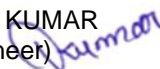



**TEST REPORT**  
**IES LM-79-08**  
**Approved Method: Electrical and Photometric Measurements of Solid-State Lighting Products.**

<b>Intertek Report No.....:</b>	<b>ULR-TC622821000001285F</b>
Date of Report issue.....:	12-Nov-2021
Total number of pages.....:	11
<b>Testing Laboratory.....:</b>	<b>Intertek India Private Limited</b>
Address.....:	E-26, Block B1, Mohan Co-Operative Industrial Area, Mathura Road, New Delhi -110044, India
<b>Customer / Applicant's name.....:</b>	<b>R. STAHL Private Limited</b>
Address.....:	Plot No. 5, Malrosapuram Main Road   Sengundram Ind. Area   Singaperumal Koil Chengalpattu Dist   Tamilnadu   PIN 603 204   India
Discipline.....:	Photometry
Product Group.....:	Light Sources (Electric Lamp)
<b>Test specification:</b>	
Standard.....:	IES LM-79-08
Non-standard test method.....:	N/A
<b>Test Report Form No.....:</b>	LFT-APAC-IN-OP-10p Version: 17 <sup>th</sup> Jun 2020
<b>Test item description.....:</b>	<b>LED pendant light 80W,5700K, With reflector</b>
Trade Mark.....:	<b>STAHL</b>
Manufacturer.....:	R. STAHL Private Limited
Model/Type reference.....:	6057,6457- 80W
Ratings.....:	230V AC, 50Hz, 80W, 0.344A
Tested by (Name + Signature + Function).....:	VIJAY KUMAR (Engineer) 
Reviewed by (Name + Signature + Function).....:	HARI OM  (Technical Leader - Lighting)



**An independent organization testing for safety, performance, and certification.**

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Tel: +91-11-4159 5460, Facsimile: + 91-11- 4159 5475 © 2021 Intertek

**General product information:**

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

**LED Binning details:** L2C5-57801211F1900

**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.....: 09-Nov-2021  
Condition of Sample Received.....: Physically Good  
Sample Identification no(s).....: D26211109-004  
Sample Serial no(s).....: Not provided  
Date (s) of performance of tests.....: 09-Nov-2021 to 10-Nov-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.

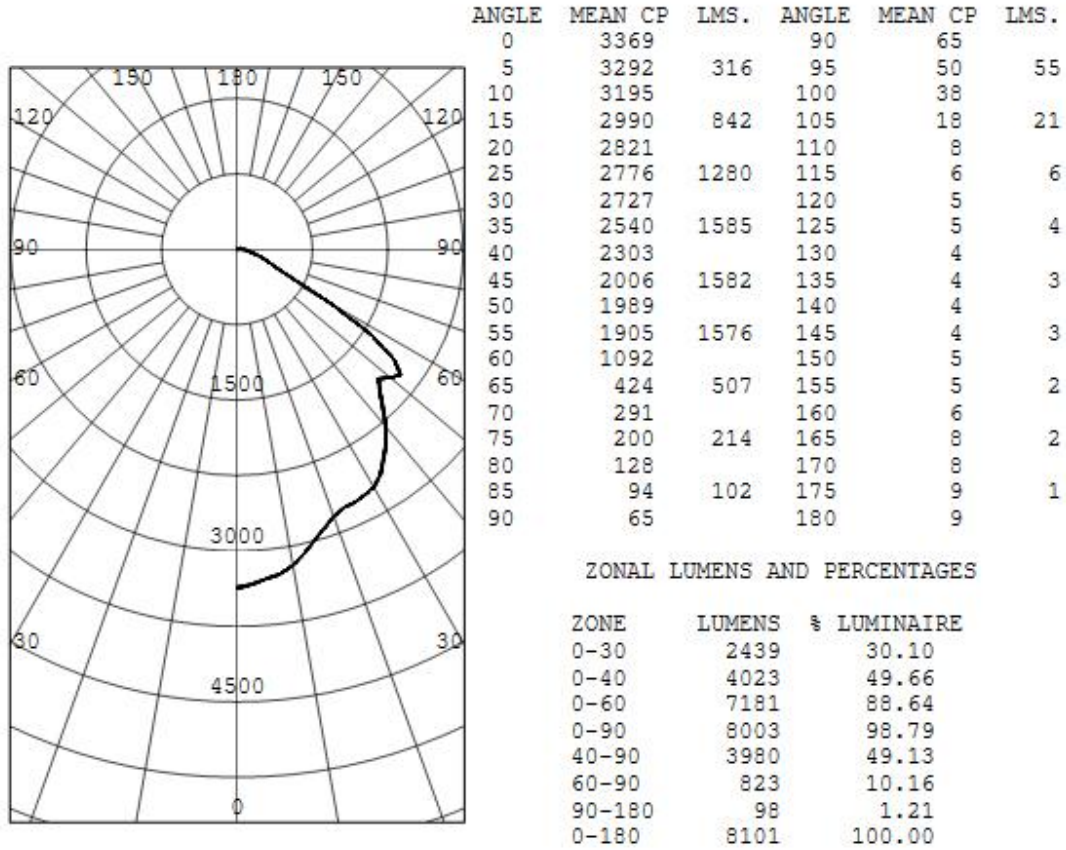
Each sample was allowed to stabilize for at least thirty minutes before measurements were made. The condition of the sample tested was new. Stabilization time before testing was **90** minutes.

### TEST RESULTS

Input Voltage (Vac)	Input Frequency (Hz)	Current (A)	Power (W)	Power Factor
230.17	50.0	0.345	77.45	0.976

Total Luminous Flux (lm)	Luminous Efficacy (lm/W)
8101.0	104.5

**INTENSITY(CANDLEPOWER) SUMMARY:**



\*\*\* THIS IS AN ABSOLUTE TEST \*\*\*

LUMINANCE SUMMARY CD./SQ.M.

ANGLE	MEAN CD/SQ M		
45	322330		
55	377395		
65	114051		
75	88011	S/MH:	1.2
85	122061	SC:	1.2

TESTED IN ACCORDANCE WITH IES PROCEDURES.

**INTENSITY (CANDLEPOWER) DATA:**

ANGLE	INTENSITY (CANDLEPOWER)	LUMENS
0	3369	
5	3292	316
10	3195	
15	2990	842
20	2821	
25	2776	1280
30	2727	
35	2540	1585
40	2303	
45	2006	1582
50	1989	
55	1905	1576
60	1092	
65	424	507
70	291	
75	200	214
80	128	
85	94	102
90	65	
95	50	55
100	38	
105	18	21
110	8	
115	6	6
120	5	
125	5	4
130	4	
135	4	3
140	4	
145	4	3
150	5	
155	5	2
160	6	
165	8	2
170	8	
175	9	1
180	9	

**AVERAGE LUMINANCE DATA:**

CD./SQ.M (FOOTLAMBERTS)		
ANGLE	LUMINANCE	
0	381378	( 111310)
30	356517	( 104054)
40	340334	( 99331)
45	322330	( 94077)
50	350307	( 102242)
55	377395	( 110148)
60	247156	( 72136)
65	114051	( 33287)
70	96203	( 28078)
75	88011	( 25687)
80	83429	( 24350)
85	122061	( 35625)

**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	0	0	0							
RCR																																			
0	1.221	.221	.221	.22	1.191	.191	.191	.19	1.161	.161	.161	.16	1.101	.101	.101	.10	1.051	.051	.05	1.011	.011	.01	0.99												
1	1.131	.091	.051	.02	1.101	.071	.031	.00	1.081	.041	.010	.98	1.000	.970	.95	0.960	.940	.92	0.920	.900	.89	0.87													
2	1.050	.980	.920	.87	1.020	.960	.900	.86	1.000	.940	.890	.84	0.900	.860	.82	0.870	.840	.80	0.840	.810	.78	0.76													
3	0.970	.870	.800	.74	0.950	.860	.790	.74	0.920	.840	.780	.73	0.810	.760	.72	0.790	.740	.70	0.760	.720	.69	0.67													
4	0.900	.790	.710	.65	0.880	.780	.700	.64	0.860	.760	.690	.64	0.740	.680	.63	0.710	.660	.62	0.690	.650	.61	0.59													
5	0.830	.710	.630	.56	0.810	.700	.620	.56	0.790	.690	.610	.56	0.660	.600	.55	0.640	.590	.54	0.630	.580	.54	0.52													
6	0.770	.640	.550	.49	0.750	.630	.550	.49	0.730	.620	.540	.48	0.600	.530	.48	0.580	.520	.47	0.560	.510	.47	0.45													
7	0.700	.570	.480	.43	0.680	.560	.480	.42	0.670	.550	.470	.42	0.530	.460	.41	0.520	.460	.41	0.510	.450	.41	0.39													
8	0.650	.510	.430	.37	0.640	.510	.430	.37	0.620	.500	.420	.37	0.480	.420	.37	0.470	.410	.36	0.460	.400	.36	0.34													
9	0.600	.470	.380	.33	0.590	.460	.380	.33	0.570	.450	.380	.33	0.440	.370	.32	0.430	.360	.32	0.420	.360	.32	0.30													
10	0.560	.420	.340	.29	0.540	.420	.340	.29	0.530	.410	.340	.29	0.400	.330	.29	0.390	.330	.28	0.380	.320	.28	0.26													

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.



## 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. 4 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 **96** 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.

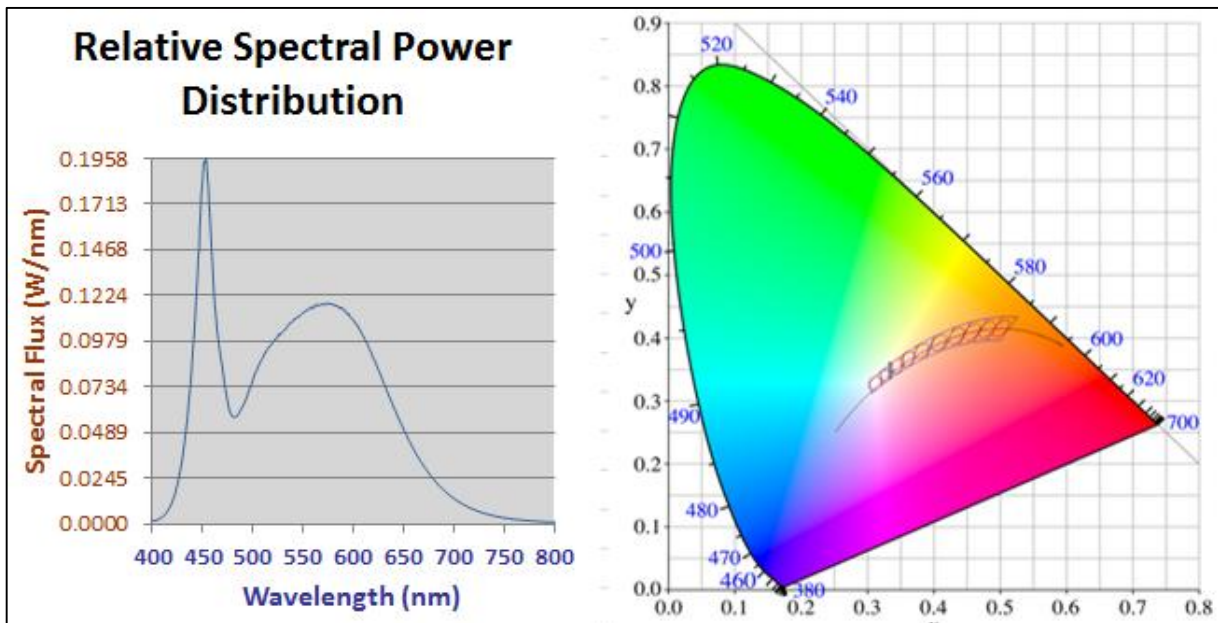
**TEST RESULTS**

**Spectral Distribution**

Dominant Wavelength nm	Radiant Flux	Purity	Peak Wavelength nm
555	23.804	4.748	453

CCT (K)		CRI		x		y		Duv		u'		v'	
5456.0		82.8		0.3336		0.3488		0.0034		0.2047		0.4816	
R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14
80.6	88.5	93.1	81.6	81.4	83.4	87	66.9	4.54	72.1	80.2	62.2	82.7	96.4

**Spectral Data over Visible Wavelengths**



**SAMPLE PHOTOGRAPHS:**



**Sample View**



**LED View**

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