

## Test Report

To : TOGU SAFETY INDUSTRIAL CO., LTD.  
3-16-8, SHIMODERA, NANIWA-KU, OSAKA, 556-0001, JAPAN



Japan Recreation and Miscellaneous Goods Safety Laboratory  
 4-22-4, Higashikomagata, Sumida-ku, Tokyo 130-8611  
 TEL 81-3-3829-2509 FAX 81-3-3829-2595

We hereby inform you about the test results of the samples commissioned to us on January 15, 2018.

Samples	LED STREAM ONE (Pi-Lit <sup>®</sup> Sequential Flare System) Item Number: ICSS-OR Number of specimen : 1
Test Items	Temperature test and waterproof test
Date of Test	January 19, 2018



(Photo 1) Specimen

Approved by Marehito SUZUKI, Manager, Safety of Goods Department		Tested by Nobuhiro Kakiuchi, Inspector, Safety of Goods Department	
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\*The contents of this report shall not be placed on advertisement or elsewhere without prior approval of our Chairman.  
 \*This test report shall not be reproduced partially for use.  
 \*This test report refers only to the test of the provided sample(s).

Test method

Conduct the following tests on the provided samples by consultation with the client.

Test item	Test method
Temperature test	Keep specimen in an atmosphere of -10 °C for 1 hour and inspect the condition of the specimen.
	Keep specimen in an atmosphere of -20 °C for 1 hour and inspect the condition of the specimen.
	Keep specimen in an atmosphere of -30 °C for 1 hour and inspect the condition of the specimen.
	Keep specimen in an atmosphere of 90 °C for 1 hour and inspect the condition of the specimen.
	Keep specimen in an atmosphere of 100 °C for 1 hour and inspect the condition of the specimen.
	Keep specimen in an atmosphere of 110 °C for 1 hour and inspect the condition of the specimen.
	The specimens shall not be put batteries during temperature tests
Waterproof test	Test on provided specimen in accordance with 14.2.5 "Test for second characteristic numeral 5 with the 6.3 mm nozzle", JIS C 0920:2003 "Degrees of protection provided by enclosures (IP code)" Test equipment : Nozzle set designed for test of IPX5, made in Japan
	<Test conditions>
	Water delivery rate : 12.5 ±0.625 L/min      Test duration : 3 min
	Distance : Between 2.5 m and 3 m
	Water spray angle : All practicable directions
	Temperature difference : The water temperature shall not differ by more than 5 °C from the temperature of the specimen

Test results

Test item	Test results
Temperature test	There was no abnormality on the enclosure and the functions under an atmosphere of -10 °C.
	There was no abnormality on the enclosure and the functions under an atmosphere of -20 °C.
	There was no abnormality on the enclosure and the functions under an atmosphere of -30 °C.
	There was no abnormality on the enclosure and the functions under an atmosphere of 90 °C.
	There was no abnormality on the enclosure and the functions under an atmosphere of 100 °C.
	There was no abnormality on the enclosure and the functions under an atmosphere of 110 °C.
Waterproof test	Some ingress of water was observed, however it met the acceptance conditions.

Note

14.3 Acceptance conditions, JIS C 0920:2003

After testing, it is the responsibility of the relevant technical committee to specify the amount of water which may be allowed to enter the enclosure and the detail of a dielectric strength test if any.

In general, if any water has entered, it shall not:

- be sufficient to interfere with the correct operation of the equipment or impair safety;
- deposit on insulation parts where it could lead to tracking along the creepage distance;
- reach live parts or windings not designed to operate when wet;
- accumulate near the cable end or enter the cable if any.

<Verification pictures>

•-10 °C



(Photo 2) Front side



(Photo 3) Back side

•-20 °C



(Photo 4) Front side



(Photo 5) Back side

•-30 °C



(Photo 6) Front side



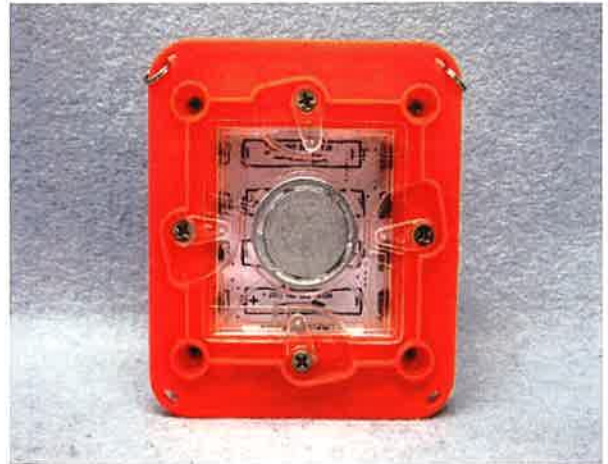
(Photo 7) Back side



•90 °C



(Photo 8) Front side

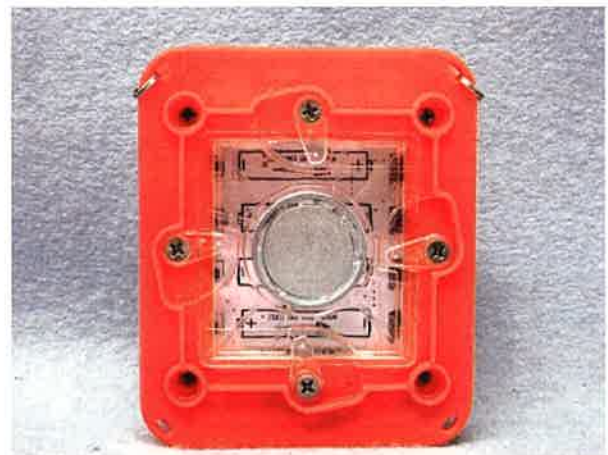


(Photo 9) Back side

•100 °C



(Photo 10) Front side

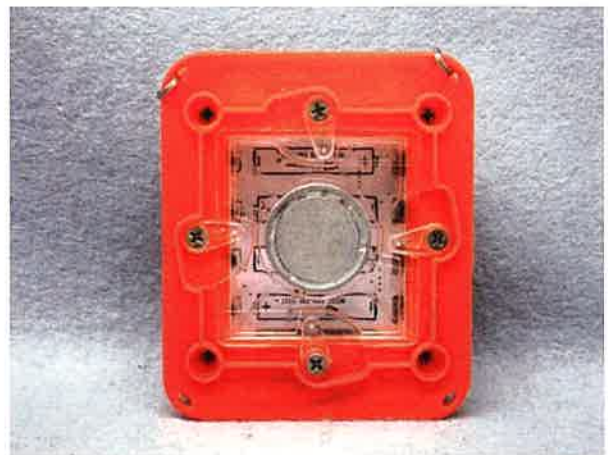


(Photo 11) Back side

•110 °C



(Photo 12) Front side



(Photo 13) Back side

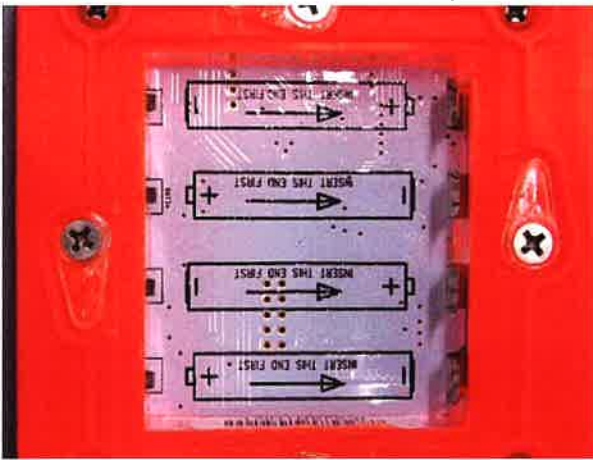
• Waterproof test



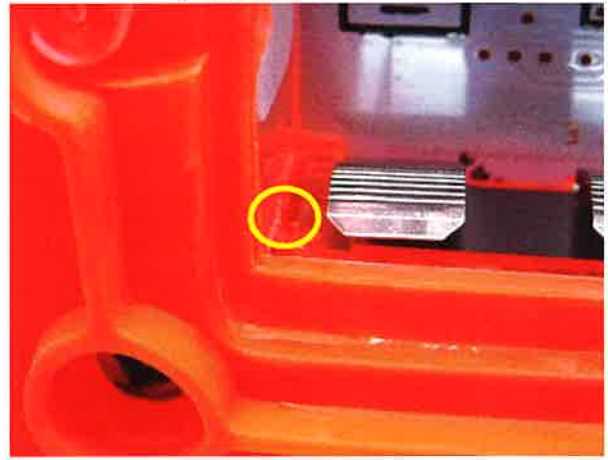
(Photo 14) After testing



(Photo 15) Batteries



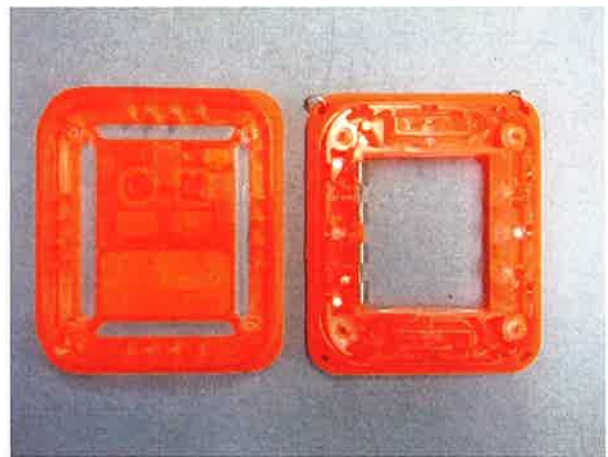
(Photo 16) Battery box



(Photo 17) Lateral of the battery box



(Photo 18) Control board



(Photo 19) Inside of the enclosure