Test Report 3173567.

Olympia Electronics

N. Lakasas - P. Arvanitidis S.A.

Introduction.

This report has been prepared by Rowan Kelly and relates to the activity detailed below:

Job/Registration Details		Client Details
Job number:	**3173567**	Olympia Electronics N. Lakasas - P. Arvanitidis S.A. 72nd klm Old National Road Thessaloniki - Katerini Kolindros, Pieria 60300 Greece
Job type:	Testing Samples Submitted	
Start Date:	01/07/2021	
Test type:	Audit	
Sample ID:	10189244	
Registration:	**KM 640081**	
Scheme:	BS EN 60598-2-22	
Protocol:	PP507	
Scheme Mgr:	Kane Pinney	
Quality system:	ISO 9001:2015	

The report has been approved for issue by Luke Masters Electrical Testing Team Leader

Approved For Issue	
	Issue Date: 28/07/202

Objectives.

Audit test for product certification to the limited clauses of BS EN 60598-2-22:2014 in conjunction with BS EN 60598-1:2015+A1:2018 in accordance with PP 507.

Product Scope.

GR-293/M Emergency Luminaire

Report Summary.

A type sample of the above product has been tested and examined to the relevant requirements of the above specification and has been found to not comply with these requirements, see summary of test comments on pg.4 for details.

Test Samples.

Sample Id/ER Number	Description
10189244	GR-293/M Emergency Luminaire

Description of Test Samples.

Sample Description
Class II, IP 40, non-maintained, self-contained, emergency luminaire for recessed or surface mounting with white thermoplastic control gear enclosure. For connection to mains supply, rated at 220-240 V AC via terminal block. Emergency duration of 3 hrs and a 4.8 V, 1.2 Ah NiMH battery.

Test Equipment.

Number	Description	Cal Due Date
9004509	Thermal Hygrometer	06/04/2022
9005164	Barometer	23/06/2022
9006450	Calipers*	11/11/2021
9005301	Environmental Chamber**	NICS
9006449	Thermocouple**	06/04/2022
9006451	Pico Logger**	28/10/2021
----	Siemens LOGO	NICS
9006425	Stabilised Power Supply***	NICS
9622.0052	Variac***	NICS
9006122	Multi-meter***	17/09/2021
9005898	Digital Multi-meter	15/12/2021
9005034	Shadowgraph	03/12/2021
9005130	Test Probe 13	06/09/2022
9004920	Push/Pull Force Gauge	24/09/2021
9006446	Jointed test Finger Test Finger	08/09/2021
9001906	50 mm Ø Test Probe*	NICS
9005272	Stabilised Power Supply***	NICS
9006117	Variac***	NICS
9006605	Stopwatch	18/03/2023
9005170	Humidity Chamber****	NICS
9006328	Thermal Hygrometer****	16/12/2021
9002011	Dielectric Withstand Tester	23/10/2021
CAS:110-54-3	95 % Hexanes	NICS

* Instrument 9001906 verified using instrument 9006450

** Instrument 90005301 verified using instruments 9006449 & 9006451

*** Instruments 9006425, 9622.0052, 9005272 & 9006117 verified using instrument 9006122

**** Instrument 9005170 verified using instrument 9006328

Summary of Test Comments.

Clause	Comments
Clause 22.6	22.6.17: Markings required by 22.6.1 and 22.6.2, rated supply voltage and luminaire classification, not visible when surface mounting accessory is used for surface mounting the luminaire.

Glossary of Terms.

PASS: Complies. Tested by BSI engineers at BSI laboratories.

PASS1: Complies. Witnessed by BSI engineers in manufacturers laboratory.

PASS2: Complies. Tests carried out by third party lab; results accepted by BSI.

PASS*: Report resulted in uncertainty and states that Compliance is more probable than non-compliance.

FAIL: Non compliance – Product does not meet the requirements of this clause.

FAIL*: Report resulted in uncertainty and states that Non-compliance is more probable than compliance.

N/A: Not applicable to design under consideration.

N/T: Not tested due to similarity to previously tested item; reference earlier test report.

Conditions of Issue.

This Test Report is issued subject to the conditions stated in current issue of 'BSI Terms of Service'. The results contained herein apply only to the particular sample(s) tested and to the specific tests carried out, as detailed in this Test Report. The issuing of this Test Report does not indicate any measure of Approval, Certification, Supervision, Control or Surveillance by BSI of any product. No extract, abridgement or abstraction from a Test Report may be published or used to advertise a product without the written consent of BSI, who reserve the absolute right to agree or reject all or any of the details of any items or publicity for which consent may be sought.

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Unless otherwise stated, any results not obtained from testing in a BSI laboratory are outside the scope of our UKAS accreditation.

Supporting Data – Test Results

Table A – BS EN 60598-2-22:2014 used in conjunction with BS EN 60598-1:2015+A1:2018.

Standard Clause Ref	Activity	Test Result/ Evidence/Comment/ NC Ref	Complies?
Clause 22.5	Classification of luminaires	Luminaire correctly classified and marked	PASS
Clause 22.6	Marking	Markings on the luminaire and in instructions provided were assessed all required markings were present. Please see Summary of Test Comments on pg. 5 for details of failure	FAIL
Clause 22.13 (22.13.7)	Endurance test (24 hr Vmin)	Test sample was charged at 198 V_{RMS} a.c. for 24 hrs at 40 °C. The luminaire was then disconnected from the supply to discharge. The luminaire was illuminated for the rated duration of 3 hrs. V_{min} limit: 4.4 V Measured V_{min} at end of rated duration: 4.9 V d.c.	PASS
Clause 22.17 (22.17.5)	Luminance Uniformity	Open area luminaire	N/A
Clause 3.2	Marking of luminaires	All required markings present on luminaire	PASS
Clause 3.3	Additional information	All required additional markings present on luminaire or in instructions	PASS
Clause 3.4	Test of marking	The markings were lightly rubbed with a cloth soaked in water and a cloth soaked in 95% hexanes for 15 seconds each. After the test all markings were still legible, the labels did not curl nor were they easily removeable.	PASS
Clause 4.10	Double and reinforced insulation	Assembly gaps greater than 0.3 mm in supplementary insulation were not coincidental with such gaps in basic insulation and test probe 13 could not be used to touch any live parts.	PASS

Standard Clause Ref	Activity	Test Result/ Evidence/Comment/ NC Ref	Complies?
Clause 7.2 (7.2.1, 7.2.3 and 7.2.4)	Provision for earthing	Class II luminaire with no provisions for earthing	N/A
Clause 8.2	Protection against electric shock as appropriate	Live parts of the luminaire were not accessible with the standard test finger when the luminaire was assembled as in normal use and basic insulated parts were not accessible with the 50 mm Ø test probe. The luminaire was supplied with 240 V_{RMS} a.c. and 60 seconds after disconnection of the power supply the voltage across the supply cord was measured. Max. voltage limit: 50 V Max. measured voltage: 0.007 V_{RMS} a.c. 0.0 V d.c.	PASS
Clause 9.3.1	Humidity test	Test sample was placed in a humidity chamber for 48 hrs at 93% RH and 21 °C. Afterwards, test sample showed no damage.	PASS

Standard Clause Ref	Activity	Test Result/ Evidence/Comment/ NC Ref	Complies?
Clause 10.2	Insulation resistance and electric strength	**Insulation Resistance** **SELV:** N/A, No SELV parts **Other than SELV**: 500 V d.c. applied for 60 seconds, with a 5 second ramp up time, between: L → N (terminal block disconnected from control gear) (Basic) Min. IR: 2 MΩ Measured IR: 4548 MΩ L & N → Metal foil on mounting surface (Double/Reinforced) Min. IR: 4 MΩ Measured IR: >10 GΩ L & N → Metal mounting clips (Double/Reinforced) Min. IR: 4 MΩ Measured IR: >10 GΩ L & N → Metal cover screw (Double/Reinforced) Min. IR: 4 MΩ Measured IR: 4656 MΩ Insulating bushing (Supplementary) Min. IR: 2 MΩ Measured IR: >10 GΩ	PASS

Standard Clause Ref	Activity	Test Result/ Evidence/Comment/ NC Ref	Complies?
Clause 10.2	Insulation resistance and electric strength	**Electric Strength** **SELV:** N/A, No SELV parts **Other than SELV**: a.c. test voltage at 50 Hz applied for 60 seconds, with a 5 second ramp up time, between: L → N (terminal block disconnected from control gear) (Basic) Test Voltage: 1.48 kV_{RMS} No flashover or breakdown L & N → Metal foil on mounting surface (Double/Reinforced) Test Voltage: 2.96 kV_{RMS} No flashover or breakdown L & N → Metal mounting clips (Double/Reinforced) Test Voltage: 2.96 kV_{RMS} No flashover or breakdown L & N → Metal cover screw (Double/Reinforced) Test Voltage: 2.96 kV_{RMS} No flashover or breakdown Insulating bushing (Supplementary) Test Voltage: 1.48 kV_{RMS} No flashover or breakdown	PASS

Standard Clause Ref	Activity	Test Result/ Evidence/Comment/ NC Ref	Complies?
Clause 11.2	Creepage distances and clearances	Working voltage not exceeding 250 V_{RMS}, PTI < 600 Creepage distances and clearances measured between: 1) L → N (Supply terminal) (Basic Insulation) Minimum creepage distance = 2.5 mm Measured creepage distance = 8.3 mm Minimum clearance = 1.5 mm Measured clearance = 4.3 mm 2a) L → Metal recessed mounting clip (Double/Reinforced Insulation) Minimum creepage distance = 5 mm Measured creepage distance = 29 mm Minimum clearance = 3 mm Measured clearance = 26 mm 2b) L → Exterior of enclosure (Double/Reinforced Insulation) Minimum creepage distance = 5 mm Measured creepage distance = 25 mm Minimum clearance = 3 mm Measured clearance = 10 mm 3) L terminal → Metal Recessed mounting clip (Supplementary Insulation) Minimum creepage distance = 2.5 mm Measured creepage distance = 26 mm Minimum clearance = 1.5 mm Measured clearance = 24 mm 6) L → Mounting surface (Double/reinforced Insulation) Minimum creepage distance = 5 mm Measured creepage distance = 25 mm Minimum clearance = 3 mm Measured clearance = 10 mm	PASS
Comments: See Summary of Test comments on page 5 for details.			

Table B – Critical components check.

Critical component	Type test BSI TR 3053920/Rev 2	Audit	Changes?
Controlgear	Olympia electronics: 2211195 220 – 240 V, 50 – 60 Hz	Olympia electronics: 2211195 220 – 240 V, 50 – 60 Hz	NO
LED module	Olympia electronics: 0405185 2.7 – 3.3 V d.c., 1 W, 755 mA, T_C = 65 °C	Olympia electronics: 0405185 2.7 – 3.3 V d.c., 1 W, 755 mA, T_C = 65 °C	NO
Battery	KWASIA: C-930/HT NiMh, 4.8 V, 1.2 Ah	KWASIA: C-930/HT NiMh, 4.8 V, 1.2 Ah	NO
Battery Cable	DINGXIANG: 3135 16 AWG, 600 V/200 °C, Halogen free	DINGXIANG: 3135 16 AWG, 600 V/200 °C, Halogen free	NO
Mains terminal	Sauro: CIM_020, CIF_020 250 V, 16 A, 125 °C	Sauro: CIM_020, CIF_020 250 V, 16 A, 125 °C	NO
Comments: No comments			

Sample Photographs.

Luminaire Exterior (Front)

Luminaire Exterior (Mounting Surface)

Luminaire Exterior (Profile – Surface Mounted)

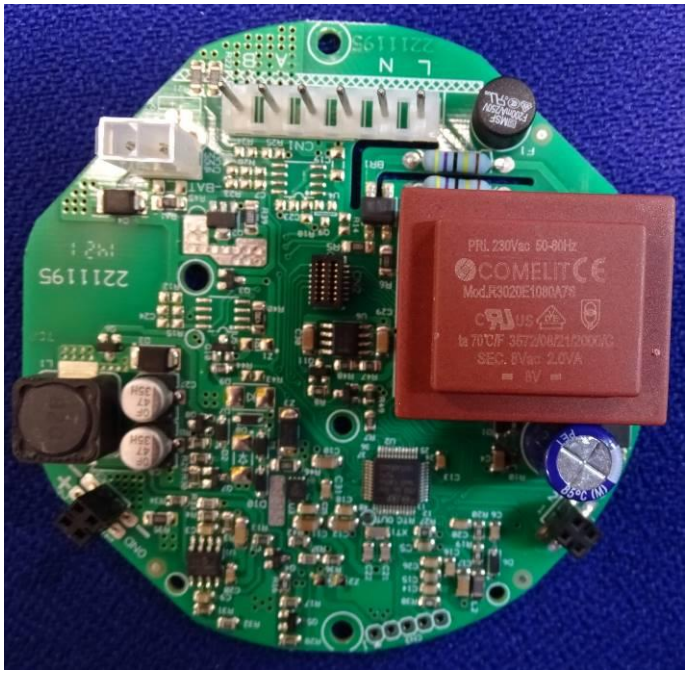
Luminaire Exterior (Profile – Recessed Mounted)

Luminaire Interior (Main Enclosure)

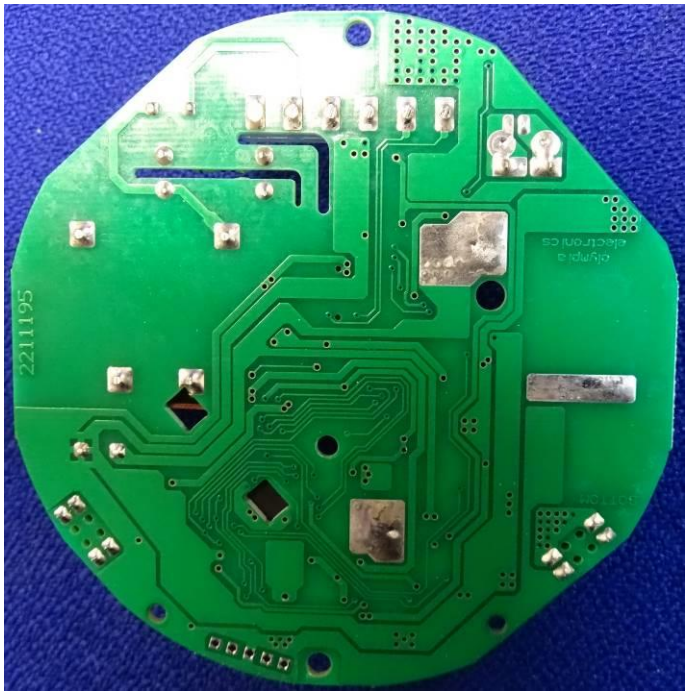
Luminaire Interior (Main Enclosure)

Luminaire Interior (Main Enclosure)

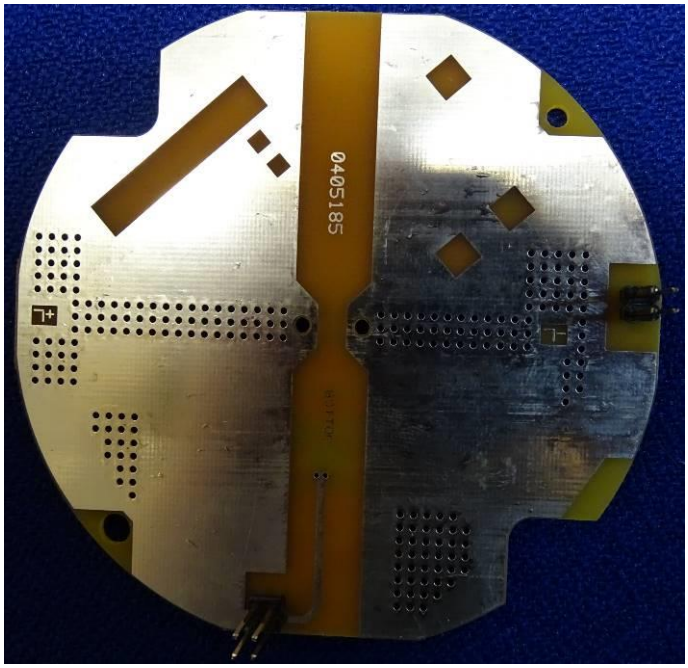
Luminaire Interior (Enclosure Cover)



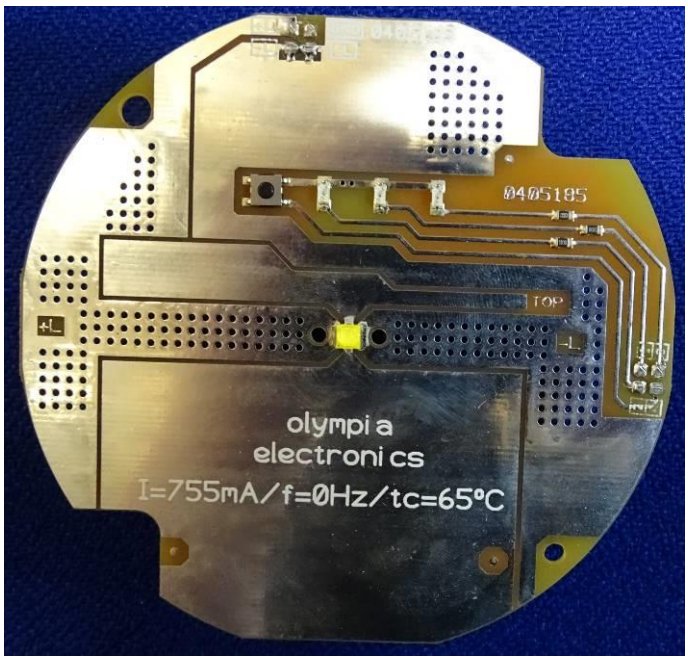
Controlgear (Topside)



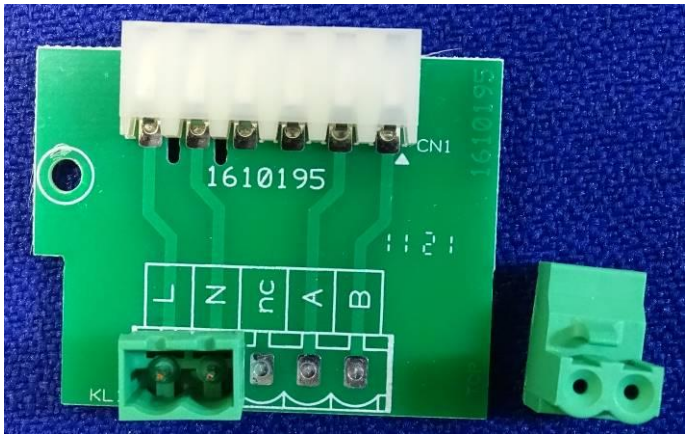
Controlgear (Underside)



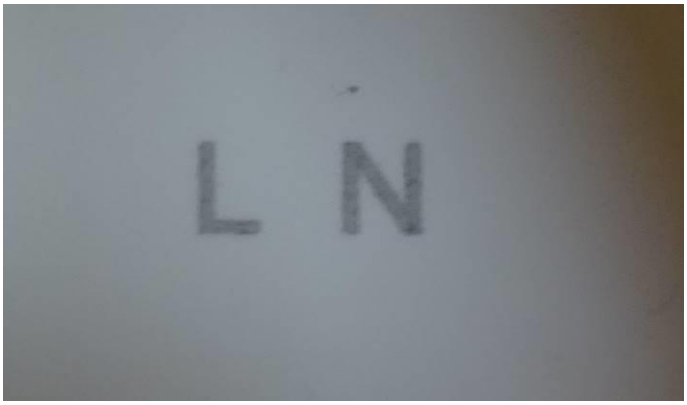
LED module (Underside)



LED module (Topside)



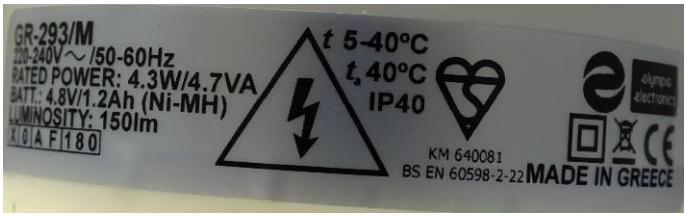
Mains Supply Terminal



Terminal Markings

Battery & Battery Label 1

Battery Label 2



Ratings Label

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