

REDTRONIC IP69K

Certificate No: RED-202204

TEST CERTIFICATE

Company : Redtronic Ltd

Address : Unit 1-9, Wellington Business Park, Quebec Street, Elland, HX5 9BX,
United Kingdom

Sample Name : STX

Date Tested : 16/03/2022

TESTING LABORATORY ACCREDITATION:

ISO 9001:2015 certificate is approved by Q.A. International Certification Limited

Certificate No: QAIC / UK / 501

Regulations: 72/245/EC, ECE10 as amended is approved by Vehicle Certification Agency

Registration No: VCAMC/14/0043/A

UN/ECE Regulation No 65 is approved by Unidad De Certificación Del Automovil

Certificate No: C1 29571503D

TEST METHOD:

BS EN 60068-2-38:2009: Environmental testing – Temperature/humidity cyclic test

BS EN 60529:1992+A2:2013 – Degrees of protection provided by enclosures

ISO 20653: 2013-02 IP6X: Dust Test

ISO 20653: 2013-02: IPx9K high-pressure cleaning

WE HEREBY CERTIFY THAT:

The test(s) shown in the attachment were conducted according to the indicating procedures. We assume full responsibility for the accuracy and completeness of these tests and vouch for the qualifications of all personnel performing them.

	Name	Date
Technical Engineer	Dan Jackson	16/03/2022

NOTE:

1. This certificate will be invalid if reproduced in part or altered in anyway.
2. This certificate refers only to the specimen(s) submitted to test and is invalid if used otherwise.

TABLE OF CONTENTS

1.	GENERAL INFORMATION	
1.1	DESCRIPTION OF UNIT	3
1.2	UNIT OPERATING CONDITION	3
2.	HIGH PRESSURE CLEANING TEST	
2.1	TEST EQUIPMENT	4
2.2	LABORATORY AMBIENCE CONDITION	4
2.3	REFERENCE DOCUMENT	4
2.4	TEST CONDITION	4
2.5	SUMMARY OF TEST	4
3.	ATTACHMENTS HIGH PRESSURE CLEANING	5
4.	DUST TEST	
4.1	TEST EQUIPMENT	6
4.2	LABORATORY AMBIENCE CONDITION	6
4.3	REFERENCE DOCUMENT	6
4.4	TEST CONDITION	6
4.5	SUMMARY OF TEST	6
5.	ATTACHMENTS DUST TEST	7
6.	ENVIRONMENTAL TESTING	
6.1	TEST EQUIPMENT	8
6.2	LABORATORY AMBIENCE CONDITION	8
6.3	REFERENCE DOCUMENT	8
6.4	TEST CONDITION	8
6.5	SUMMARY OF TEST	8
7.	ATTACHMENTS ENVIRONMENTAL TEST	9

1. GENERAL INFORMATION

1.1 DESCRIPTION OF UNIT

Manufacturer: Redtronic Ltd
Sample name and Sample quantity:

Sample Name	Sample Quantity
STX 1A	1 unit

1.2 UNIT OPERATING CONDITION

Unit is powered off and disconnected from power source. During testing there is a function test at beginning and end of test procedure.

2. HIGH PRESSURE CLEANING TEST

2.1 TEST EQUIPMENT

Model	Calibration Date
HAIDA	January 2022

2.2 LABORATORY AMBIENCE CONDITION

Temperature: 25°C ± 10°C

Relative Humidity: 50% ± 25% (RH)

2.3 REFERENCE DOCUMENT

This test method refers to BS EN 60529:1992+A2:2013 – Degrees of protection provided by enclosures, specifically ISO 20653: 2013-02: IPx9K high-pressure cleaning.



2.4 TEST PARAMETERS

Distance of the Nozzle to the specimen:	100 to 150mm
Water flow rate:	15l / min
Water pressure:	100 bar
Water temperature:	80°C
Speed test table:	5 U / min
Spray angle:	0°, 30°, 60°, 90°
Number of cycles:	1
Test Conditions:	The specimen is not in electrical operation.

2.5 SUMMARY OF TEST

After testing, visual inspection showed no water permeated into the unit.

3. ATTACHMENTS HIGH PRESSURE CLEANING

SETUP	
	
AFTER TESTING	
	
<p>Comments: Device passed IPX9K test with no negative reaction. Lamp worked both at beginning of test cycle, during and after test cycle complete.</p>	

4. DUST TEST

4.1 TEST EQUIPMENT

Model	Calibration Date
HAIDA	January 2022

4.2 LABORATORY AMBIENCE CONDITION

Temperature: 25°C ± 10°C

Relative Humidity: 50% ± 25% (RH)

4.3 REFERENCE DOCUMENT

This test method refers to BS EN 60529:1992+A2:2013 – Degrees of protection provided by enclosures, specifically ISO 20653: 2013-02: IP6x Dust Test.

4.4 TEST PARAMETERS

Dust Material: Talcum powder (100% dry fine)

Particle Size	Amount (%)
< 5 µm (Diameter)	42.3% ± 5
5~10 µm (Diameter)	35.85% ± 5
10~20 µm (Diameter)	21.15 % ± 5
20~40 µm (Diameter)	0.69% ± 5
> 40 µm (Diameter)	0%

Amount of Talcum Powder: 2 kg/m³ (chamber volume)

Dust Density: 2.03 g/cm³

Depression level: 0 mbar

Air Direction: Vertically to achieve slowest possible downward settlement

Duration: 8 hours

4.5 SUMMARY OF TEST

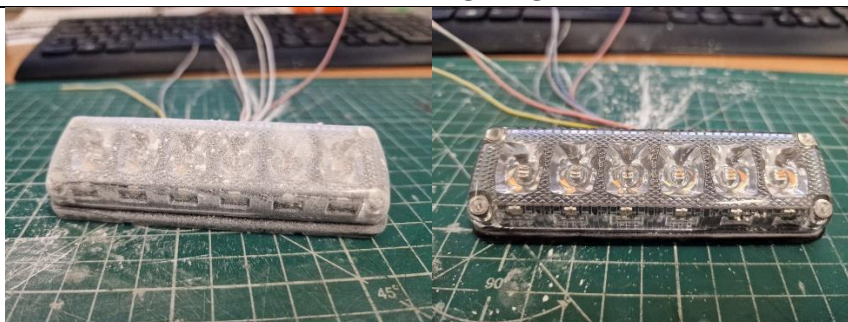
After testing, visual inspection showed no dust particle permeated into the unit.

5. ATTACHMENTS DUST TEST

SETUP



AFTER TESTING



Comments: Device passed IP6X test with no negative reaction. Lamp worked both at beginning of test cycle and after test complete. There was no ingress of dust within the lamp enclosure.

Conclusion: Device passed IP69K test with no negative ingress effects.

6. ENVIRONMENTAL TESTING

6.1 TEST EQUIPMENT

Model	Calibration Date
HAIDA	January 2022

6.2 LABORATORY AMBIENCE CONDITION

Temperature: 25°C ± 10°C

Relative Humidity: 50% ± 25% (RH)

6.3 REFERENCE DOCUMENT

BS EN 60068-2-38:2009: Environmental testing – Temperature/humidity cyclic test

6.4 TEST PARAMETERS

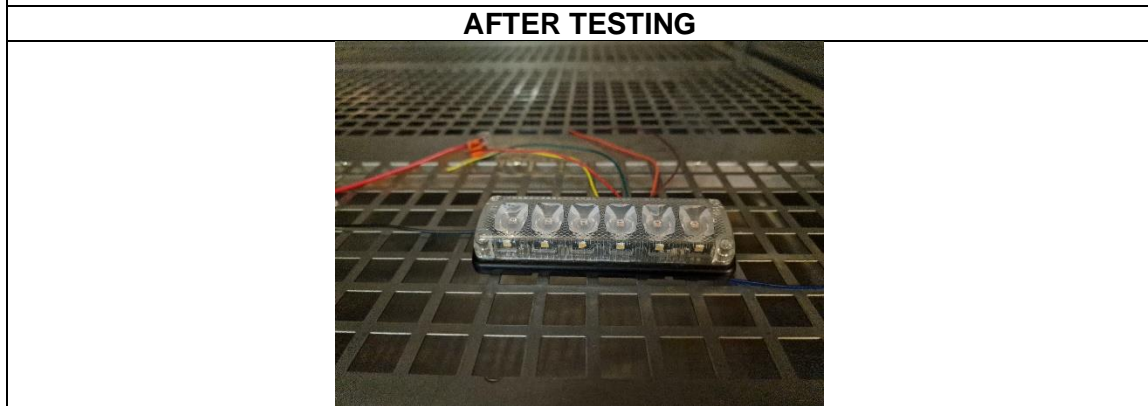
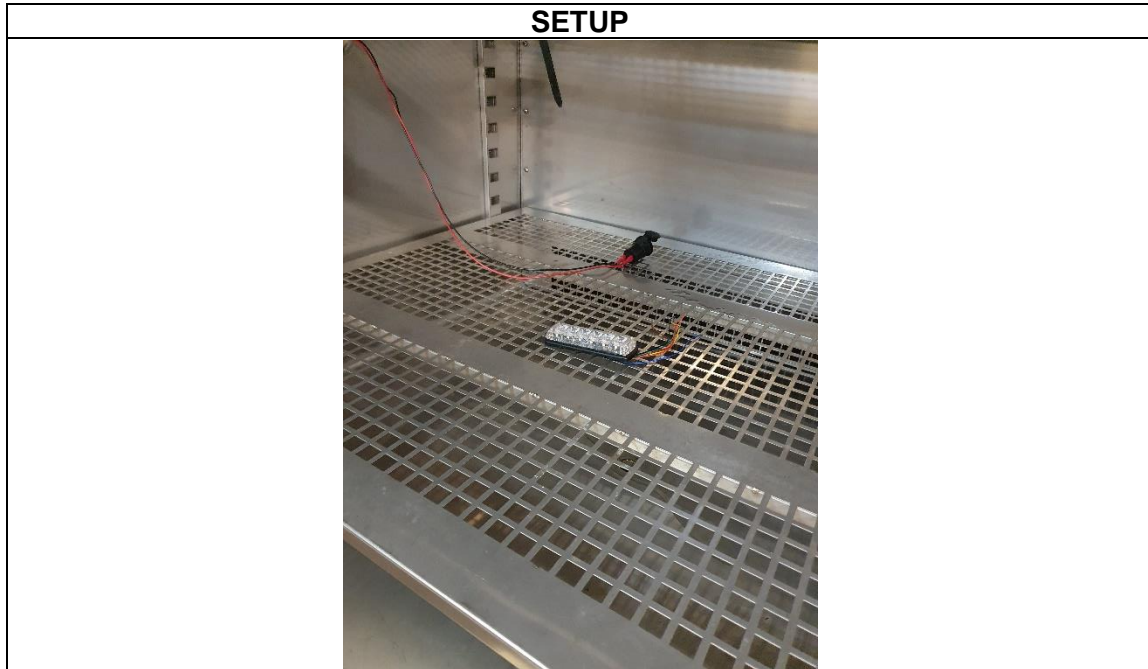
Section of test:	Parameters:
Preconditioning	55°C ±2 K 20% RH for 24h
Initial measurements	Visual Inspection od specimen
Conditioning	±2K tolerance
Test cycle	25°C ±2K 93 ±3% RH at start of test the follow BS EN 60068-2

6.5 SUMMARY OF TEST

After testing, visual inspection showed no water permeated into the unit. And no effect had been caused by the heat cycle.


7. ATTACHMENTS ENVIRONMENTAL TEST

Certificate No: RED-202204



Comments: Device passed test with no negative reaction. Lamp worked both at beginning of test cycle and after test complete.

Conclusion: Device passed IP69K test with no negative ingress effects.

	Name	Signature	Date
Technical Engineer	Dan Jackson		16/03/2022