

TEST REPORT IES LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-State Lighting Products.	
Intertek Report No.....:	ULR-TC622821000001224F
Date of Report issue.....:	21-Oct-2021
Total number of pages.....:	12
Testing Laboratory.....:	Intertek India Private Limited
Address.....:	E-26, Block B1, Mohan Co-operative Industrial Area, Mathura Road, New Delhi -110044, India
Customer / Applicant's name.....:	R. STAHL Private Ltd.
Address.....:	Plot No. 5, Malrosapuram Main Road Sengundram Ind. Area Singaperumal Koil Kancheepuram Dist Tamilnadu PIN 603 204 India
Discipline.....:	Photometry
Product Group.....:	Light Sources (Electric Lamp)
Test specification:	
Standard.....:	IES LM-79-08
Non-standard test method.....:	N/A
Test Report Form No.....:	LFT-APAC-IN-OP-10p Version: 17 th Jun 2020
Test item description.....:	LED pendant light 25W, 5700K, With reflector
Trade Mark.....:	STAHL
Manufacturer.....:	R. STAHL Private Ltd.
Model/Type reference.....:	6057,6457- 25W
Ratings.....:	230V AC, 50Hz, 25W, 0.12A
Tested by (Name + Signature + Function).....:	VIJAY KUMAR (Engineer) 
Reviewed by (Name + Signature + Function).....:	HARI OM  (Technical Leader - Lighting)
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General product information:

The LED Light is provided with Supply cord for supply connection.

LED Binning details: L2C5-57801205F1300

LED Details*:

Make: ---, Model: ---, No. of LEDs: ---

LED Controlgear/Driver Details*:

Make: ---, Model: ---, No. of LED Drivers: ---

COB provided with Lenses / Glass.....: Yes /No.

Note:

*As declared by the Customer / Applicant.

Testing:

Date of receipt of test item.....: 29-Sep-2021
Condition of Sample Received.....: Physically Good
Sample Identification no(s).....: D26210929-003
Sample Serial no(s).....: Not provided
Date (s) of performance of tests.....: 06-Oct-2021

Laboratory conditions:

Ambient Temperature.....: 25 ± 4°C
Relative humidity.....: Less than 70 %

General remarks (If any):

The test results reported in this report relate only to the sample tested.
This report shall not be reproduced, except in full, without the written approval of report issuing testing laboratory.

Remarks:

The results tabulated in this report are representative of the actual test sample(s) submitted for this report only. The data is provided to the customer for further evaluation. Compliance to the referenced specification requirements is not determined in this report.

SUMMARY OF TEST RESULTS		
Sr. No.	Tests performed (name of test and test clause)	Verdict
1.	Electrical and Photometric measurements (Clause 8, 9, 10 and 11)	To be evaluated by customer
2.	Colorimetric measurements (Clause 12)	To be evaluated by customer

EQUIPMENTS USED				
Sr. No.	Equipment ID	Equipment name	Last calibration date	Next calibration date
1	ETL-LED-0094	High Speed Type-C Goniophotometer	Verified before use	Verified before use
2	ETL-LED-0095	Luminous Intensity Standard Lamp	05-Oct-2015	After 50Hrs. burning time
3	ETL-LED-0096	Luminous Intensity Standard Lamp	05-Oct-2015	After 50Hrs. burning time
4	ETL-LED-0097	Luminous Intensity Standard Lamp	05-Oct-2015	After 50Hrs. burning time
5	ETL-LED-0100	Digital Power Meter	12-Mar-2021	11-Mar-2022
6	ETL-LED-0105	Integrating Sphere	Verified before use	Verified before use
7	ETL-LED-0106	Spectral Flux Calibrated Standard Lamp	11-Nov-2015	After 50Hrs. burning time
8	ETL-LED-0111	Digital Power Meter	10-Jun-2021	09-Jun-2022
9	ETL-LED-0291	Humidity-cum Temperature Meter	19-Aug-2021	18-Aug-2022

Test No.01 Electrical and Photometric measurements - Distribution Method

TEST METHOD:

A LSI Type C High Speed Model 6440 Mirror Goniometer was used to measure the intensity (candelas) at each angle of distribution for each sample. Photometric distance was more than five times of the largest dimension of the test sample i.e. 8.63meter.

Ambient temperature was measured equal to the height of the sample mounted on the Goniometer equipment. The ambient temperature was maintained at **25±1°C** during testing.

Sample was operated at input rated voltage in its designated orientation as specified by Manufacturer.

Electrical measurements including voltage, current, and power were measured using the power meter.

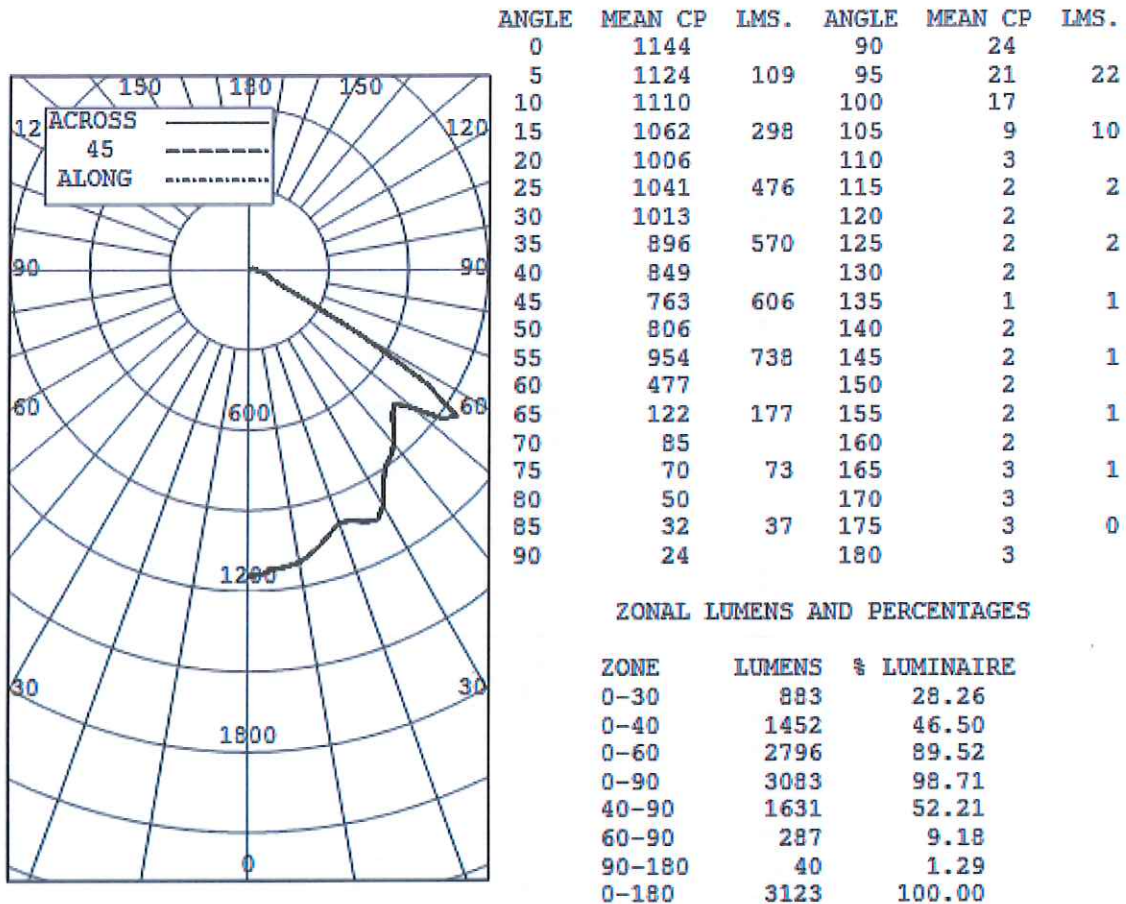
Each sample was allowed to stabilize for at least thirty minutes before measurements were made. The condition of the sample tested was new. Stabilization time before testing was **45** minutes.

TEST RESULTS

Input Voltage (Vac)	Input Frequency (Hz)	Current (A)	Power (W)	Power Factor
230.19	50.0	0.119	26.83	0.983

Total Luminous Flux (lm)	Luminous Efficacy (lm/W)
3123.0	116.4

INTENSITY(CANDLEPOWER) SUMMARY:



ZONAL LUMENS AND PERCENTAGES

ZONE	LUMENS	% LUMINAIRE
0-30	883	28.26
0-40	1452	46.50
0-60	2796	89.52
0-90	3083	98.71
40-90	1631	52.21
60-90	287	9.18
90-180	40	1.29
0-180	3123	100.00

*** THIS IS AN ABSOLUTE TEST ***

LUMINANCE SUMMARY CD./SQ.M.

ANGLE	MEAN CD/SQ M	S/MH:	SC:
45	248074	1.3	
55	382231		1.3
65	66249		
75	62138		
85	85680		

TESTED IN ACCORDANCE WITH IES PROCEDURES.



Total Quality. Assured.

INTENSITY (CANDLEPOWER) DATA:

ANGLE	INTENSITY (CANDLEPOWER)	LUMENS
0	1144	
5	1124	109
10	1110	
15	1062	298
20	1006	
25	1041	476
30	1013	
35	896	570
40	849	
45	763	606
50	806	
55	954	738
60	477	
65	122	177
70	85	
75	70	73
80	50	
85	32	37
90	24	
95	21	22
100	17	
105	9	10
110	3	
115	2	2
120	2	
125	2	2
130	2	
135	1	1
140	2	
145	2	1
150	2	
155	2	1
160	2	
165	3	1
170	3	
175	3	0
180	3	



Total Quality. Assured.

AVERAGE LUMINANCE DATA:

CD./SQ.M (FOOTLAMBERTS)		
ANGLE	LUMINANCE	
0	262066	(76487)
30	267927	(78198)
40	253859	(74092)
45	248074	(72404)
50	287261	(83841)
55	382231	(111559)
60	218665	(63820)
65	66249	(19335)
70	56766	(16568)
75	62138	(18136)
80	65895	(19232)
85	85680	(25007)



Total Quality. Assured.

COEFFICIENTS OF UTILIZATION:

ZONAL CAVITY METHOD

EFFECTIVE FLOOR CAVITY REFLECTANCE = .20

CC WALL	90				80				70				50				30				10				0	
	70	50	30	10	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0	
RCR																										
0	1.221	.221	.221	.22	1.191	.191	.191	.19	1.161	.161	.161	.16	1.101	.101	.10	1.051	.051	.05	1.011	.011	.01					0.99
1	1.131	.091	.051	.01	1.101	.061	.031	.00	1.081	.041	.010	.98	1.000	.970	.95	0.960	.940	.91	0.920	.900	.89					0.87
2	1.050	.980	.920	.86	1.020	.960	.900	.85	1.000	.940	.880	.84	0.900	.860	.82	0.870	.830	.80	0.840	.810	.78					0.76
3	0.970	.870	.790	.74	0.940	.850	.780	.73	0.920	.840	.770	.72	0.810	.750	.71	0.780	.730	.69	0.750	.720	.68					0.66
4	0.890	.780	.700	.64	0.870	.770	.690	.63	0.850	.750	.690	.63	0.730	.670	.62	0.700	.650	.61	0.680	.640	.60					0.58
5	0.830	.700	.610	.55	0.800	.690	.610	.55	0.780	.680	.600	.54	0.650	.590	.54	0.630	.580	.53	0.620	.570	.52					0.50
6	0.760	.620	.540	.48	0.740	.610	.530	.47	0.720	.600	.520	.47	0.580	.520	.46	0.570	.510	.46	0.550	.500	.45					0.43
7	0.690	.550	.460	.41	0.670	.540	.460	.40	0.660	.530	.460	.40	0.520	.450	.40	0.500	.440	.39	0.490	.430	.39					0.37
8	0.640	.500	.410	.36	0.620	.490	.410	.35	0.610	.480	.400	.35	0.470	.400	.35	0.460	.390	.34	0.440	.390	.34					0.32
9	0.590	.450	.370	.31	0.570	.450	.360	.31	0.560	.440	.360	.31	0.420	.350	.30	0.410	.350	.30	0.400	.340	.30					0.28
10	0.540	.410	.320	.27	0.530	.400	.320	.27	0.520	.400	.320	.27	0.390	.320	.27	0.380	.310	.27	0.370	.310	.26					0.25

THE ABOVE COEFFICIENTS HAVE BEEN CALCULATED BASED ON LUMINAIRE LUMENS
 BECAUSE IN AN ABSOLUTE TEST THE BARE LAMP LUMENS ARE UNKNOWN.
 LIGHTING DESIGN CALCULATIONS MADE USING THESE COEFFICIENTS SHOULD
 THEREFORE USE THE LUMINAIRE LUMENS IN THE CALCULATION FORMULA

LABORATORY RESULTS MAY NOT BE REPRESENTATIVE OF FIELD PERFORMANCE.
 BALLAST AND FIELD FACTORS HAVE NOT BEEN APPLIED.

TEST DISTANCE EXCEEDS FIVE TIMES THE GREATEST
 LUMINOUS OPENING OF LUMINAIRE.



Total Quality. Assured.

Test No.02 Colorimetric Measurements - Integrating Sphere Method

TEST METHOD:

A Labsphere Three Meter Integrating Sphere was used to measure correlated color temperature, chromaticity coordinates and the color rendering index for each sample. 4π geometry was used.

Orientation (burning position) of product during testing was its normal burning position as specified by manufacturer.

Ambient temperature was measured at a position inside the sphere and was maintained at 25 ± 1 °C during testing.

Sample was allowed to stabilize for at least thirty minutes before measurements were made. The Stabilization time for the sample was **32** minutes. The condition of the sample tested was new.

Electrical measurements including voltage, current, and power were measure using the Power Meter.

The calibration of the sphere spectroradiometer system is traceable to the National Institute of Standards and Technology.

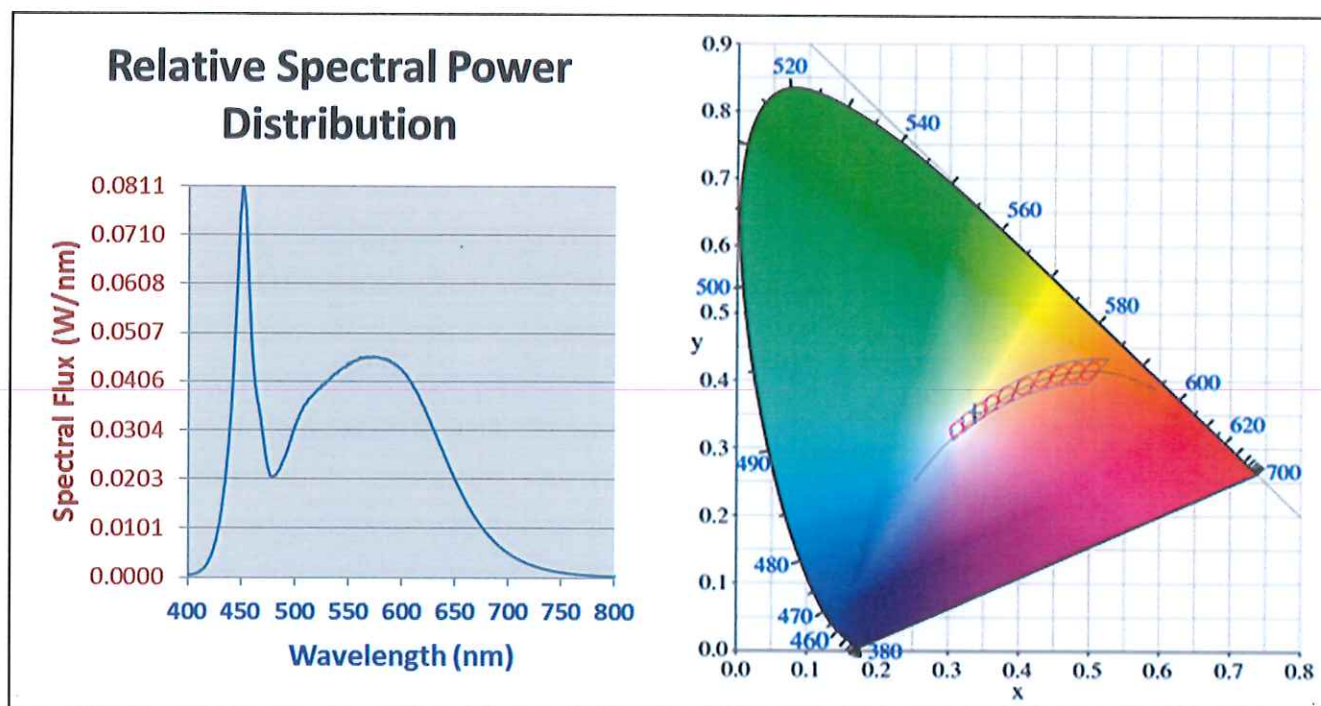
TEST RESULTS

Spectral Distribution

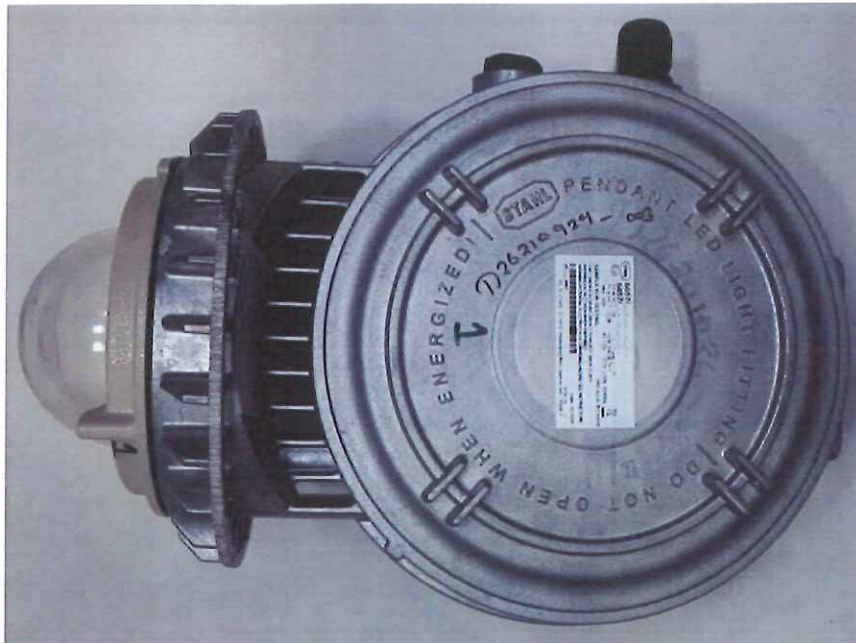
Dominant Wavelength nm	Radiant Flux	Purity	Peak Wavelength nm
560	9.234	6.758	452

CCT		CRI		x		y		Duv		u'		v'	
5352.0		83.0		0.3362		0.3528		0.0043		0.2049		0.4840	
R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14
80.8	88.2	93.1	82.3	81.6	83.4	87.4	67.3	5.75	72.0	81.3	61.7	82.7	96.5

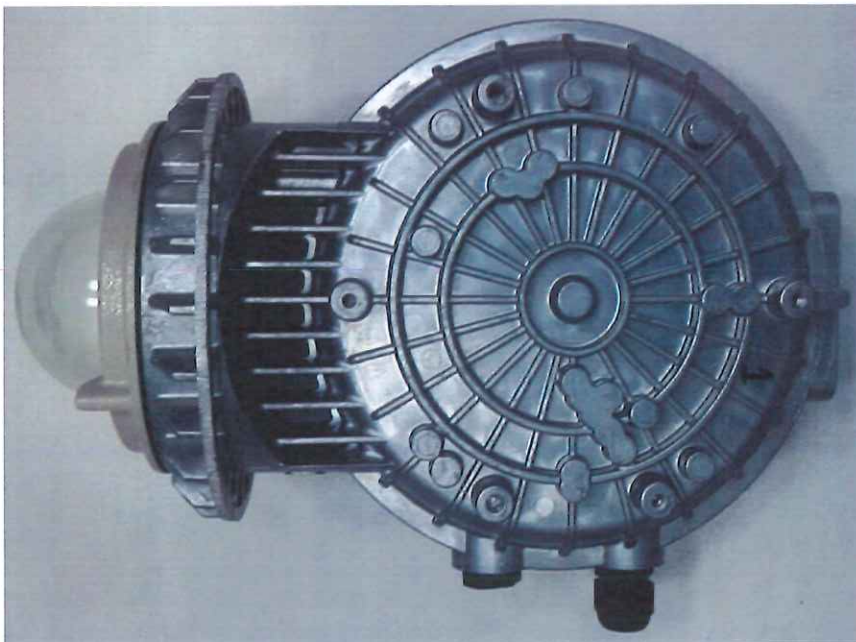
Spectral Data over Visible Wavelengths



SAMPLE PHOTOGRAPHS:



Front View



Rear View



Side View

*****End of report*****