



جراي ماكنزي للخدمات الهندسية (ش.ذ.م.م.)  
Gray Mackenzie Engineering Services L.L.C.

ب.ب. ٣٢٣٩٣ - دبي  
الإمارات العربية المتحدة  
تليفون : ٩٧١ ٤ ٣٢٤١٣٨٠  
فاكس : ٩٧١ ٤ ٣٢٤١٣٨٤  
P.O. Box: 32393 Dubai  
United Arab Emirates  
Tel : 00 971 4 3241380  
Fax : 00 971 4 3241384  
E-Mail: mail@gmes.ae

### TEST REPORT

Reference Standard: IEC 60598-2-1

Luminaires - Part 2-1: Particular requirements - Fixed general purposed luminaires

Report Reference No. .... :	47026
Date of issue ..... :	27 June 2018
Total Number of Pages ..... :	8
<b>Applicant's Name</b> ..... :	<b>LITE-TECH INDUSTRIES L.L.C</b>
Address ..... :	13-B, Ras Al Khor Ind. No.1, PO. Box: 60305, Dubai, UAE.
<b>Test specification:</b>	
Standard(s) ..... :	IEC 60598-2-1, IEC 60598-1
Test Report Form No. .... :	GMES/LAB/FRM/-021 Rev 01, Jan'18
Test Report Form(s) Originator .... :	Gray Mackenzie Engineering Services LLC
Master TRF ..... :	04-January-2018
Client Document No. .... :	N/A
Client Reference No. .... :	N/A
Lab Reference No ..... :	N/A
Job No ..... :	23759
Data Sheet No ..... :	16025
<b>Test Item Description</b> ..... :	LED Step Light
Trademark/Identification mark ..... :	LITE-TECH
Manufacturer name ..... :	LITE-TECH INDUSTRIES L.L.C
Model/Type reference ..... :	45-STEPSTAR-1821D-7-840-SG-EU
Serial Number ..... :	Not Indicated
Ratings ..... :	220V-240V, 50/60Hz, 7W, IP65, Ta.45°C, 4000K, 578lm



**Testing Procedure and Testing Location:**

<input checked="" type="checkbox"/>	<b>Testing Laboratory:</b>	Gray Mackenzie Engineering Services LLC
<b>Tested By (name+signature).....:</b>		Vijji.Pitta <i>[Signature]</i>
<b>Approved By (name+signature).....:</b>		for Harish N. Vasavan <i>[Signature]</i>

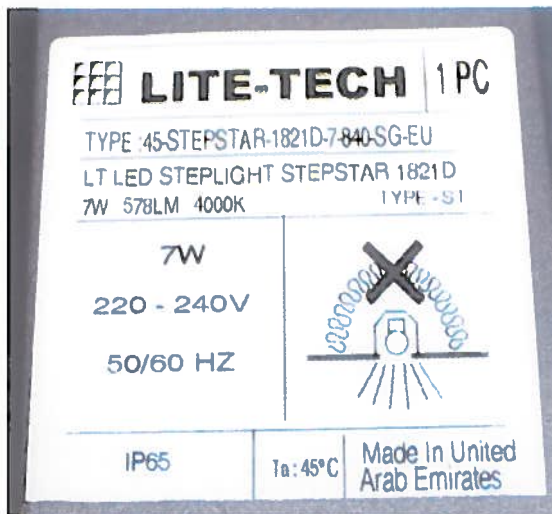
**Summary of Testing:**

- The product complies with the requirements of the tests performed as per IEC 60598-2-1, IEC 60598-1.
- The product complies with the KUCAS and SASO Essential Requirements.

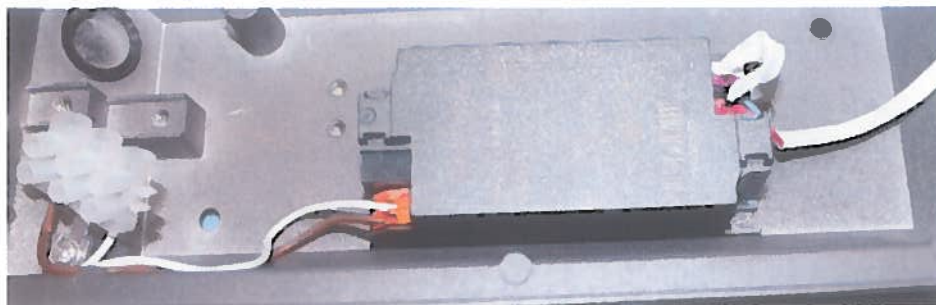
**Note:** Clause No 4 & 12 of IEC 60598-1 are not covered under GAC Scope of accreditation.

**Copy of Marking Plate:**

Luminaire Marking:



**Control Gear Marking:**





**Possible Test Case Verdicts:**

- test case not conducted to the test object.....: N/C
- 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 .....: 19 June 2018

Date (s) of performance of tests .....: 21 June 2018 to 26 June 2018

Laboratory Temperature.....: 23±2°C

**General Remarks:**

The test results presented in this report relate only to the object tested.

This report shall not be reproduced in full/partial without the written approval of the Issuing testing laboratory.

"(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.



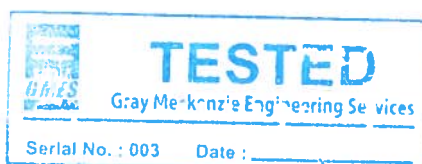
IEC 60598-2-1			
Clause	Requirement - Test	Result - Remark	Verdict
1.5 (3)	<b>MARKING:</b>		P
3.1	<b>GENERAL:</b>		P
	Any written instructions related to safety shall be in a language which is acceptable in the country in which the equipment is to be installed.		P
3.2	<b>MARKING ON LUMINAIRES:</b>		P
	Mark of origin	LITE-TECH	P
	Rated voltage(s) in volts	220-240V	P
	rated maximum ambient temperature $t_a$	Ta 45°C	P
	Symbol for class II luminaires		N/A
	Symbol for class III luminaires		N/A
	Marking with IP numbers	IP65	P
	Model number or type reference	45-STEPSTAR-1821D-7-840-SG-EU	P
	Rated wattage or the designation	7W	P
	Symbol for luminaires for lamps of similar shape to "cool beam"		N/A
	Except for type Z attachments, terminations shall be marked to identify live, neutral and earth		P
	Symbol for minimum distance from lighted objects		N/A
	Symbol for rough service luminaires		N/A
	Symbol for luminaires for cracked protective shield		N/A
	Luminaires incorporating a protective shield		N/A
	maximum number of luminaires that may be interconnected or the maximum total current		N/A
	Relevant symbol for luminaires not suitable for covering with thermally insulated material.		N/A
3.3	<b>Additional information:</b>		P
	All details which are necessary to ensure proper installation, use and maintenance shall be given		P
3.3.2	Nominal Frequency:	50/60Hz	P
3.3.3	Operating temperature:	Ta 45°C	P
3.3.17	Supply cord replacement instruction		N/A
1.5 (3.4)	<b>TEST OF MARKING:</b>		P
	After the test, the marking shall be legible,		P
	marking labels shall not be easily removable and		P
	They shall show no curling.		P

IEC 60598-2-1					
Clause	Requirement - Test	Result - Remark		Verdict	
1.6 (4.13)	<b>MECHANICAL STRENGTH:</b>			<b>P</b>	
4.13.1	Luminaires shall have adequate mechanical strength and be so constructed as to be safe after such rough handling as may be expected in normal use.	Applied impact energy		<b>P</b>	
		Fragile	Other		
		0.20 Nm	0.35 Nm		
4.13.2	Metal parts enclosing live parts shall have adequate mechanical strength.	No Live Parts		<b>P</b>	
1.6 (4.14)	<b>SUSPENSION AND ADJUSTING DEVICES:</b>			<b>P</b>	
4.14.1	Mechanical suspensions shall have adequate factors of safety.			<b>P</b>	
4.14.2	The mass of the luminaire suspended by flexible cables or cords shall not exceed 5 kg.			<b>N/A</b>	
	The total nominal cross-sectional area of the conductors of flexible cables or cords suspending pendants shall be such that the stress in the conductors does not exceed 15 N/mm <sup>2</sup>			<b>N/A</b>	
4.14.3	Adjusting devices and means of adjustment shall be so constructed that cords or cables are not pressed, clamped, damaged or twisted along the longitudinal axis by more than 360° during operation			<b>N/A</b>	
1.6 (4.21)	<b>PROTECTIVE SHIELD:</b>			<b>N/A</b>	
4.21.4	inspection and by the following tests:			<b>N/A</b>	
	– the protective shield shall comply with the impact test of 4.13.1 with the impact energy of Table 4.3 for fragile parts;			<b>N/A</b>	
	– parts of the lamp compartment, if of insulating material, shall comply with the resistance to flame and ignition test of 13.3.2.			<b>N/A</b>	
1.7 (11)	<b>CREEPAGE DISTANCES AND CLEARANCES</b>			<b>P</b>	
	Creepage and clearances distance (mm) between	Measured		Limit (mm)	
	Current carrying parts of different polarity	2.2Cr	2.0Cl	1.2Cr	0.2Cl
	Live parts and mounting surface	2.3Cr	2.2Cl	1.2Cr	0.2Cl
1.8 (7.2.1)	<b>PROVISION FOR EARTHING:</b>			<b>P</b>	
	Metal parts separated from live parts by double insulation or by reinforced insulation, are not regarded as likely to become live in the event of an insulation fault.			<b>N/A</b>	
	The earthing connections shall be of low resistance.	0.03Ω		<b>P</b>	
	Functional earth circuit shall be separated from live parts or accessible metal parts by double or reinforced insulation.			<b>N/A</b>	





IEC 60598-2-1			
Clause	Requirement - Test	Result - Remark	Verdict
1.10 (5.2)	<b>SUPPLY CONNECTION AND OTHER EXTERNAL WIRING</b>		P
	Luminaires shall be provided with one of the following means of connection to the supply:		-
	- fixed luminaires	Terminal	P
	- portable luminaires		N/A
	- track-mounted luminaires		N/A
	- semi-luminaires		N/A
1.11 (8.2)	<b>PROTECTION AGAINST ELECTRIC SHOCK:</b>		P
	Luminaires shall be so constructed that their live parts are not accessible when the luminaire has been installed and wired as in normal use, and when it is opened as necessary for replacing lamps or (replaceable) starters		P
			P
			P
			N/A
1.12 (12.4)	<b>THERMAL TEST: (normal use)</b>		P
		Ambient Temperature: 45.0°C	-
	LED Driver:	48.8°C	P
	Enclosure:	46.3°C	
	Internal wire:	48.2°C	
1.13 (9)	<b>RESISTANCE TO DUST, SOLID OBJECTS AND MOISTURE</b>		P
9.3.1	All luminaires shall be proof against humid conditions which may occur in normal use.	25°C 93%Rh 48h	P
1.14 (10.2)	<b>INSULATION RESISTANCE AND ELECTRIC STRENGTH:</b>		P
	The insulation resistance and the electric strength of luminaires shall be adequate.	Between live parts and Enclosure	P
	500V DC Insulation Resistance:	>99.99MΩ	P
	1480V AC 60Sec Electric Strength:	No Breakdown	P
(10.3)	<b>LEAKAGE CURRENT/TOUCH CURRENT:</b>		P
	The touch current or protective conductor current that may occur during normal operation of the luminaire shall not exceed the values given in Table 10.3	0.02mA	P





IEC 60598-2-1			
Clause	Requirement - Test	Result - Remark	Verdict

1.15 (13)	<b>RESISTANCE TO HEAT, FIRE AND TRACKING</b>		P
13.2	External parts of insulating material providing protection against electric shock,		N/A
	and parts of insulating material retaining current-carrying parts or SELV parts in position shall be sufficiently resistant to heat.	BPT 125°C	P
13.3	Parts of insulating material retaining current-carrying parts or		P
	SELV parts in position		N/A
	And external parts of insulating material providing protection against electric shock	GWT 650°C	P
	shall be resistant to flame and ignition.	No Flame	P

<b>Kucas</b>	<b>ESSENTIAL REQUIREMENTS:</b>		P
	Rated Voltage:	220-240V	P
	Rated Frequency:	50/60Hz	P
	Plug:		N/A
	Country of Origin:	UAE	P
	Instruction Manual:		P

<b>SASO</b>	<b>ESSENTIAL REQUIREMENTS:</b>		P
	Rated Voltage:	220-240V	P
	Rated Frequency:	50/60Hz	P
	Plug:		N/A
	Country of Origin:	UAE	P
	Instruction Manual:		P



PHOTOGRAPH OF TEST OBJECT:

