



Status of MACRO & Hamamatsu PMT pressure tests at SAB

Logan Lebanowski, Shih-Kai Lin

University of Houston

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overview

- ▶ 150 waterproof MACRO EMI PMT assemblies as well as 16 Hamamatsu waterproof PMTs need to be pressure tested at the SAB. They have already passed performance tests at DGUT.
- ▶ We test about 10 PMTs per week (mid-August to December).
- ▶ For more information, see [doc 5373](#).

As of October 21, we have passed 71 of 79 tested MACRO PMTs
and 6 of 6 tested Hamamatsu PMT.



pressure test results

6 PMTs were tested during the past week (October 14 - October 20).

SN [†]	mass [‡] (g)	pressure (psig)	test time (h:m)	result
WSD2720	4601.0	14.1	14:57	PASS ¹
8170	547.0	12.4	8:11	PASS ²
WSD2597	4594.0	14.3	15:24	PASS ¹
WSD2653	4600.5.0	14.3	23:17	PASS ¹
WSD2721	4612.0	14.1	76:57	PASS ¹
WSD2657	4422.0	14.3	22:35	PASS ¹

[†] Serinal numbers with “WSD” prefix are Hamamatsu PMTs.

[‡] For MACRO PMTs, this means unpotted weight. For Hamamatsu PMTs, this is the total weight of PMT+cable.

1	Cable dry. No cracks.
2	Cable dry. No leaks or cracks.

signal test results

The operational capability of a PMT is verified after pressure testing: The PMT is placed in a dark box, connected to a single channel decoupler box, and set to its 2E7 gain voltage, as recorded in the DGUT data. After tens of minutes, the count rate, rise time, and pulse height are recorded. We use a threshold of 3.00 mV, which is roughly 1/4 pe.

- ▶ Due to installation workshop, no signal tests were done this week. Since we have the HV datasheet for Hamamatsu water PMTs, we will signal test them next week.