

**الموضوع: اختبار كشف إضاءة شوارع ليد قدرة
(١٠٠) وات- طراز: (TU) - انتاج شركة طيبة
للصناعات المتطورة.**

السيد المهندس / مدير ادارة الاضاءة

شركة طيبة للصناعات المتطورة

تحية طيبة وبعد ،،،،

بالإشارة إلى كتاب سيادتكم واستلام العينة بتاريخ ٢٠٢١/١٢/١٩ م، بخصوص الموضوع عاليه .
نتشرف بالاحاطه بأنه تم إجراء الاختبارات المطلوبه وتم إعداد التقرير الفنى رقم (٢٠٢١/٦٩٩) المتضمن نتائج الاختبارات
علما بان تكاليف إجراء الاختبارات هى مبلغ وقدره (٩٣٨١) جنيه (فقط وقدره تسعة الاف وثلاثمائة وواحد وثمانون جنهما
مصريا لاغير) شاملة ١٤ % قيمة ضريبة القيمة المضافة وتسدد القيمة نقدا أو بشيك باسم الشركة القابضة لكهرباء مصر
/ مركز أبحاث الجهد الفائق طبقاً للقواعد واللوائح المنظمة لذلك وسيتم استلام التقرير الفنى المكون من عدد (٥)
صفحات بموقع مركز أبحاث الجهد الفائق بعد سداد المبلغ قيمة الاختبارات بعاليه .
وتفضلوا بقبول فائق الاحترام والتقدير ،،،،

مدير عام الإدارة العامة للمعايرة والجودة الشاملة

مهندس / إيهاب فوزي محمود

رئيس قسم الشؤون المالية بالمركز

محاسب / ربيع محمد عبدالعزيز

رئيس قطاع

المعامل والبحوث والاختبارات

د. مهندس / سلوى علي أحمد

شريف....



TEST REPORT

REPORT No. (699 /2021)

- **CLIENT: TEBA for Development Industries.**
Plot No.1 –Industrial Zone(7A) – 10th of Ramadan- Egypt.
- **Report Date: 26/ 12 /2021.**
- **Place:**
 - EXTRA HIGH VOLTAGE RESEARCH CENTER LABORATORIES
 - Internal Code: TO – AC – 21 – 12 – 19 - 02.
- **Requirements:**
 - Test of LED street lighting luminaires (100) watt according to IEC standard.
- **Standard Specification:**
 - IEC (60598 –1)/(2008) : Luminaires – Part 1: General requirements and tests.
 - IEC (62722-2-1)/(2011) : Luminaire performance – Part 2-1: Particular requirements for LED luminaires.
 - IEC (62717)/(2015) : LED Modules for general lighting-Performance requirements.
 - IEC (61000-3-2)/(2018) : Electromagnetic compatibility (EMC) - Part 3-2: Limits -Limits for harmonic current emissions(equipment input current ≤ 16 A per phase).
- **Description of Specimen:**
 - LED street lighting luminaire (100) watt – Type: (TU) - Rated Input power: (100) Watt - Manufactured by TEBA for Development Industries - Made in Egypt.
- **Description of Testing Equipment:**
 1. Measure Device: Volnic X-10 – Series: (CCD) Spectrum System-Certification NO.:(64844/2021).
 2. Power analyzer, Model: "HIOKI-3196" - Certificate No.: (218/23/2020)
 3. Two voltage transformers – Type: (UZGT10) - Serial No.: (929130/65) and (925007/65).
 4. Insulation resistance apparatus (MEGGAR) - Serial No.: (32772-2).
- **Test Sample:**
 - Test sample was chosen under the responsibility of the client.
- **Tests:**
 - 1- Marking.
 - 2- Insulation Resistance.
 - 3- Electric Strength.
 - 4- Total Input Power.
 - 4.1 LED luminaire Power.
 - 4.2 Displacement Factor.
 - 5- Luminous Flux.
 - 6- Correlated Colour Temperature (CCT).
 - 7- Colour Rendering Index (CRI).
 - 8- Luminaire Efficacy.



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▪ **Test Method and Results:**

1- Marking

Testing Date: 21/12/2021

Testing Engineer: Mohamed Khairy

- The test was carried out according to clause (3.4) of IEC (60598-1).
- The marking shall be legible, marking labels shall not be easily removable and they shall show no curling.
- The LED luminaire met the requirements.

2- Insulation Resistance

Testing Date: 21/12/2021

Testing Engineer: Mohamed Khairy

- The test was carried out according to sub-clause (10.2.1) of IEC (60598-1).
- The insulation resistance shall be more than (2) MΩ.
- The measured value of the insulation resistance was (12.3) GΩ .
- The LED luminaire passed the test

3- Electric Strength

Testing Date: 21/12/2021

Testing Engineer: Mohamed Khairy

- The test was carried out according to sub-clause (10.2.2) of IEC (60598-1).
- No flashover or breakdown shall occur during the test.
- The LED luminaire passed the test.

4- Total Input Power

Testing Date: 21/12/2021

Testing Engineer: Mohamed Khairy

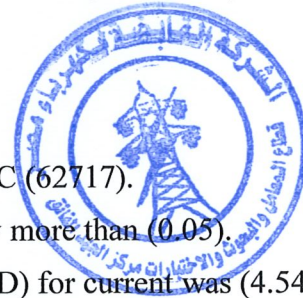
- The test was carried out according to clause (7) of IEC (62722-2-1) as following:

4.1 LED luminaire Power

- The test was carried out according to clause (7.1) of IEC (62717).
- The initial power consumed shall not exceed the rated power (100) Watt by more than (10) %.
- The measured value of the total power at the rated voltage (220 V) for the LED Luminaire was (99.25) Watt.
- The LED luminaire met the requirements.

4.2 Displacement Factor

- The test was carried out according to clause (7.2) of IEC (62717).
- The displacement factor shall not be less than (0.99) by more than (0.05).
- The measured value of Total Harmonic Distortion (THD) for current was (4.54) %.



Signature

M. Khairy



Report No. (699 /2021)

- The harmonic currents shall not exceed the relative limits given in [Table 2] of IEC (61000-3-2).
- The maximum permissible harmonic current expressed as a percentage of the input current at the fundamental frequency illustrated in the following table:

No.	Harmonic order	Maximum permissible	Measured value	Remark
1	2	2	0.02	Pass
2	3	29.64	2.5	Pass
3	5	10	1.7	Pass
4	7	7	0.06	Pass
5	9	5	1.2	Pass
6	$11 \leq n \leq 39$ (Odd harmonic only)	3	1.09 (Max.)	Pass

- The measured value of the power factor was (0.988).
- The displacement factor value for the LED Luminaire was (0.989).
- **The LED luminaire met the requirements**

5- Luminous flux

Testing Date: 22/12/2021

Witness Engineer: Mohamed Antar

- The test was carried out according to clause (8.1) of IEC (62722-2-1).
- The initial luminous flux shall not be less than the rated luminous flux (12000) lm, by more than (10) %.
- The measured value of the luminous flux for the LED Luminaire was (12267) lm.
- **The LED luminaire met the requirements**

6- Correlated Colour Temperature (CCT)

Testing Date: 22/12/2021

Witness Engineer: Mohamed Antar

- The test was carried out according to clause (9.2) of IEC (62722-2-1).
- The measured value of correlated colour temperature (CCT) for the LED Luminaire was (6500) K.
- **The LED luminaire achieved the above value.**

7- Colour Rendering Index (CRI)

Testing Date: 22/12/2021

Witness Engineer: Mohamed Antar

- The test was carried out according to clause (9.3) of IEC (62722-2-1).
- The measured value of initial Colour Rendering Index (CRI) for the LED Luminaire was (83.1).
- **The LED luminaire achieved the above value.**





Report No. (699 /2021)

8- Luminaire Efficacy

Testing Date: 22/12/2021

Witness Engineer: Mohamed Antar

- The test was carried out according to clause (8.3) of IEC (62722-2-1).
- The LED Luminaire efficacy shall not be less than (90) % of the rated LED Luminaire efficacy (120) lm/W.
- The measured value of luminaire efficacy was (123.59) lm/W.
- The LED luminaire met the requirements

■ Conclusion:

- The LED street lighting luminaire (100) watt –Type: (TU) - Rated Input power: (100) Watt Manufactured by TEBA for Development Industries - Made in Egypt, achieved the results of tests mentioned in this report according to IEC. The customer to check of carrying out other remaining tests specified in IEC standard and not included in this report.

■ Notes:

- Tests were carried out on the above specimen only without any responsibility concerning other untested specimens.
- The tests were carried out without any obligation on Egyptian Electricity Holding Company
- This test report shall not be reproduced except in full, without written approval of EHVR.
- This report and results are related only to the tested specimen.
- This report to be stamped for use.
- This test report is forbidden to be reproduced without prior permission of the Extra High Voltage Research Centre.
- This report is valid for the tested specimen and for a maximum three years unless there is a change in the design or specifications mentioned in this report.

■ Test Engineers:

A.C. Lab.

Eng. Mohamed Antar

Imp. Lab.

Eng. Mohamed Khairy

General Manager

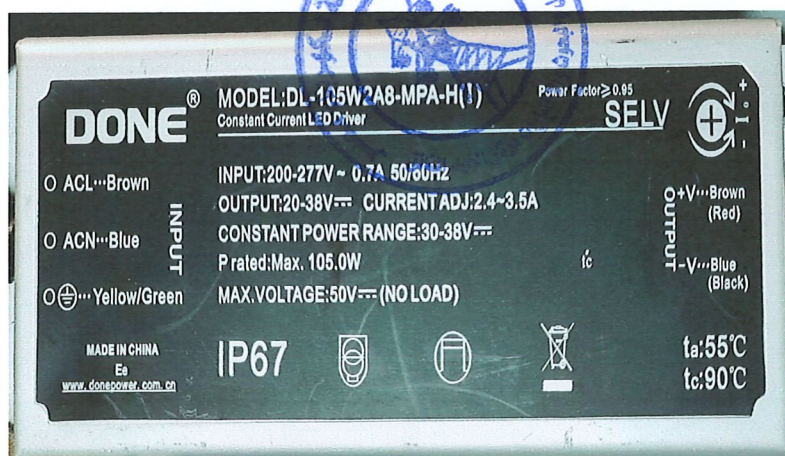
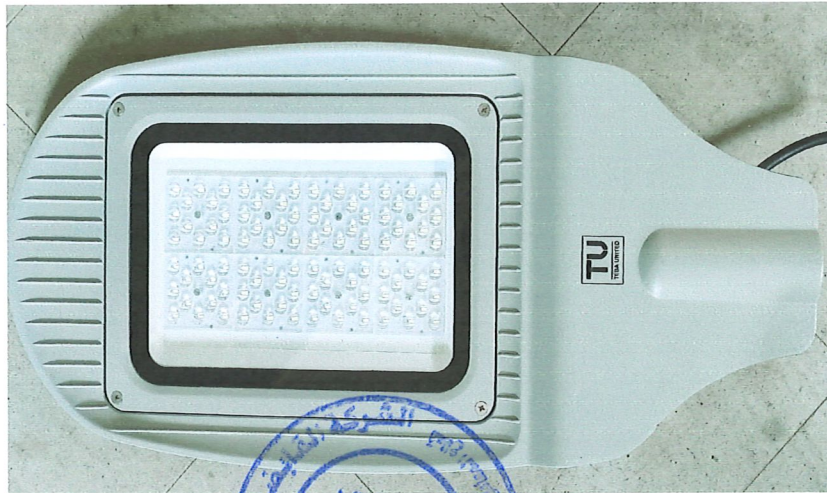
Eng. Ehab Fawzy Mahmoud

Head Sector

Dr. Eng. Salwa Ali Ahmed

Sherif...





Test report No.85/86/87/88

Performed tests:

Electrical and photometric testing and evaluation in accordance with LM79 -SDCM, IP Test
– IK test- Fragmentation test.

Sample tested:

Street light luminaires 100w Code : 8100

Manufactures : TEBA for development industries

Address : Plot No.1 ,Industrial zone (7A) ,10th of Ramadan , Egypt

Brief of test results

Test	Standard	Result	
IP66 test	IEC60598	Pass	
IK08 test	IEC62262 , IEC 60068-2-75	Pass	
Fragmentation test	EN12150	pass	
Electrical test	IEC60598	V=223.6V P=95.109W	I = 0.43 A PF= 0.9889
Photometric test	IESNA LM79-2008	Eff.= 123.35 Ra = 80.72% SDCM= 4.8	Total Flux= 11731 lm CCT= 5867 K Beam angle = 120°

Test details are included in the report

The samples represent themselves only without the slightest responsibility on the management of the institute

تم الاختبار بواسطة

مجدي كامل
مدير عام

رئيس وحدة الطابع الخاص

إ.د محمود فخر الدين

عبد الله أبو البوشى



Report No.: 85

Degrees of Protection provided by Enclosures (IP66) test Report

Applicant	TEBA for development industries
Address	
Product Covered	Street light
Representative (tested) model	8100
Testing Standard	IEC60598
Testing Results	Passed

Test item particular:

Test no.	Test Method	Sample serial No.	Pass/Fail
1	Clause 9.2.1	8100	Pass
2	Clause 9.2.5	8100	Pass

Electrical rating:

Model No.	Voltage	Frequency	Power
8100	220 V	50 HZ	100 W

Test 1(IP6X) :

Test Conditions:

21 ° C , 60 RH

Test Input Voltage/Frequency:

220V /50 HZ

Test Parameters:

Test duration: 3 h .

Weight of talcum powder (Kg): 2Kg/m³



Result: Talcum powder did not enter the enclosure.

Test 2(IPX6) :

Test Conditions:

19 ° C, 62 RH

Test Input Voltage/Frequency:

220V /50 HZ

Test Parameters:

Test duration: 10 min.

Jet: D= 12.5 mm water flow = 100 l/min (100 KN/M²)

Result: Accepted, there was no trace of water on current-carrying parts



Approved by :



Report No.: 86

Degrees of Protection Provided by Enclosures for Electrical Equipment Against External Mechanical Impacts (IK08)

Applicant	TEBA for development industries
Address	10 th Of Ramadan
Product Covered	Street light
Representative (tested) model	8100
Testing Standard	IEC62262-2-75 , IEC 60068
Testing Results	Passed

Test item particular :

Test no.	Test Method	Sample serial No.	Pass/Fail
1	Clause 5 IEC 60068-2-75	8100	Pass

Electrical rating:

Model No.	Voltage	Frequency	Power
8100	220 V	50 HZ	100 W

Test Results:

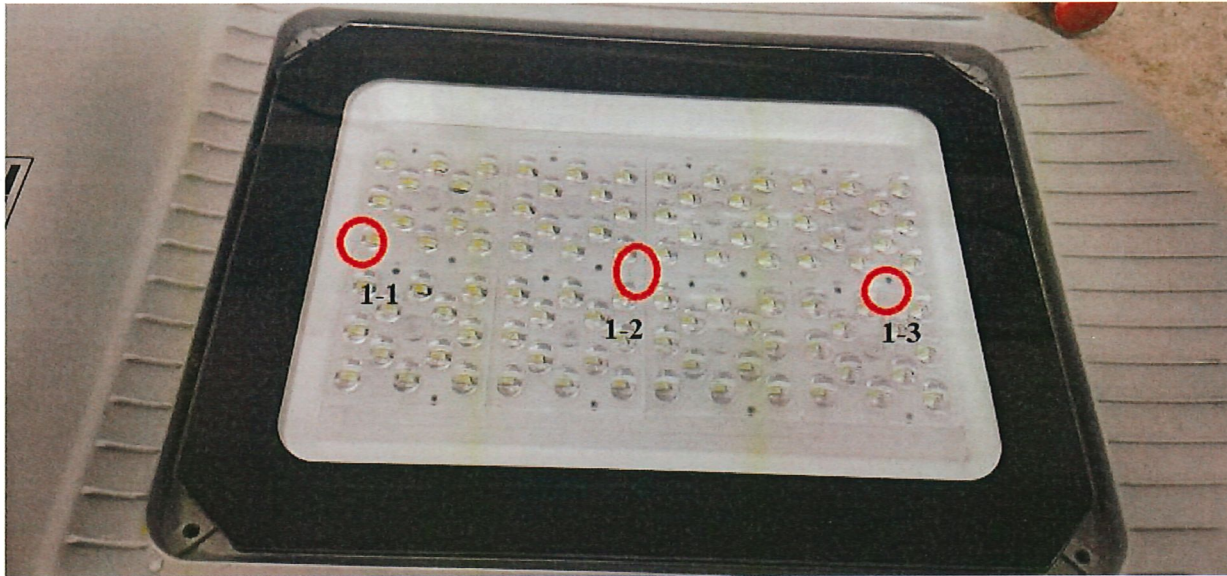
IK08 Test:

Fixture model(s) tested	IK code tested	Impact energy	Passed/Failed (P/F)
8100	08	5 J	PASS

Table 1 –Relation between IK code and impact energy

IK code	IK00	IK01	IK02	IK03	IK04	IK05	IK06	IK07	IK08	IK09	IK10
Impact energy. J	0	0.14	0.2	0.35	0.5	0.7	1	2	5	10	20
*Not protected according to this standard											
Note 1 When higher impact energy is required. The value of 50 j is recommended											
Note 2 A characteristic group numeral of two figures has been chosen to avoid confusion with some national standards which used a single numeral for a specific impact energy											

Impact Locations: :



Result:

There was no accessibility of contact of uninsulated live parts, or internal wiring becoming accessible to contact, as determined by the accessibility probe;
There was no reduction of spacing to values below the minimum acceptable values;
There was no reduction in the effectiveness of strain relief means;
There was no cracking or denting of the enclosure that might reduce the effectiveness of the enclosure to keep out water or dust

Approved by :



Report No.87

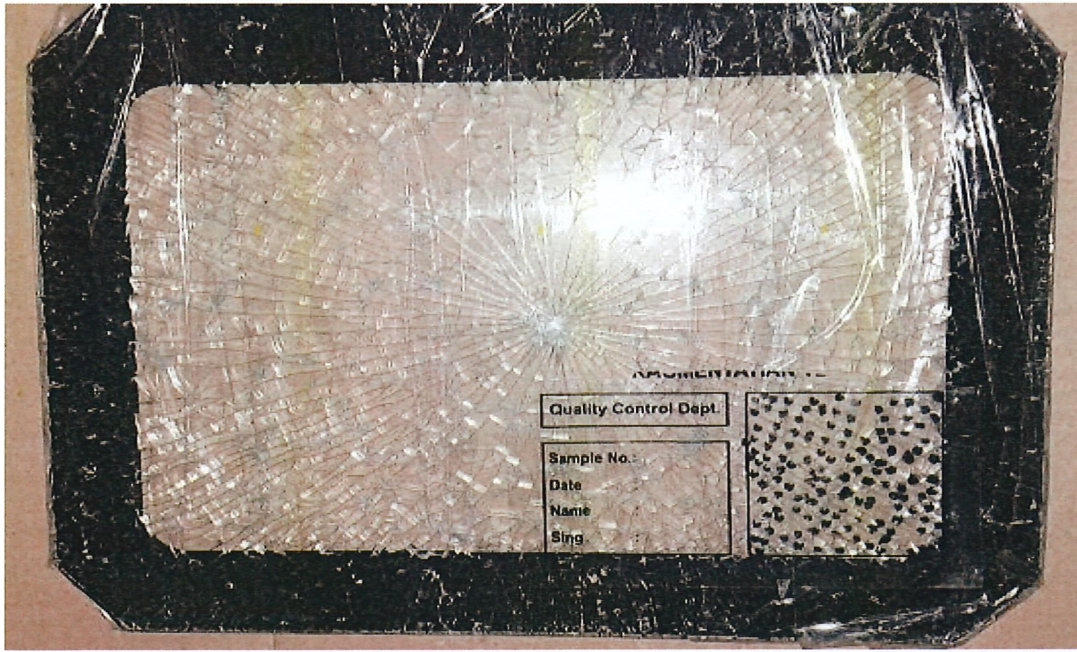
Fragmentation test for flat glass

Applicant	TEBA for development industries
Address	10 th Of Ramadan
Product Covered	Street light
Representative (tested) model	8100
Testing Standard	EN 12150-1
Testing Results	Passed

Test Results:

Fixture model(s) tested	test criteria	Result	Passed/Failed (P/F)
8100	The counting of Fragments : 40 to 350	102	PASS

Sample photo :



Approved by :

م. م. م. م.



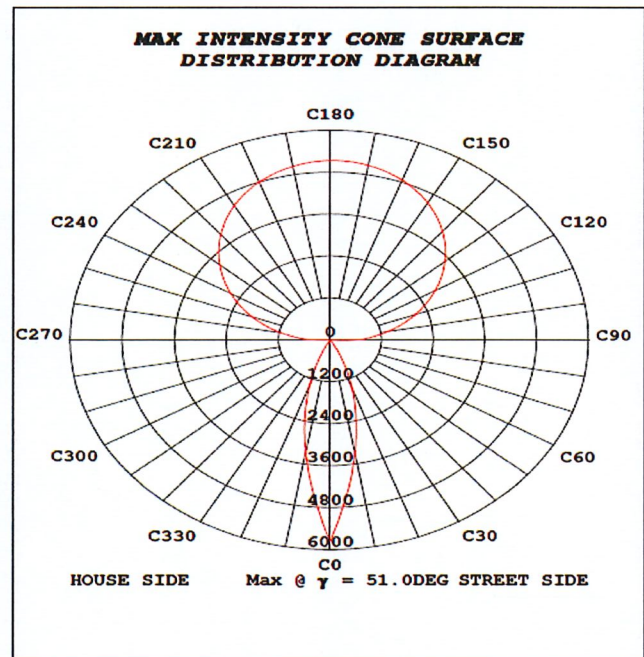
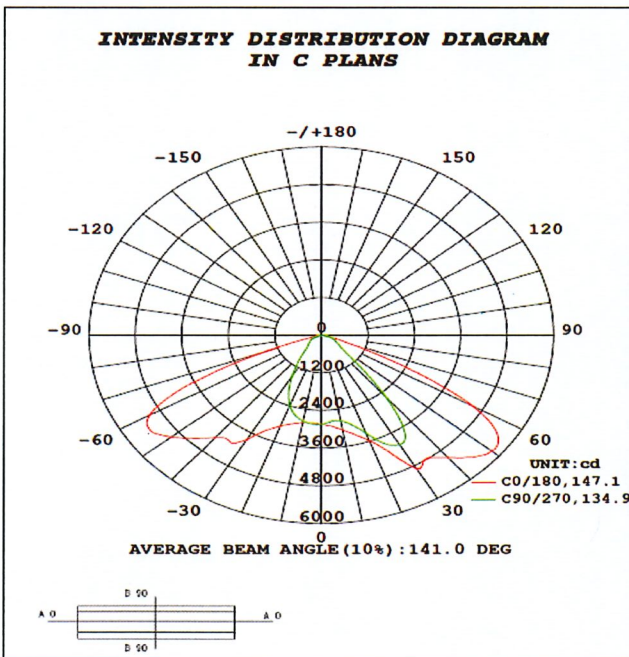
Report No.: 88

Electrical and photometric test

STREETLIGHT PHOTOMETRIC TEST REPORT

Test: U: 223.67V I: 0.4300A P: 95.109W PF: 0.9889 Freq: 50.00Hz Lamp Flux: 11731.4x1 lm		
NAME: hayah karima	TYPE: street	WEIGHT:
SPEC.: glass	DIM.: 0.24*0.15	SERIAL No.: 8100
MFR.: T U	SUR.: 0.24*0.15	Shielding Angle: IP66

DATA OF LAMP		PHOTOMETRIC DATA Eff: 123.35 lm/W Ra 80.72 CCT 5867K			
MODEL	100w	Imax (cd)	5762	η street_up (%)	0.0
NOMINAL POWER (W)	100	LOR (%)	100.0	η street_down (%)	53.9
RATED VOLTAGE (V)	226	TOTAL FLUX (lm)	11731	η house_up (%)	0.0
NOMINAL FLUX (lm)	11731.4	MAXIMUM @ (C, γ)	0, 51.0	η house_down (%)	46.1
SDCM	4.8	η up (%)	0.0	76 FLASHAREA (m2)	0.00100
TEST VOLTAGE (V)	225.2	η down (%)	100.0	SLI	16.679



C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: slama
Test Date: 30/1/2022

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
Test System: EVERFINE GO1900_V2 SYSTEM V2.0.366
Humidity: 65.0%
Test Distance: 7.300m [K=1.0000]
Remarks:



Sample photos

