RH Voltage 2 +	green	L	EL3104	13	+I1	AI	8	5
ETM RH Voltage 2 -	white	L	EL3104	13	-I1	AI	8	24
ETM RTD Voltage 2 +	green	L	EL3104	13	+I2	AI	8	6
ETM RTD Voltage 2 -	white	L	EL3104	13	-I2	AI	8	25
ETM PCB Voltage 2 +	green	L	EL3104	13	+I3	AI	8	7
ETM PCB Voltage 2 -	white	L	EL3104	13	-I3	AI	8	26
ETM Current Mon 2 +	green	L	EL3104	13	+I4	AI	8	8
ETM Current Mon 2 -	white	L	EL3104	13	-I4	AI	8	27
ETM Heater Drive 1 +	blue	L	EL4134	14	O1	AO	8	11
ETM Heater Drive 1 -	yellow	L	EL4134	14	COM	AO	8	30
ETM AWG Heater Drive 1 +	blue	L	EL4134	14	O2	AO	8	12
ETM AWG Heater Drive 1 -	yellow	L	EL4134	14	COM	AO	8	31
ETM Heater Drive 2 +	blue	L	EL4134	14	O3	AO	8	13
ETM Heater Drive 2 -	yellow	L	EL4134	14	COM	AO	8	32
ETM AWG Heater Drive 2 +	blue	L	EL4134	14	O4	AO	8	14
ETM AWG Heater Drive 2 -	yellow	L	EL4134	14	COM	AO	8	33
SVRET_4	black	L	EL1124	15	-	P	C	6
Dalsa On/Off	orange	L	EL2124	15	O1	BO	C	1
RCX On/Off	orange	L	EL2124	15	O2	BO	C	2
	orange	L	EL2124	15	O3	BO	C	
	orange	L	EL2124	15	O4	BO	C	

End Station Controls Chassis 2				Middle Rail				
Name	Color	Rail	Module	Number	Channel	Type	Adapter	Pin
Power								
24V	violet	M	OMRON	DC_5	24V	P	TBLOCK	
0V	gray	M	OMRON	DC_5	0V	P	TBLOCK	
24V	violet	M	EK1101	0	24V	P	TBLOCK	
0V	gray	M	EK1101	0	0V	P	TBLOCK	
	red	M	EK1101	0	+	P		
GND	black	M	EK1101	0	-	P	7	19
5V_5	red	M	EL9190	6	+	P	DC_5	+V
5VRET_5	black	M	EL9190	6	-	P	DC_5	-V
24V	violet	M	EL9410	11	24V	P	TBLOCK	
0V	gray	M	EL9410	11	0V	P	TBLOCK	
5V_6	red	M	EL9410	11	+	P	DC_6	+V
5VRET_6	black	M	EL9410	11	-	P	DC_6	-V
Coupler								
Output	CAT5	M	EK1100	0	X2	Comm.	R/0	X1
PZT Mirrors								
HV10 Monitor PZT 2X +	green	M	EL3104	1	+I1	AI	7	4
HV10 Monitor PZT 2X -	white	M	EL3104	1	-I1	AI	7	23
Position Sensor PZT 2X +	green	M	EL3104	1	+I2	AI	7	3
Position Sensor PZT 2X -	white	M	EL3104	1	-I2	AI	7	22
HV10 Monitor PZT 2Y +	green	M	EL3104	1	+I3	AI	7	2
HV10 Monitor PZT 2Y -	white	M	EL3104	1	-I3	AI	7	21
Position Sensor PZT 2Y +	green	M	EL3104	1	+I4	AI	7	1
Position Sensor PZT 2Y -	white	M	EL3104	1	-I4	AI	7	20
HV10 Monitor PZT 1X +	green	M	EL3104	2	+I1	AI	7	8
HV10 Monitor PZT 1X -	white	M	EL3104	2	-I1	AI	7	27
Position Sensor PZT 1X +	green	M	EL3104	2	+I2	AI	7	7
Position Sensor PZT 1X -	white	M	EL3104	2	-I2	AI	7	26
HV10 Monitor PZT 1Y +	green	M	EL3104	2	+I3	AI	7	6
HV10 Monitor PZT 1Y -	white	M	EL3104	2	-I3	AI	7	25
Position Sensor PZT 1Y +	green	M	EL3104	2	+I4	AI	7	5
Position Sensor PZT 1Y -	white	M	EL3104	2	-I4	AI	7	24
Photodetector DC Monitors								
PD Monitor 1 +	green	M	EL3104	3	+I1	AI	7	16
PD Monitor 1 -	white	M	EL3104	3	-I1	AI	7	35
PD Monitor 2 +	green	M	EL3104	3	+I2	AI	7	15
PD Monitor 2 -	white	M	EL3104	3	-I2	AI	7	34
PD Monitor 3 +	green	M	EL3104	3	+I3	AI	7	14
PD Monitor 3 -	white	M	EL3104	3	-I3	AI	7	33
PD Monitor 4 +	green	M	EL3104	3	+I4	AI	7	13
PD Monitor 4 -	white	M	EL3104	3	-I4	AI	7	32
PD Monitor 5 +	green	M	EL3104	4	+I1	AI	7	12
PD Monitor 5 -	white	M	EL3104	4	-I1	AI	7	31
PD Monitor 6 +	green	M	EL3104	4	+I2	AI	7	11
PD Monitor 6 -	white	M	EL3104	4	-I2	AI	7	30
PD Monitor 7 +	green	M	EL3104	4	+I3	AI	7	10
PD Monitor 7 -	white	M	EL3104	4	-I3	AI	7	29
PD Monitor 8 +	green	M	EL3104	4	+I4	AI	7	9
PD Monitor 8 -	white	M	EL3104	4	-I4	AI	7	28
Laser Temperature Actuation								
Crystal temperature +	blue	M	EL4132	5	O1	AO	7	18
Crystal temperature -	yellow	M	EL4132	5	COM	AO	7	37
Doubler temperature +	blue	M	EL4132	5	O2	AO	7	17
Doubler temperature -	yellow	M	EL4132	5	COM	AO	7	36
Auxiliary								
5VRET_5	black	M	EL1124	7	-	P	6	19
Aux BI 1	brown	M	EL1124	7	I1	BI	6	23
Aux BI 2	brown	M	EL1124	7	I2	BI	6	4
Aux BI 3	brown	M	EL1124	7	I3	BI	6	22
Aux BI 4	brown	M	EL1124	7	I4	BI	6	3
Aux BO 1	orange	M	EL2124	8	O1	BO	6	21
Aux BO 2	orange	M	EL2124	8	O2	BO	6	2

Aux BO 2	orange	M	EL2124	8	O3	BO	6	20
Aux BO 2	orange	M	EL2124	8	O4	BO	6	1
Aux AI 1 +	green	M	EL3104	9	+I1	AI	6	12
Aux AI 1 -	white	M	EL3104	9	-I1	AI	6	31
Aux AI 2 +	green	M	EL3104	9	+I2	AI	6	11
Aux AI 2 -	white	M	EL3104	9	-I2	AI	6	30
Aux AI 3 +	green	M	EL3104	9	+I3	AI	6	10
Aux AI 3 -	white	M	EL3104	9	-I3	AI	6	29
Aux AI 4 +	green	M	EL3104	9	+I4	AI	6	9
Aux AI 4 -	white	M	EL3104	9	-I4	AI	6	28
Aux AO 1 +	blue	M	EL4134	10	O1	AO	6	8
Aux AO 1 -	yellow	M	EL4134	10	COM	AO	6	27
Aux AO 2 +	blue	M	EL4134	10	O2	AO	6	7
Aux AO 2 -	yellow	M	EL4134	10	COM	AO	6	26
Aux AO 3 +	blue	M	EL4134	10	O3	AO	6	6
Aux AO 3 -	yellow	M	EL4134	10	COM	AO	6	25
Aux AO 4 +	blue	M	EL4134	10	O4	AO	6	5
Aux AO 4 -	yellow	M	EL4134	10	COM	AO	6	24
DC PDs ALS table								
SVRET_5	black	M	EL2124	12	-	P	10	19
DC PD1 GAIN0	orange	M	EL2124	12	O1	BO	10	7
DC PD1 GAIN1	orange	M	EL2124	12	O2	BO	10	26
DC PD2 GAIN0	orange	M	EL2124	12	O3	BO	10	8
DC PD2 GAIN1	orange	M	EL2124	12	O4	BO	10	27
DC PD3 GAIN0	orange	M	EL2124	13	O1	BO	10	3
DC PD3 GAIN1	orange	M	EL2124	13	O2	BO	10	22
DC PD4 GAIN0	orange	M	EL2124	13	O3	BO	10	4
DC PD4 GAIN1	orange	M	EL2124	13	O4	BO	10	23
DC PD1 +	green	M	EL3104	14	+I1	AI	10	5
DC PD1 -	white	M	EL3104	14	-I1	AI	10	24
DC PD2 +	green	M	EL3104	14	+I2	AI	10	6
DC PD2 -	white	M	EL3104	14	-I2	AI	10	25
DC PD3 +	green	M	EL3104	14	+I3	AI	10	1
DC PD3 -	white	M	EL3104	14	-I3	AI	10	20
DC PD4 +	green	M	EL3104	14	+I4	AI	10	2
DC PD4 -	white	M	EL3104	14	-I4	AI	10	21

End Station Controls Chassis 2		Right Rail						
Name	Color	Rail	Module	Number	Channel	Type	Adapter	Pin
Power								
24V	violet	R	EK1101	0	24V	P	TBLOCK	
0V	gray	R	EK1101	0	0V	P	TBLOCK	
24V	violet	R	EK1101	0	+	P	TBLOCK	
0V	gray	R	EK1101	0	-	P	TBLOCK	
Coupler								
Output	CAT5	R	EK1100	0	X2	Comm.	OUT	
Beam Diverter								
24V(*)	violet	R	EL7332	1	+	P	TBLOCK	
0V(*)	gray	R	EL7332	1	-	P	TBLOCK	
Motor A +(*)	violet	R	EL7332	1	A1	P	A	1
Motor A -(*)	gray	R	EL7332	1	A2	P	A	6
Motor B +		R	EL7332	1	B1	P		
Motor B -		R	EL7332	1	B2	P		
Encoder A		R	EL7332	1	B1	P		
Encoder B		R	EL7332	1	B2	P		
End switch 1	brown	R	EL1094	2	I1	BI	A	2
0V	gray	R	EL1094	2	-	P	A	7
End switch 2	brown	R	EL1094	2	I2	BI	A	3
0V	gray	R	EL1094	2	-	P	A	8
		R	EL1094	2	I3	BI		
		R	EL1094	2	-	P		
		R	EL1094	2	I4	BI		
		R	EL1094	2	-	P		
Shutter Control								
Shutter A1 Monitor	brown	R	EL1094	3	I1	BI	B	5
0V	gray	R	EL1094	3	-	P	B	8
Shutter A2 Monitor	brown	R	EL1094	3	I2	BI	B	13
		R	EL1094	3	-	P		
		R	EL1094	3	I3	BI		
		R	EL1094	3	-	P		
		R	EL1094	3	I4	BI		
		R	EL1094	3	-	P		
Shutter A1 Close	orange	R	EL2008	4	O1	BO	B	6
Shutter A2 Close	orange	R	EL2008	4	O2	BO	B	14
Shutter A1 Open	orange	R	EL2008	4	O3	BO	B	7
Shutter A2 Open	orange	R	EL2008	4	O4	BO	B	15
		R	EL2008	4	O5	BO		
		R	EL2008	4	O6	BO		
		R	EL2008	4	O7	BO		
		R	EL2008	4	O8	BO		
Picomotor Controller A (**)								
0V	gray	R	EL3102	5	COM	P	TBLOCK	
Temperature Monitor 1 +	green	R	EL3102	5	+I1	AI	1	6
Temperature Monitor 1 -	white	R	EL3102	5	-I1	AI	1	5
Temperature Monitor 2 +	green	R	EL3102	5	+I2	AI	1	4
Temperature Monitor 2 -	white	R	EL3102	5	-I2	AI	1	3
Driver Fault 1	brown	R	EL1014	6	I1	BI	1	10
Driver Fault 2	brown	R	EL1014	6	I2	BI	1	9
Remote ON	brown	R	EL1014	6	I3	BI	1	8
Power ON	brown	R	EL1014	6	I4	BI	1	7
Readbacks	IDC	R	EL1872	9	X1	BI	1	P12
24V	violet	R	EL1872	9	1	P	TBLOCK	
0V	gray	R	EL1872	9	2	P	TBLOCK	
Controls	IDC	R	EL2872	10	X1	BO	1	P11
24V	violet	R	EL2872	10	1	P	TBLOCK	
0V	gray	R	EL2872	10	2	P	TBLOCK	
Picomotor Controller B (**)								
0V	gray	R	EL3102	7	COM	P	TBLOCK	
Temperature Monitor 1 +	green	R	EL3102	7	+I1	AI	2	6
Temperature Monitor 1 -	white	R	EL3102	7	-I1	AI	2	5
Temperature Monitor 2 +	green	R	EL3102	7	+I2	AI	2	4

Temperature Monitor 2 –	white	R	EL3102	7	-I2	AI	2	3
Driver Fault 1	brown	R	EL1014	8	I1	BI	2	10
Driver Fault 2	brown	R	EL1014	8	I2	BI	2	9
Remote ON	brown	R	EL1014	8	I3	BI	2	8
Power ON	brown	R	EL1014	8	I4	BI	2	7
Readbacks	IDC	R	EL1872	11	X1	BI	2	P12
24V	violet	R	EL1872	11	1	P	TBLOCK	
0V	gray	R	EL1872	11	2	P	TBLOCK	
Controls	IDC	R	EL2872	12	X1	BO	2	P11
24V	violet	R	EL2872	12	1	P	TBLOCK	
0V	gray	R	EL2872	12	2	P	TBLOCK	

* use AWG16 hookup wire

** Terminal order is out-of sequence between the two picomotor controllers (EL1872 and EL2872 are clustered at the end)