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Instytut Technik
Innowacyjnych
EMAG

AB 261

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Zespół Laboratoriów Badawczych
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LABORATORY OF CABLE TESTING AND ENVIRONMENTAL TESTS

TEST REPORT No 8034-ZLK/2024

ZESPÓŁ LABORATORIÓW BADAWCZYCH

Świadczy usługi w zakresie badań:

- kompatybilności elektromagnetycznej (EMC)
- środowiskowych
- elektrycznych
- mechanicznych
- trudnopalności materiałów
- funkcjonalności
- iskrobezpieczeństwa
- stopnia ochrony IP
- UN DOT 38.3

- aparatury rozdzielczej
- stacji transformatorowych
- akumulatorów
- kabli i przewodów
- urządzeń gazometrycznych
- podzespołów stosowanych w kolejnictwie, branży automotive i siłach zbrojnych RP
- pozostałych urządzeń elektrycznych i elektronicznych

IP68 tests of object:
Lamp SP-401N Battery LED EDG

Customer: Solutions4GA sp. z o.o.
Ul. Sylwestra Kaliskiego 57
01-476 Warszawa

Order: No PO/0205/2024 of 10.06.2024

Test report prepared by:

Robert Ulfig

Test report reviewed by:

Marcin Patoła

Test report authorized by:

Robert Ulfig
Head of Laboratory

Katowice, 26.06.2024

Report contains pages:	8	Version of the form PL-1/11-ZLK/1-en w. 6	Copy No.	1

Index:

1. Equipment under test (EUT):

Table 1. EUT data

No.	Name	Serial number	Date of delivery	Producer	Laboratory code
1	Lamp SP-401N Battery LED EDG	10007	21.06.2024	Solutions4GA	8034.01.01

Photog. 1. General view of EUT

Photog. 2. Nameplate of EUT

2. Test plan

Table 2. Scope of tests

No.	Tested feature / Test method	Remarks	A[1)]
1.	Degree of protection provided by enclosure, IPX8 test (protection against long-term immersion in water) according to PN-EN 60529:2003+A2:2014-07+AC:2017-12+AC:2020-01 clause 14.2.8.	The test duration determined by the Customer: 1 h.	A
2.	Degree of protection provided by enclosure, IP6X test (protection against dust with underpressure) according to PN-EN 60529:2003+A2:2014-07+AC:2017-12+AC:2020-01 clause 13.4 and 13.6.		A

[1)] „A" means the accredited testing; „-"means the non-accredited testing. "A*" means that accreditation applies only to the exposure. The tests of resistance/endurance of EUT against exposure (according to description and evaluation criteria given in the Test Plan) are not accredited.

Tests listed in table 2 was performed in Research Network Łukasiewicz – Institute of Innovative Technologies EMAG in Katowice at 31 Leopolda Street.

2.1. Evaluation criteria (data from customer's test plan)

For IPX8 test: PN-EN 60529:2003+A2:2014-07+AC:2017-12+AC:2020-01 clause 14.3.

For IP6X: PN-EN 60529:2003+A2:2014-07+AC:2017-12+AC:2020-01 clause 13.6.2.

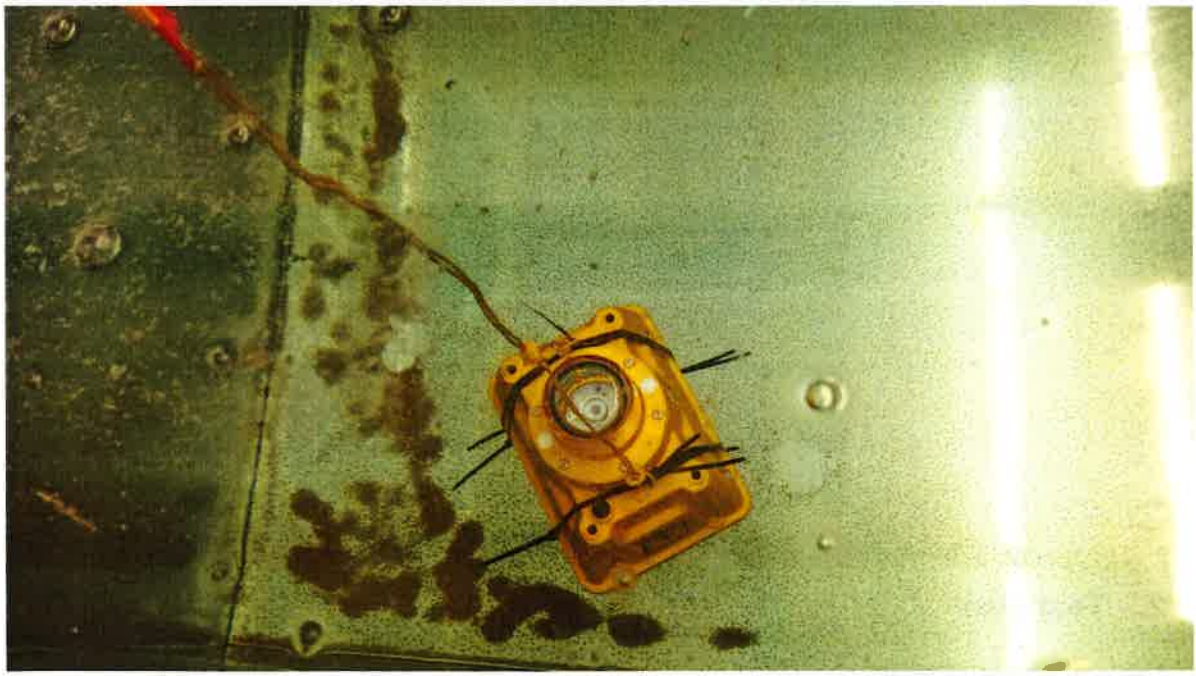
3. Description and results of tests

3.1. Protection against long-term immersion in water: IPX8 test

3.1.1. Test procedure

Test was performed on 24.06.2024 in accordance with recommendations of standard PN EN 60529:2003+A2:2014-07+AC:2017-12+AC:2020-01, clause 14.2.8 – IPX8 test. Test sample during test placed under the surface of water is shown in photog. 3. Test conditions:

- Temperature of object: 23,5°C,
- Temperature of water: 22,1°C,
- Test duration: 1 h.



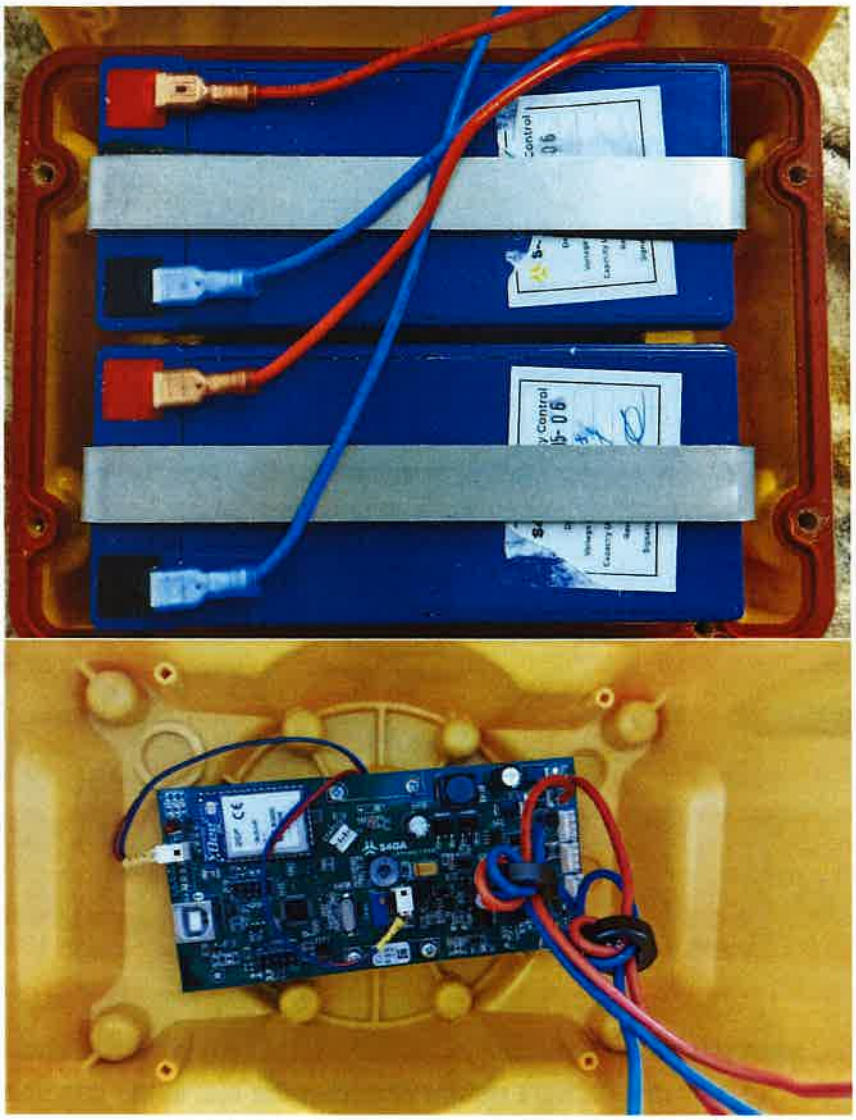
Photog. 3. EUT during test

3.1.2. Test equipment

– Water tank		ZL/1168/P,
– Multisensor	LB-717TWP	ZL/1514/A,
– Thermometer	TM-917	ZL/1153/A,
– Electronic stopwatch	JS-6618	ZL/1102/A,
– Ruler	1 m	ZL/0223/A,
– Set for measuring the ambient temperature and relative humidity	LB-701H/LB-706	ZL/0454/A.

3.1.3. Test result

After the test no water was found inside the housing. Inspection of tested enclosure after test is shown below.



Photog. 4. EUT after test

3.2. Protection against dust with underpressure: IP6X test

3.2.1. Test procedure

Test was performed on 25.06.2024 in accordance with recommendations of standard PN EN 60529:2003+A2:2014-07+AC:2017-12+AC:2020-01, clause 13.4 and 13.6 – IP6X test. Test sample in the dust chamber is shown in photog. 5. Test conditions:

- Airflow rate: 0 l/h,
- Underpressure: 1,1-1,7 kPa,
- Dust type: talc,
- Test duration: 8 h.

Photo. 5. EUT before and after the test in the chamber

3.2.2. Test equipment

–	Dust chamber	SD 1000 S	ZL/1160/P,
–	Multisensor	LB-717TWP	ZL/1514/A,
–	Rotameter	ROS-06	ZL/1161/A,
–	Differential pressure meter	MRC	ZL/0223/A,
–	Set for measuring the ambient temperature and relative humidity	LB-701H/LB-706	ZL/0454/A.

3.2.3. Test result

After the test no dust was found inside the housing. Inspection of tested enclosure after test is shown below.

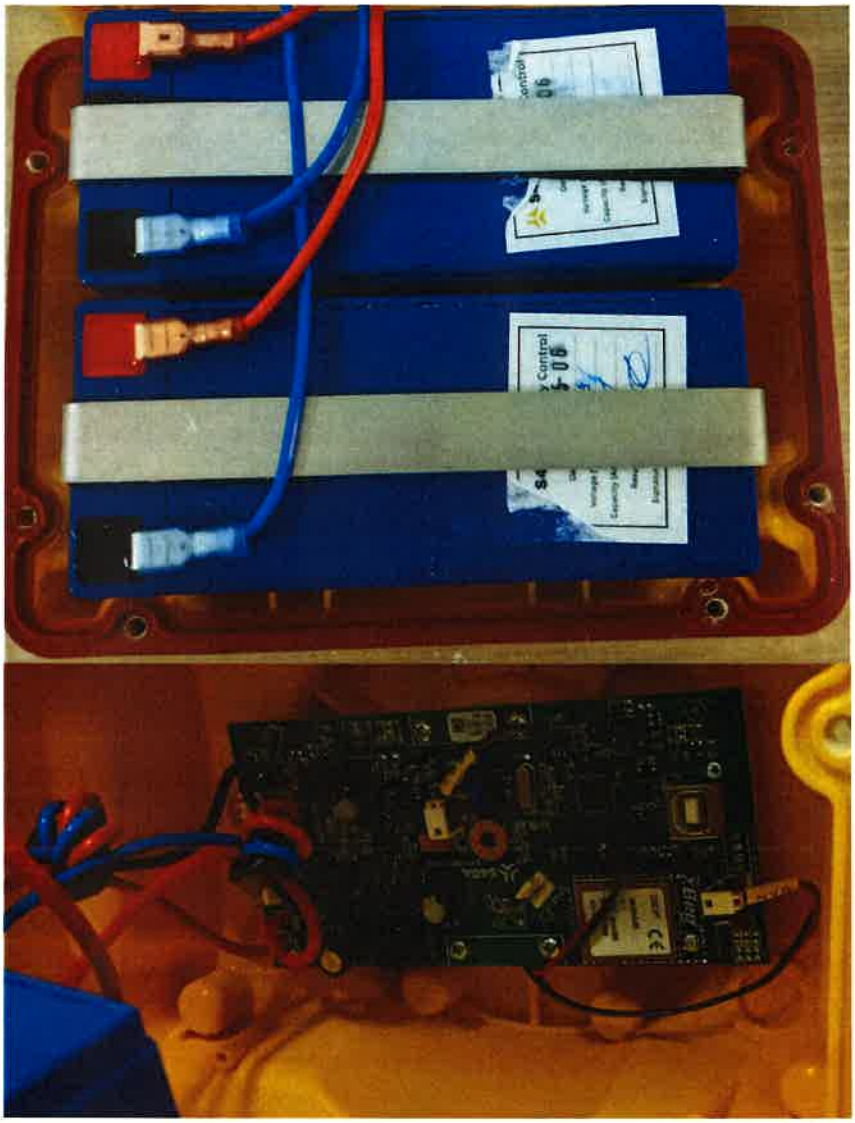


Photo. 4. Inside of EUT after test

4. Tested by:

Robert Ulfig on days: 24-25.06.2024.

5. Distribution list of test reports:

Copy No.	Recipients
1	**SolutionsS4GA sp. z o.o.**
2	**Sieć Badawcza Łukasiewicz – Instytut Technik Innowacyjnych EMAG** **Laboratorium Badań Kabli i Badań Środowiskowych**

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ANNEX TO THE TEST REPORT No 8034-ZLK/A1/2024

ZESPÓŁ LABORATORIÓW BADAWCZYCH

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Order: No PO/0205/2024 of 10.06.2024

Test report prepared by: Robert Ulfig

Test report reviewed by: Marcin Patoła

Test report authorized by:

Robert Ulfig
Head of Laboratory

Katowice, 05.08.2024

Report contains pages:	2	Version of the form PL-1/11-ZLK/1-en w. 6	Copy No.	1

In the test report number 8034-ZLK/2024 the following changes are made:

- In point 3.1.3, at the end of paragraph 1, new text is added:

The tested object has met requirements of ingress protection level IPX8.

- In point 3.2.3, at the end of paragraph 1, new text is added:

The tested object has met requirements of ingress protection level IP6X.

- Point 4 changes to 5.
- Point 5 changes to 6.
- New point after p. 3.2.3 is added:

4. Summary of the tests:

Table 3. Summary of tests

No.	Tested feature / Test method	Test result
1.	IPX8 test according to PN-EN 60529:2003+A2:2014-07+AC:2017-12+AC:2020-01 clause 14.2.8.	Positive
2.	IP6X test according to PN-EN 60529:2003+A2:2014-07+AC:2017-12+AC:2020-01 clause 13.4 and 13.6.	Positive