



LASER INTERFEROMETER GRAVITATIONAL WAVE OBSERVATORY

*LIGO Laboratory / LIGO Scientific Collaboration*

LIGO-T1600605-v6

Advanced LIGO

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## Monitor Photodiodes for SQZ

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## List of RF Photodiodes

Name	Location	Type	RF Chain	Comment
<b>Newport 1611FS-AC:</b>		<a href="#">Commercial</a>		
FIBR_MIXER	ISCT6/FSS1	1611	TTFSS	Laser/fiber locking PD
<b>Broadband Photodetectors:</b>		<a href="#">E1200428</a>		
SHG_TRANS_RF35	ISCT6/SHG	BBPD	2ch demod	SHG locking (IR)
<b>LSC RF Photodetectors:</b>		<a href="#">E1400099</a>		
CLF_REFL_RF6	SQZT6/CLF	ALIGO	2ch demod	CLF phase. locking
OPO_REFL_RF80	SQZT6/OPO	ALIGO	2ch demod	OPO locking
<b>Existing OMC DCPD:</b>		<a href="#">E1300521</a>		
OMC_TRANS_RF3	In-vac	ALIGO	2ch demod	Squeeze angle locking
<b>Homodyne Photodetector:</b>		<a href="#">E1700135</a>		
HD_DIFF_RF3	SQZT6/HD	ALIGO	2ch demod	LO locking/diagnostics

## List of DC monitor photodiodes

Name	Location	Type	S	F	W	Comment
<b>4-chn Generic PD interface (ISCT6):</b>						
FIBR_PD_DC/LF	ISCT6/FSS1	1611	×	×	×	DC of laser/fiber locking PD
SHG_TRANS_DC/LF	ISCT6/SHG	BBPD	×	×	×	DC of SHG locking (IR)
LASER_IR_DC/LF	ISCT6/PD1	PDA100A	×	×	×	Power of SQZ laser
SHG_GR_DC/LF	ISCT6/PD2	PDA100A	×	×	×	SHG green power (GR)
<b>4-chn Generic PD interface (SQZT6):</b>						
CLF_TRIG_DC	SQZT6/PD3	PDA100A	×	×		Trigger PD CLF path
OPO_IR_PD_LF	SQZT6/IR	PDA100A	×	×		DC of OPO transmitted (IR)
CLF_REFL_DC	SQZT6/CLF	ALIGO	×			DC of CLF refl. Locking
OPO_REFL_DC	SQZT6/OPO	ALIGO	×			DC of OPO refl. Locking (GR)
<b>DC Outputs of LSC RF PD interface:</b>						
CLF_REFL_LF	SQZT6/CLF	ALIGO		×	+	DC of CLF refl. locking
OPO_REFL_LF	SQZT6/OPO	ALIGO		×	+	DC of OPO refl. Locking (GR)
<b>Homodyne interface:</b>						
HD_B_DC	SQZT6/HD	ALIGO		×	+	PD B of homodyne
HD_DIFF_DC	SQZT6/HD	ALIGO		×	+	Difference of homodyne PDs
HD_A_DC	SQZT6/HD	ALIGO		×	+	PD A of homodyne
<b>Unamplified DC Monitors:</b>						
SHG_FIBR_REJECTED_DC	In-vac	PD	×			Rejected pump power
CLF_FIBR_REJECTED_DC	In-vac	PD	×			Rejected CLF power
FIBR_TRANS_DC/LF	ISCT6/DC1	SM1PD1A	×	×	×	Transmitted by laser fiber
FIBR_REJECTED_DC	ISCT6/DC2	SM1PD1A	×			Rejected after laser fiber
CLF_LAUNCH_DC	ISCT6/DC4	SM1PD1A	×			Injected into CLF fiber
CLF_REJECTED_DC	ISCT6/DC3	SM1PD1A	×			Rejected before injection
SHG_LAUNCH_DC	ISCT6/DC7	SM1PD1A	×			Injected into pump fiber
SHG_REJECTED_DC	ISCT6/DC6	SM1PD1A	×			Rejected before injection
SEED_LAUNCH_DC	ISCT6/DC5	SM1PD1A	×			Seed beam injection

LO_LAUNCH_DC	ISCT6/DC8	SM1PD1A	×			LO beam injection
OPO_REFL_REJECTED_DC	SQZT6/DC9	SM1PD1A	×	×	×	Rejected OPO refl. power
OPO_TRANS_DC/LF	SQZT6/DC10	SM1PD1A	×	×	×	Trans. green OPO power (GR)
SPARE_A_DC	TBD	TBD	×			Spare (ISCT6)
SPARE_B_DC/LF	TBD	TBD	×	×	×	Spare (SQZT6)
<b>Trigger PD:</b>						
SYS-MOTION_C_SHUTTER_H_TRIGGER	SQZT6/PD3	PDA100A	×			Trigger PD CLF path

S: Slow controls readback; F: Fast DAQ readback; W: Whitened readback (×: standard whitening, +: custom whitening)