CGS TEST HİZMETLERİ TEKNİK KONTROL VE BELGELENDİRME ANONİM ŞİRKETİ

Oruçreis Mahallesi Tekstilkent Caddesi
Tekstilkent A21 10/I 102 Esenler
İstanbul/TURKİYE
Deney Raporu
Test Report

LVD-196-12
2019-04

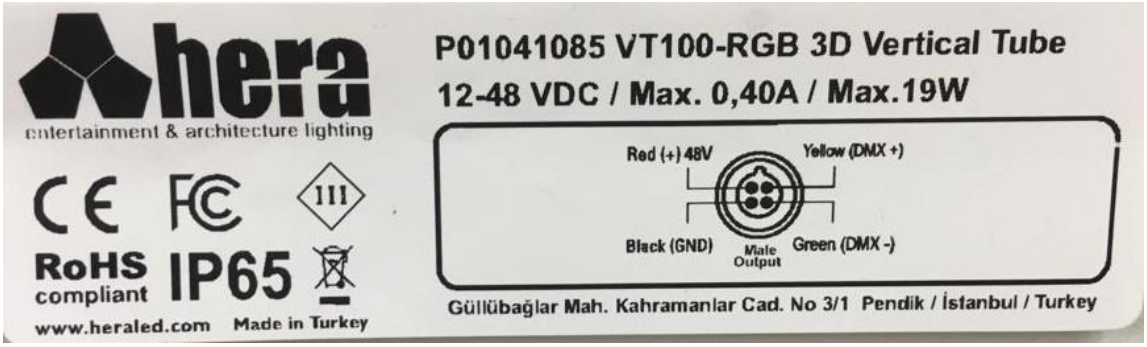
Müşterinin adı /adresi: Customer name/address	***HERA EĞLENCE VE MİMARİ AYDINLATMA SİSTEMLERİ A.Ş./Gullubaglar Mah. Kahramanlar Cad. No:3-1 34906 Pendik / Istanbul / Turkey***
İstek Numarası: Order no.	***09112018ebb2***
Numunenin Adı ve Tarifi: Name and identity of test item	***P01041085 VT100 RGB 3D Vertical Tube ; Dış Mekan Aydınlatma Armatürü /*** Outdoor Luminaires
Numunenin Kabul tarihi: The date of receipt of test item	***2018-11-10***
Açıklamalar: Remarks	***Ürün ilgili testlerden geçmiştir, lütfen raporu inceleyiniz. /*** The product passes related tests, see report below.
Deneyin yapıldığı tarih: Date of Test	***2019-03-05 to 2019-03-08***
Deney Standartı Test Standard	***EN 60950-22:2006+AC:2008***
Raporun Sayfa Sayısı: Number of pages of the Report	***19* sayfa/*pages***

Tarih Date	***Deney Sorumlusu*** Person in charge of test	***Laboratuvar Müdürü*** Head of Testing Laboratory
2019-04-12	***Timur GÜSER***	***Timur GÜSER***

TEST REPORT
IEC 60950-22
Information technology equipment
Safety – Part 22:Equipment to be installed outdoors

Report Reference No.....:	LVD-196-12
Date of issue .....:	2019-04-12
Total number of pages.....:	Test Report: 17 pages Annex 1 (Equipment of measurements) : 1 page Annex 2 (Photo documentation) : 2 page
Testing Laboratory..... :	CGS TEST HİZMETLERİ TEKNİK KONTROL VE BELGELENDİRME ANONİM ŞİRKETİ
Address..... :	Oruçreis Mahallesi Tekstilkent Caddesi Tekstilkent A21 10/I 102 Esenler İstanbul/TURKİYE
Testing location ……:	CGS TEST HİZMETLERİ TEKNİK KONTROL VE BELGELENDİRME ANONİM ŞİRKETİ
Address ……:	Oruçreis Mahallesi Tekstilkent Caddesi Tekstilkent A21 10/I 102 Esenler İstanbul/TURKİYE
Applicant's name ..... :	HERA EĞLENCE VE MİMARİ AYDINLATMA SİSTEMLERİ A.Ş.
Address..... :	Gullubaglar Mah. Kahramanlar Cad. No:3-1 34906 Pendik / Istanbul / Turkey
Test specification:	
Standard .....:	EN 60950-22:2006+A11:2008
Test procedure.....:	Type Test
Non-standard test method……..:	N/A
Test Report Form No. .....:	F510_20R1.0
Test Report Form(s) Originator .....:	The Standards Institution of Israel Ltd.
Master TRF .....:	Dated 2007-03

Test item description.....:	OUTDOOR LUMINAIRES
Trade Mark .....:	hera entertainment & architecture lighting
Manufacturer..... :	HERA EĞLENCE VE MİMARİ AYDINLATMA SİSTEMLERİ A.Ş.
Model/Type reference..... :	P01041085 VT100 RGB 3D Vertical Tube
Ratings..... :	12-48V d.c. ; 0,40A max. ; 19W max.

Summary of testing:	
Tests performed (name of test and test clause): EN/IEC 60529 IP65 test	**Testing location:** CGS TEST HİZMETLERİ TEKNİK KONTROL VE BELGELENDİRME ANONİM ŞİRKETİ Oruçreis Mahallesi Tekstilkent Caddesi Tekstilkent A21 10/I 102 Esenler İstanbul/TURKİYE
Summary of compliance with National Differences:	
Copy of marking plate 	

Test item particulars ..... :	Outdoor Luminaires
Temperature range..... :	-40^{0}C….+50^{o}C
Overvoltage category..... :	☒OVC I ☐OVC II ☐OVC III ☐OVC IV
IP protection class ..... :	IP65
Possible test case verdicts:	
- test case does not apply to the test object.....:	N/A
- test object does meet the requirement .....:	P (Pass)
- test object does not meet the requirement .....:	F (Fail)
Testing .....:	
Date of receipt of test item.....:	2018-11-10
Date (s) of performance of tests.....:	2019-03-05 to 2019-03-08

General remarks:

The test results presented in this report relate only to the object tested.
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"(see Enclosure #)" refers to additional information appended to the report.
"(see appended table)" refers to a table appended to the report. Throughout

this report a point is used as the decimal separator.

This Test Report Form is intended for the investigation of safety of equipment to be installed outdoors in accordance with IEC 60950-22. It can only be used together with the IEC 60950-1 requirements.

4	**CONDITIONS FOR OUTDOOR EQUIPMENT**		**P**
4.1	Ambient air temperature		P
	Suitability for use at any temperature in the range specified by the manufacturer. If not specified by the manufacturer, the range is taken as -33°C to +40°C	T_a=-40ºC…50ºC	P
4.2	AC mains supply		N/A
	Suitability for the highest Overvoltage Category expected in the installation location	Not connected to AC main supply	N/A
	Components used to reduce the Overvoltage Category comply with IEC 61643-series		N/A
	Reference to installation instructions .....:	---	N/A
4.3	Rise of earth potential		N/A
	Special earthing conditions	Class III, no earthing	N/A
	Reference to installation instructions .....:		N/A
5	**MARKING AND INSTRUCTIONS**		**P**
	Special installation features for protection from conditions in the OUTDOOR LOCATION (see 1.7.2 of IEC 60950-1)		P
	OUTDOOR ENCLOSURE classification according to IEC 60529 (IP Code)	IP65	P

6	**PROTECTION FROM ELECTRICAL SHOCK IN AN OUTDOOR LOCATION**		**P**
6.1	Voltage limits of user-accessible parts in OUTDOOR LOCATIONS (2.2.2 and 2.2.3 of IEC 60950-1 with voltage limits of IEC60950-22)		P
	Voltages under normal conditions (V).....:	Accessible voltages do not exceed 12-48VDC	P
	Voltages under fault conditions (V) .....:		N/A
6.2	Limited current circuits in outdoor locations		N/A
	The requirements of 2.4 of IEC60950-1 apply without change	Class III equipment	N/A
7	**WIRING TERMINALS FOR CONNECTION OF EXTERNAL CONDUCTORS**		**N/A**
	The mains supply terminations powered via the normal building installation wiring are as specified in 3.3 of IEC 60950-1		N/A
	The mains supply terminations powered directly from the mains distribution system are as specified in IEC 60364		N/A
8	**CONSTRUCTION REQUIREMENTS FOR OURDOOR ENCLOSURES**		**P**
8.1	General		P
	Protection against corrosion by use of suitable materials or by application of a protective coating		N/A

	Parts serving as a functional part of an OUTDOOR ENCLOSURE (e.g., dials, connectors, etc.) comply with the same environmental protection requirements as for the OUTDOOR ENCLOSURE		P
	Use of OUTDOOR ENCLOSURE to carry current during normal operation		N/A
	Connection of a conductive part of an OUTDOOR ENCLOSURE to protective earth for carrying fault currents (see 2.6 of IEC 60950-1 and 8.3 of this standard)		N/A
8.2	Resistance to ultra-violet radiation		N/A
	Resistance of non-metallic parts of an outdoor ENCLOSURE to degradation by ultra-violet (UV) radiation		N/A
	Parts providing mechanical support:		N/A
	Tensile strength test (ISO 527)		N/A
	Flexural strength test (ISO 178)		N/A
	Parts providing impact resistance:		N/A
	Charpy impact test (ISO 179)		N/A
	Izod impact test (ISO 180)		N/A
	Tensile impact test (ISO 8256)		N/A
	All parts:		N/A
	Flammability classification (1.2.12 and annex A of IEC 60950-1)		N/A
8.3	Resistance to corrosion		N/A
8.3.1	General		N/A
	Resistance of metallic parts of an OUTDOOR ENCLOSURE to the effects of water-borne contaminants		N/A
	Alternate method for 8.3.2-8.3.4 (IEC 61587-1)		N/A
8.3.2	Test apparatus		N/A
	Salt-spray test (IEC 60068-2-11)		N/A
	Test in a water-saturated sulphur dioxide atmosphere (water-saturated sulphur dioxide atmosphere as described in Annex A; chamber as described in ISO 3231)		N/A
8.3.3	Test procedure		N/A
8.3.4	Compliance criteria		N/A
8.4	Bottoms of FIRE ENCLOSURES		N/A
	Comply with 4.6.2 of IEC 60950-1		N/A
	Bottom of FIRE ENCLOSURE of OUTDOOR EQUIPMENT mounted directly and permanently on a non-combustible surface (e.g., concrete or metal)		N/A
8.5	Gaskets		N/A

	If gaskets are used as the method for protection against the ingress of potential contaminants, requirements of 8.5.1 through 8.5.3 apply	No gaskets	N/A
8.5.1	General		N/A
8.5.2	Oil resistance		N/A
8.5.3	Securing means		N/A

9	**PROTECTION OF EQUIPMENT WITHIN AN OUTDOOR ENCLOSURE**		**P**
9.1	Protection from moisture (see Table 2)	Unit was tested for IPX5 with acceptable results, detachable protective covers were installed in place.	P
9.2	Protection from plants and vermin	Evaluated by inspection, enclosure prevents ingress of plants and vermin	P
9.3	Protection from excessive dust	Unit was tested for IP6X with acceptable results, detachable protective covers were installed in place. No access to dangerous areas	P
10	**MECHANICAL STRENGTH OF ENCLOSURES**		**P**
10.1	General	Plastic enclosure is of adequate mechanical strength	P
10.2	Impact test (4.2.5 of IEC 60950-1)	There was no adverse effect	P
	Compliance criteria:		P
	- after test the level of protection remains in accordance with 9.1of this standard		P
	- after test the requirements of 4.2.1 of IEC 60950-1 are met		P
11	**OUTDOOR EQUIPMENT CONTAINING VENTED BATTERIES**		**N/A**
	Adequate ventilation in the compartment housing a vented battery, where gassing is possible during normal usage or over-charging	No batteries	N/A
	Protection against the risk of ignition of local concentrations of hydrogen and oxygen in a compartment containing both a battery and electrical components		N/A
	Hydrogen gas concentration measurement test		N/A
	Measured hydrogen gas concentration (% by volume) ..... :		—
	Max. allowed gas concentration for the mixture location in proximity to an ignition source (% by volume) ..... :		—
	Max. allowed gas concentration for the mixture location not in proximity to an ignition source (% by volume) ..... :		—

	Overcharging of rechargeable battery (see 4.3.8 of IEC 60950-1)		N/A
A	**ANNEX A, WATER-SATURATED SULPHUR DIOXIDE ATMOSPHERE (see 8.3.2 and 8.3.3)**		**N/A**
B	**ANNEX B, WATER SPRAY TEST (see 9.1)**		**N/A**

C	**ANNEX C, ULTRAVIOLET LIGHT CONDITIONING TEST (see 8.2)**		**N/A**
C.1	Test apparatus .....:		N/A
C.2	Mounting of test samples .....:		N/A
C.3	Carbon-arc light-exposure apparatus .....:		N/A
C.4	Xenon-arc light-exposure apparatus.....:		N/A
D	**ANNEX D, GASKET TESTS (see 8.5)**		**N/A**
D.1	Gasket tests		N/A
D.2	Tensile strength and elongation tests (for gaskets that can stretch)		N/A
	Tensile strength (%) .....:		N/A
	Elongation (%) .....:		N/A
	Visible deterioration, deformation, melting, cracking or hardening of the material .....:		N/A
D.3	Compression test (for gaskets with closed cell construction)		N/A
	Initial thickness of the specimen (mm) .....:		N/A

	Thickness of the specimen after test a) (mm), compression set after test a) (%).....:		N/A
	Thickness of the specimen after test b) (mm), compression set after test b) (%).....:		N/A
	Thickness of the specimen after test c) (mm), compression set after test c) (%) .....:		N/A
	Visible cracks or deterioration .....:		N/A
D.4	Oil immersion test		N/A
	Swelling (%).....:		N/A
	Shrinking (%) .....:		N/A

E	**ANNEX E, RATIONALE**		—
E.1	General		—
E.2	Electric shock		—
E.3	Energy related hazards		—
E.4	Fire		—
E.5	Mechanical hazards		—
E.6	Heat related hazards		—
E.7	Radiation		—
E.8	Chemical hazards		—
E.9	Biological hazards		—
E.10	Explosion hazards		—

8.2	TABLE: Resistance to ultra-violet radiation	
8.2a)	Tensile strength test (ISO 527)	N/A
Material identification (manufacturer, type designation) ..... :		—
Shape and dimensions of test samples.....:		—
Conditioning for Set 1 of samples.....:		—
Conditioning for Set 2 of samples (including Annex C).....:		—
Test conditions (T °C, RH %)..... :		—

Set 1 (without Annex C conditioning)		Set 2 (after Annex C conditioning)	
Test sample #	Tensile strength (MPa)	Test sample #	Tensile strength (MPa)

Arithmetic mean for Set 1 (MPa) .....:	
Arithmetic mean for Set 2 (MPa) .....:	
Retention (%).....:	

Supplementary information:

8.2	**TABLE: Resistance to ultra-violet radiation**	
8.2b)	Flexural strength test (ISO 178)	N/A
Material identification (manufacturer, type designation) ..... :		—
Shape and dimensions of test samples.....:		—
Conditioning for Set 1 of samples.....:		—
Conditioning for Set 2 of samples (including Annex C).....:		—
Test conditions (T °C, RH %)..... :		—

Set 1 (without Annex C conditioning)		Set 2 (after Annex C conditioning)	
Test sample #	Flexural strength (MPa)	Test sample #	Flexural strength (MPa)

Arithmetic mean for Set 1 (MPa) .....:	
Arithmetic mean for Set 2 (MPa) .....:	
Retention (%).....:	

Supplementary information:

8.2	TABLE: Resistance to ultra-violet radiation	
8.2c)	Charpy impact test (ISO 179) - unnotched	N/A
Material identification (manufacturer, type designation) ..... :		—
Shape and dimensions of test samples.....:		—
Conditioning for Set 1 of samples.....:		—
Conditioning for Set 2 of samples (including Annex C).....:		—
Test method (according to Tables 2 and 3 of ISO 179) ..... :		—
Test conditions (T °C, RH %)..... :		—

Set 1 (without Annex C conditioning)		Set 2 (after Annex C conditioning)	
Test sample #	Charpy impact strength (kJ/m^2)	Test sample #	Charpy impact strength (kJ/m^2)

Arithmetic mean for Set 1 (kJ/m^2)..... :	
Arithmetic mean for Set 2 (kJ/m^2)..... :	
Retention (%).....:	

Supplementary information:

8.2	TABLE: Resistance to ultra-violet radiation	
8.2d)	Charpy impact test (ISO 179) - notched	N/A
Material identification (manufacturer, type designation) .....:		—
Shape and dimensions of test samples .....:		—
Conditioning for Set 1 of samples .....:		—
Conditioning for Set 2 of samples (including Annex C).....:		—
Test method (according to Tables 2 and 3 of ISO 179) .....:		—
Test conditions (T °C, RH %).....:		—

Set 1 (without Annex C conditioning)		Set 2 (after Annex C conditioning)	
Test sample #	Charpy impact strength (kJ/m^2)	Test sample #	Charpy impact strength (kJ/m^2)

Arithmetic mean for Set 1 (kJ/m^2)..... :	
Arithmetic mean for Set 2 (kJ/m^2)..... :	
Retention (%)..... :	

Supplementary information:

8.2	TABLE: Resistance to ultra-violet radiation	
8.2e)	Izod impact test (ISO 180) - unnotched	N/A
Material identification (manufacturer, type designation) ..... :		—
Shape and dimensions of test samples.....:		—
Conditioning for Set 1 of samples.....:		—
Conditioning for Set 2 of samples (including Annex C).....:		—
Test method (according to Table 1 of ISO 180) ..... :		—
Test conditions (T °C, RH %)..... :		—

Set 1 (without Annex C conditioning)		Set 2 (after Annex C conditioning)	
Test sample #	Izod impact strength (kJ/m^2)	Test sample #	Izod impact strength (kJ/m^2)

Arithmetic mean for Set 1 (kJ/m^2)..... :	
Arithmetic mean for Set 2 (kJ/m^2)..... :	
Retention (%).....:	

Supplementary information:

8.2	TABLE: Resistance to ultra-violet radiation	
8.2f)	Izod impact test (ISO 180) - notched	N/A
Material identification (manufacturer, type designation) ..... :		—
Shape and dimensions of test samples.....:		—
Conditioning for Set 1 of samples.....:		—

Conditioning for Set 2 of samples (including Annex C).....:		—
Test method (according to Table 1 of ISO 180) ..... :		—
Test conditions (T °C, RH %)..... :		—

Set 1 (without Annex C conditioning)		Set 2 (after Annex C conditioning)	
Test sample #	Izod impact strength (kJ/m^2)	Test sample #	Izod impact strength (kJ/m^2)

Arithmetic mean for Set 1 (kJ/m^2)..... :	
Arithmetic mean for Set 2 (kJ/m^2)..... :	
Retention (%).....:	

Supplementary information:

8.2	TABLE: Resistance to ultra-violet radiation	
8.2g)	Tensile impact test (ISO 8256) - unnotched	N/A
Material identification (manufacturer, type designation) ..... :		—
Shape and dimensions of test samples.....:		—
Conditioning for Set 1 of samples.....:		—
Conditioning for Set 2 of samples (including Annex C).....:		—
Test method (A or B)		—
Test conditions (T °C, RH %)..... :		—

Set 1 (without Annex C conditioning)		Set 2 (after Annex C conditioning)	
Test sample #	Tensile impact strength (kJ/m^2)	Test sample #	Tensile impact strength (kJ/m^2)

Arithmetic mean for Set 1 (kJ/m^2)..... :	
Arithmetic mean for Set 2 (kJ/m^2)..... :	
Retention (%).....:	

Supplementary information:

8.2	TABLE: Resistance to ultra-violet radiation	
8.2h)	Tensile impact test (ISO 8256) - notched	N/A
Material identification (manufacturer, type designation) ..... :		—
Shape and dimensions of test samples.....:		—
Conditioning for Set 1 of samples.....:		—
Conditioning for Set 2 of samples (including Annex C).....:		—
Test method (A or B)		—
Test conditions (T °C, RH %)..... :		—

Set 1 (without Annex C conditioning)		Set 2 (after Annex C conditioning)	
Test sample #	Tensile impact strength (kJ/m^2)	Test sample #	Tensile impact strength (kJ/m^2)

Arithmetic mean for Set 1 (kJ/m^2)..... :	
Arithmetic mean for Set 2 (kJ/m^2)..... :	
Retention (%).....:	

Supplementary information:

ANNEX 1
Equipment of measurements

Equipment No	Kind of equipment	Model Type	Manufacturer	Last Cal Date	Next Cal Date	Last Ver Date	Next Ver Date	Test Clause
E-001	CE COMPACT TESTER	MI2094	METREL	15.03.2018	15.03.2019	---	---	---
E-011	Multimeter	UT61B	UNI-T	29.09.2018	29.09.2019	---	---	---
E-033	Temperature-Humidity Meter	30.3166.02.S2	TFA	28.09.2018	28.09.2019	---	---	---
E-052	IPX5/X6 Test equipment	MSTN-2	MULTITECH	28.03.2018	28.03.2019	---	---	---
E-006	Dust cabinet	---	ULMEKA MEKATRONİK	---	---	---	---	---

ANNEX 2
Photo Documentation

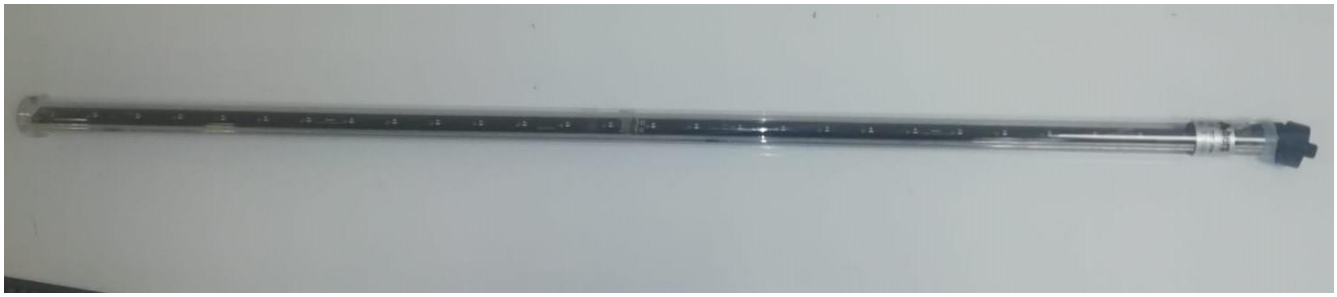
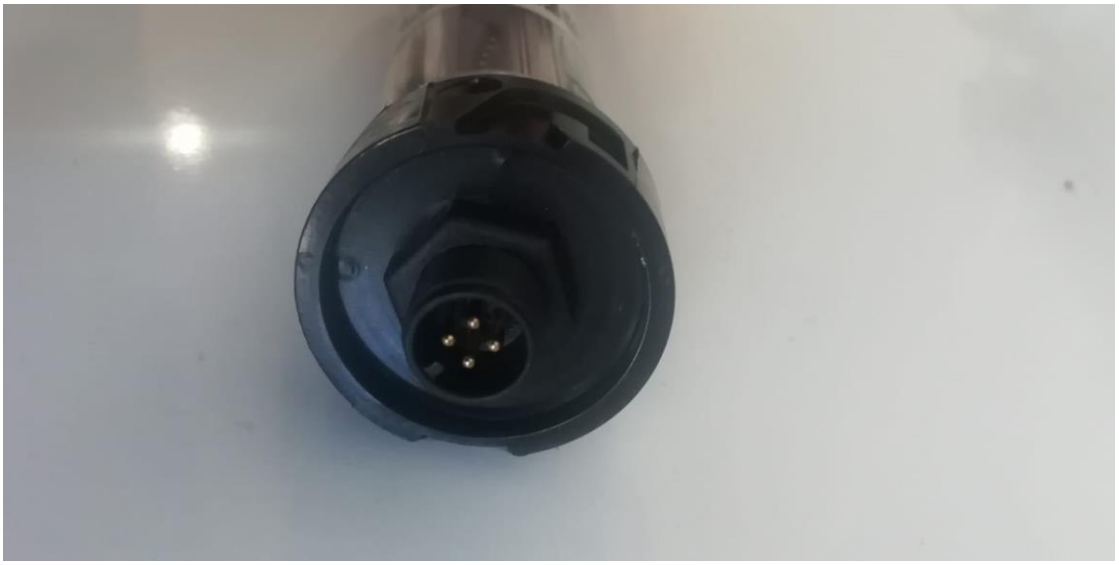
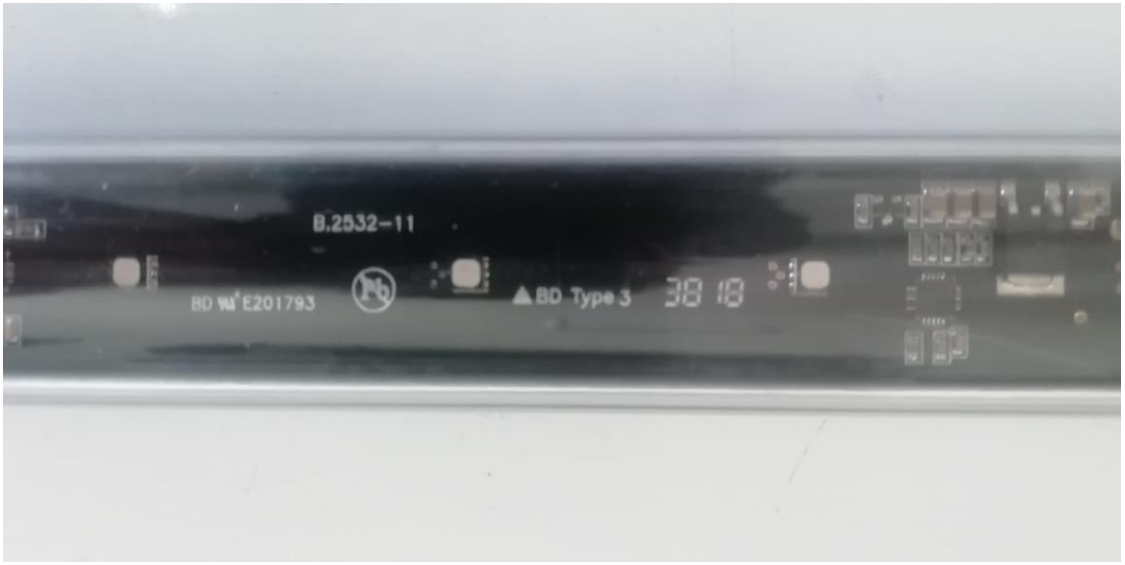
Photo documentation

Product View

Photo documentation

Product View

Product View