



Status of MACRO PMT pressure tests at SAB

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pressure test results

- ▶ As of September 23, we have passed 47 of 50 PMTs.
- ▶ 11 PMTs were tested during the past week (September 16 - September 22). PMT 8870 had a hole in the cable jacket. It was fixed and tested again.

SN	mass (g)	pressure (psig)	test time (h:m)	result
7851	564	12.1	14:48	PASS ¹
7127	582	12.2	8:51	PASS ²
7820	595.5	12.0	14:44	PASS ³
7267	643.5	12.0	8:44	PASS ²
7934	609	12.0	14:48	FAIL ⁴
8430	554	12.0	47:23	FAIL ⁵
8870	587.5	12.0	7:27	PASS ²
7899	566	12.0	16:24	PASS ³
7765	573	12.1	7:05	PASS ³
7471	601	12.0	14:56	PASS ¹

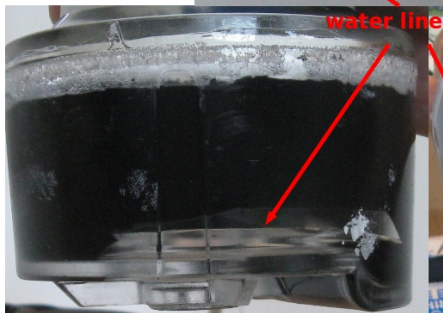
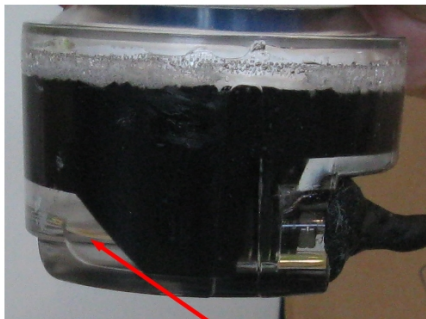
Table 1: pressure test result: For PASS/FAIL reasons, please see the table in the next slide.

PASS/FAIL reasons

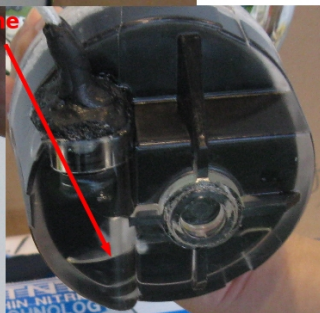
number	reason
1	Cable dry. No leaks or cracks.
2	1+Some water penetrated the mastic tape seal of the cable strain relief plug, but did not penetrate the UW cable plug.
3	Moisture on the SHV end in the sealing tube. Conductivity test performed.
4	Acrylic cap contains much water.(see photo)
5	A big crack and a little hole in the PMT. Photocathode was gone.(see photo)

Table 2: PASS/FAIL reasons

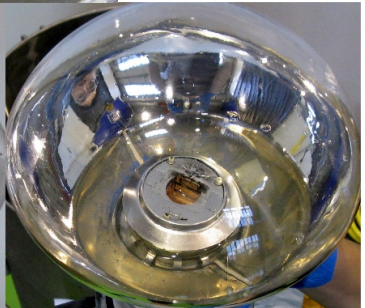
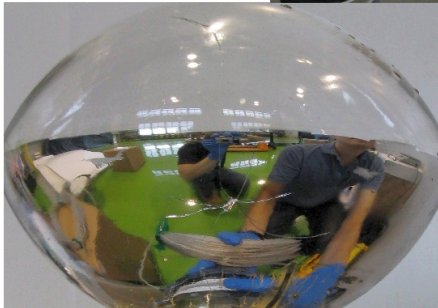
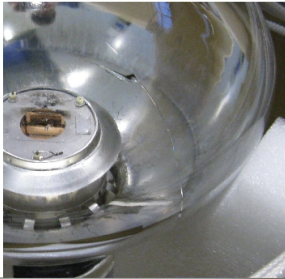
photos: PMT 7934



water line



photos: PMT 8430



signal test results

SN	Rate (kHz)	DGUT rate (kHz)	Rise time (ns)	DGUT rise time (ns)
6494	9.5	0.84	4.8	5.5
7357	5.0	0.45	4.8	7.4
6238	2.0	0.45	6.1	5.2
7278	3.0	0.38	5.2	7.5
7945	1.8	0.5	5.6	5.7
7379	1.5	0.63	5.0	5.3
8356	5.0	1.21	5.5	5.9
7520	9.0	0.37	5.0	4.8
7343	4.3	0.7	5.0	4.4
8756	5.0	0.56	4.5	4.5

signal test results (cont.)

SN	Rate (kHz)	DGUT rate (kHz)	Rise time (ns)	DGUT rise time (ns)
7692	2.3	0.41	5.8	5.6
8870	10.0	4.42	5.1	3.6
8901	4.0	0.89	5.1	6.4
6659	2.4	0.58	7.3	5.4
6432	20.0	3.04	5.0	5.5
7851	1.5	1.08	5.4	6.0
7127	9.0	0.84	4.3	4.4
7820	7.0	0.49	4.9	5.8
7267	12.0	3.58	4.9	4.1