U	L	R	-	T	C	7	6	3	4	2	0	0	0	0	0	0	0	0	1	F

Discipline :- Photometry Testing
Name of Group :- Luminaries

Test Report No.: HTPL/19117-01/01

Certificate Number-TC-7634

Test Report

Electrical and Photometric Measurements (IES LM-79-08 / IS 16106:2012)

Model: LED SL INVER HLSLD-ML04-60-CWL-INV-RTC-R, Make : HALONIX
Test Report Number: HTPL/19117-01/01, Release Date: 02/01/2020

- The results of testing in this report apply only to the sample product/item, which was tested. Other similar equipment/ Product/ Model will not necessarily produce the same results due to production tolerance, measurement uncertainties or any subsequent changes in the same model by the manufacturer.
- This test report is not to be reproduced except in full, without written approval of the laboratory.
- Parameters Marked with * in a report having NABL Symbol means Parameters are not covered in the scope of Accreditation.
- Test Report Issued without NABL Symbol means parameters in report are not covered in the scope of accreditation.
- Verdict wherever marked with P defines "Pass", F defines "Fail", NA Defines "Not Applicable".

U	L	R	-	T	C	7	6	3	4	2	0	0	0	0	0	0	0	0	0	1	F

TEST REPORT AS PER: IES LM-79-08 / IS 16106:2012 Test Report No.: HTPL/19117-01/01

Name & Address of Customer:	Test Report No.: HTPL/19117-01/01 Date of Issue: 02/01/2020		
Halonix Technologies Pvt. Ltd. B-31 Phase-2 ,Gautam Buddha Nagar , Noida(U.P.)-201305	Customer Ref. & Date:		
	Date of Sample Receipt: 02/01/2020	Start of Test Date; 02/01/2020	End of Test Date: 02/01/2020
Testing laboratory and its address:	HTPL Laboratory , Plot No.-5, Sector -12, IIE, SIDCUL, Haridwar, Uttarakhand-249403		

PART A – PARTICULARS OF THE SAMPLE SUBMITTED

Sample description:	Luminaires for Road and Street Lights
Grade/variety/type/class/size etc.	240Vac, 50Hz,60W,5700K, P.F>0.95,IP 66, -10°C to + 50°C
	Rated Voltage: 240Vac, Test Voltage: 240Vac, Rated Wattage: 60W, Rated Frequency: 50Hz, Rated Color Temperature: 5700K,Operating Temperature : -10°C to +50°C
Brand Name and Model	HALONIX LED SL INVER HLSLD-ML04-60-CWL-INV-RTC-R
Quantity	1 No.
Condition of the sample	OK
Reference specification (s)	IES LM-79-08 / IS 16106:2012 (Tests have been carried out as per customer's request)
Environmental conditions:	Temperature: (25±1)°C & Relative Humidity <65%

Tested by:	Issued by:	Approved by:
Test Engineer(Sanjay Pant)	Technical Manager (Pradeep Rawat)	Quality Manager (Chandra Kishore)
Dated : 02/01/2020	Dated : 02/01/2020	Dated : 02/01/2020

U	L	R	-	T	C	7	6	3	4	2	0	0	0	0	0	0	0	1	0	1	F

PART B – TEST RESULT

Test Report No.: HTPL/19117-01/01

Test Equipment:

S.No.	Equipment ID	Equipment Name	Make	Traceability	Calibration Valid Upto
1	HTPL/67-1	Digital Power meter PF2010	EVERFINE	ERTL(N)/90(4)-2018-19/A0721	11/01/2020
2	HTPL/68-1	AC Power Source	EVERFINE	C&IJ/CAL/18-07/028	11/01/2020
3	HTPL/71-1	Total Spectral Radiant Flux Standard Lamp	EVERFINE	NPL	22/07/2020

Test Results:

S. No	TESTS WITH CLAUSE REFERENCE		SPECIFIED REQUIREMENT	RESULTS
1.	Photometric Results (IES LM-79-08)	i)	Total Luminous Flux	6655.4lm
		ii)	Luminous Efficacy	116.93 lm/W
		iii)	Luminous intensity	3600cd
		iv)	Luminous intensity distribution	Graph Attached
		v)	Chromaticity Co-ordinates	x= 0.3319 y= 0.3479
		vi)	Correlated Colour Temperature	5525 K
		vii)	Color Rendering Index	70.0
2.	Electrical Results (IES-LM-79-08)	i)	Input Power	56.92W
		ii)	Input Voltage	240.02Vac
		iii)	Input Current (Amps)	0.2409 A
		iv)	Power Factor	0.9842
		v)	Input Frequency (Hertz)	50Hz
3.	Additional Parameters	i)	Stabilization time	60 Minutes
		ii)	Photometric Method Used	IES LM-79-08 Using C type- Gonio photometer

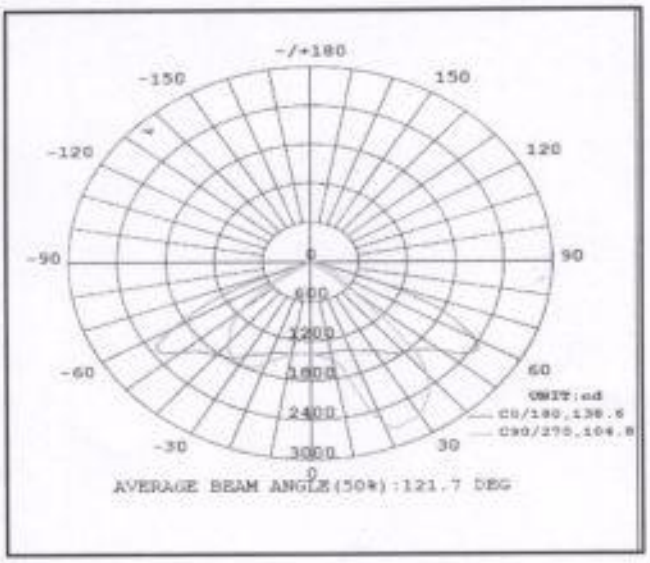
Tested by:	Issued by:	Approved by:
Spant		
Test Engineer(Sanjay Pant)	Technical Manager (Pradeep Rawat)	Quality Manager (Chandra Kishore)
Dated : 02/01/2020	Dated : 02/01/2020	Dated : 02/01/2020

U	L	R	-	T	C	7	6	3	4	2	0	0	0	0	0	0	0	0	0	1	F

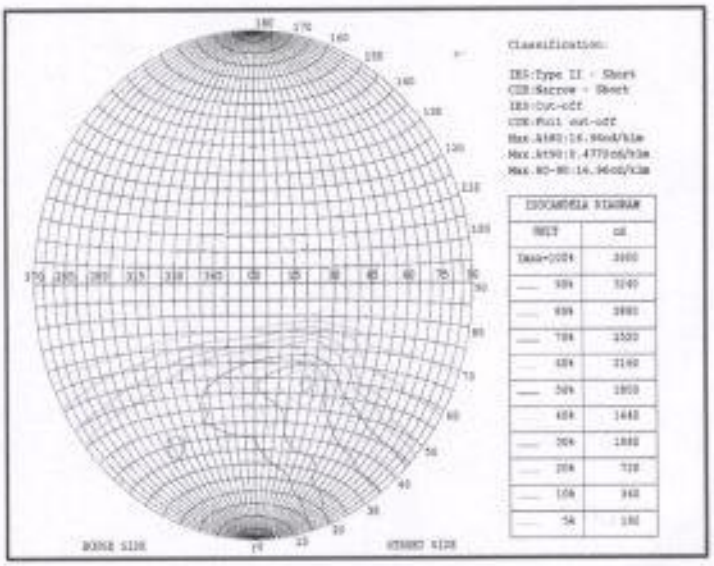
PART B – TEST RESULT

Test Report No.: HTPL/19117-01/01

Intensity Distribution Graph



Street light Isocandela Diagram



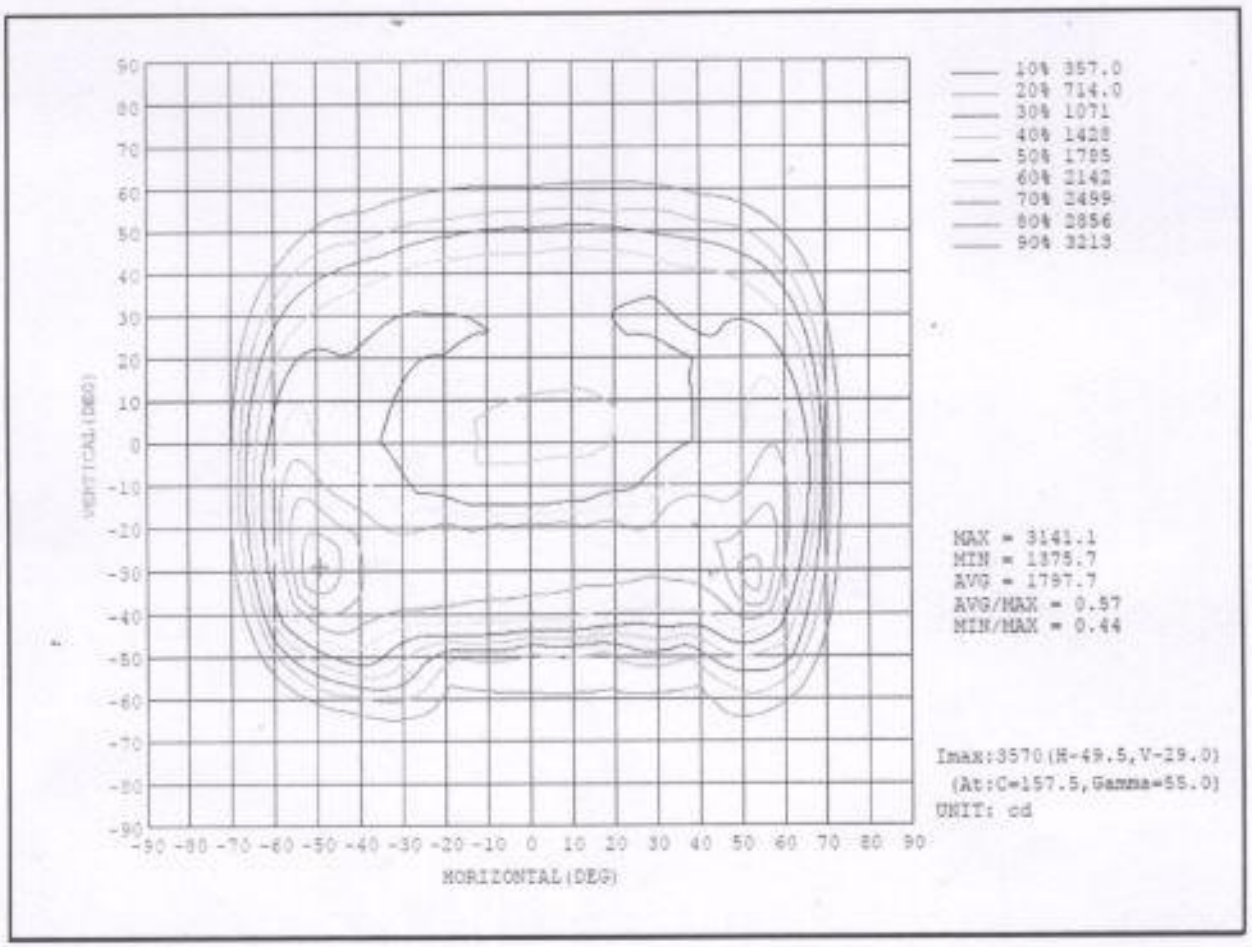
Tested by:	Issued by:	Approved by:
Test Engineer(Sanjay Pant)	Technical Manager (Pradeep Rawat)	Quality Manager (Chandra Kishore)
Dated : 02/01/2020	Dated : 02/01/2020	Dated : 02/01/2020

U	L	R	-	T	C	7	6	3	4	2	0	0	0	0	0	0	0	0	0	1	F

PART B – TEST RESULT

Test Report No.: HTPL/19117-01/01

ISOCANDELA DIAGRAM



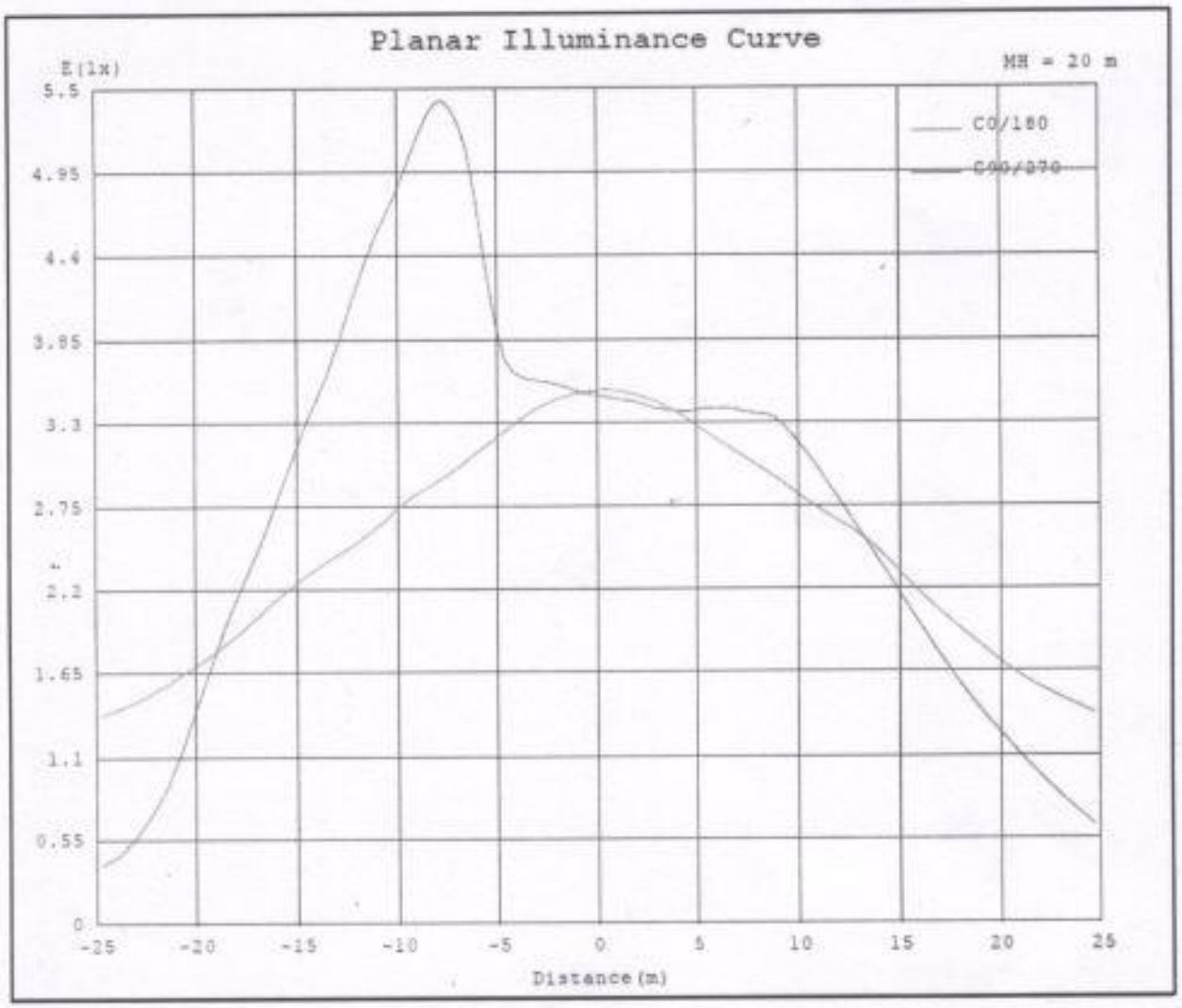
Tested by:	Issued by:	Approved by:
Test Engineer(Sanjay Pant)	Technical Manager (Pradeep Rawat)	Quality Manager (Chandra Kishore)
Dated : 02/01/2020	Dated : 02/01/2020	Dated : 02/01/2020

U	L	R	-	T	C	7	6	3	4	2	0	0	0	0	0	0	0	0	1	F

PART B – TEST RESULT

Test Report No.: HTPL/19117-01/01

Planer Illuminance Curve



Tested by:	Issued by:	Approved by:
Test Engineer(Sanjay Pant)	Technical Manager (Pradeep Rawat)	Quality Manager (Chandra Kishore)
Dated : 02/01/2020	Dated : 02/01/2020	Dated : 02/01/2020

U	L	R	-	T	C	7	6	3	4	2	0	0	0	0	0	0	0	0	1	F

PART B – TEST RESULT

Test Report No.: HTPL/19117-01/01

Luminous Distribution Intensity Data

Table--1 UNIT: cd

T (DEG) \ C (DEG)	0	22.5	45	67.5	90	112.5	135	157.5	180	202.5	225	247.5	270	292.5	315	337.5
0	1394	1394	1394	1394	1394	1394	1394	1394	1394	1394	1394	1394	1394	1394	1394	1394
5	1392	1403	1419	1431	1436	1430	1418	1405	1401	1397	1396	1395	1394	1390	1387	1388
10	1393	1422	1465	1496	1506	1494	1462	1424	1412	1409	1412	1420	1418	1403	1389	1386
15	1395	1442	1526	1730	1845	1606	1524	1449	1426	1424	1457	1502	1507	1468	1411	1390
20	1422	1485	1885	2469	2592	2435	1759	1501	1469	1469	1549	1624	1628	1578	1468	1422
25	1496	1653	2477	2696	2723	2768	2346	1618	1541	1544	1686	1764	1760	1725	1566	1478
30	1562	1983	2677	2664	2695	2734	2779	1853	1639	1669	1802	1782	1774	1791	1715	1542
35	1687	2454	2623	2514	2519	2668	2855	2174	1768	1846	1812	1751	1733	1772	1809	1672
40	1798	2785	2537	2302	2228	2485	2868	2489	1828	1866	1779	1650	1600	1708	1823	1789
45	1898	2838	2373	1855	1588	2113	2753	2844	1919	1787	1661	1462	1415	1550	1769	1815
50	2109	2878	2092	920	680	1219	2497	3251	2123	1717	1388	1194	1120	1314	1554	1813
55	2412	3185	1425	496	454	535	2168	3600	2332	1553	979	725	694	902	1249	1800
60	2347	3306	701	355	327	330	1901	3218	1951	1200	519	458	405	530	889	1549
65	1845	2494	370	249	230	219	1189	2184	1286	638	276	214	208	294	445	1113
70	837	1459	214	181	166	155	420	1022	335	204	142	124	137	149	189	460
75	180	564	133	118	119	103	120	141	81.7	76.4	68.6	66.2	84.7	81.0	95.2	167
80	87.6	113	70.4	61.1	52.3	53.0	51.3	50.7	34.5	32.2	27.7	24.9	28.7	35.2	46.1	67.6
85	24.8	34.3	22.1	10.6	6.73	7.89	11.8	9.75	7.56	5.65	3.04	2.25	2.39	5.21	13.4	22.3
90	0.36	3.18	0.01	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.03	0.06	0.26
95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100	0.03	0.01	0.00	0.00	0.00	0.00	0.01	0.03	0.01	0.02	0.00	0.00	0.00	0.00	0.01	0.03
105	0.06	0.02	0.00	0.00	0.01	0.02	0.02	0.05	0.03	0.04	0.00	0.00	0.00	0.00	0.01	0.04
110	0.09	0.04	0.01	0.02	0.02	0.03	0.04	0.08	0.05	0.07	0.01	0.00	0.00	0.01	0.03	0.08
115	0.13	0.06	0.04	0.04	0.04	0.06	0.07	0.11	0.09	0.12	0.03	0.01	0.00	0.01	0.06	0.12
120	0.16	0.10	0.07	0.05	0.04	0.08	0.11	0.14	0.13	0.16	0.06	0.02	0.01	0.03	0.10	0.17
125	0.19	0.14	0.10	0.07	0.08	0.09	0.13	0.17	0.16	0.18	0.08	0.03	0.03	0.06	0.11	0.21
130	0.20	0.16	0.13	0.09	0.11	0.11	0.15	0.18	0.15	0.16	0.13	0.05	0.05	0.09	0.14	0.20
135	0.20	0.17	0.16	0.10	0.11	0.12	0.17	0.18	0.15	0.19	0.15	0.08	0.09	0.12	0.19	0.21
140	0.20	0.18	0.16	0.11	0.13	0.13	0.16	0.18	0.16	0.19	0.16	0.10	0.13	0.12	0.21	0.22
145	0.18	0.17	0.16	0.12	0.14	0.12	0.16	0.16	0.16	0.16	0.16	0.14	0.16	0.14	0.20	0.19
150	0.15	0.15	0.13	0.12	0.12	0.11	0.14	0.14	0.13	0.13	0.15	0.15	0.18	0.16	0.16	0.16
155	0.13	0.12	0.10	0.11	0.11	0.11	0.11	0.12	0.11	0.10	0.12	0.15	0.18	0.18	0.13	0.13
160	0.09	0.09	0.09	0.10	0.10	0.10	0.09	0.09	0.09	0.08	0.09	0.13	0.17	0.16	0.12	0.11
165	0.08	0.08	0.08	0.09	0.09	0.09	0.08	0.07	0.07	0.08	0.09	0.12	0.13	0.13	0.12	0.11
170	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.09	0.10	0.10	0.10	0.10	0.09
175	0.07	0.07	0.06	0.05	0.05	0.07	0.08	0.08	0.05	0.05	0.06	0.06	0.06	0.06	0.06	0.06
180	0.01	0.00	0.00	0.01	0.01	0.02	0.02	0.02	0.02	0.02	0.01	0.00	0.01	0.02	0.02	0.03

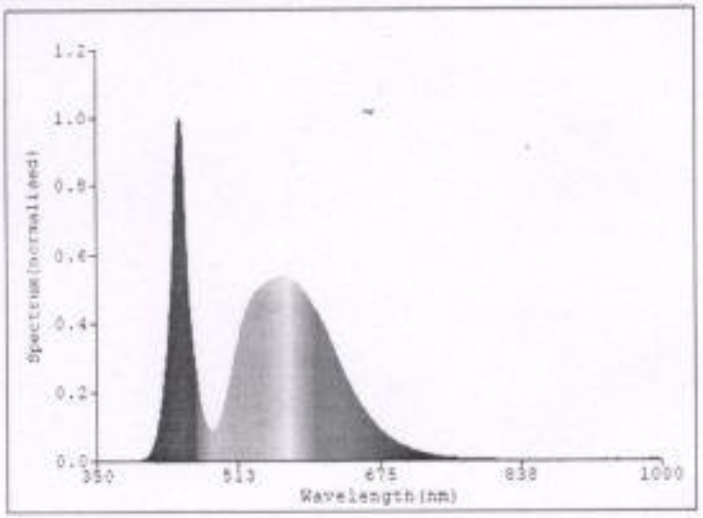
Tested by:	Issued by:	Approved by:
Test Engineer(Sanjay Pant)	Technical Manager (Pradeep Rawat)	Quality Manager (Chandra Kishore)
Dated : 02/01/2020	Dated : 02/01/2020	Dated : 02/01/2020

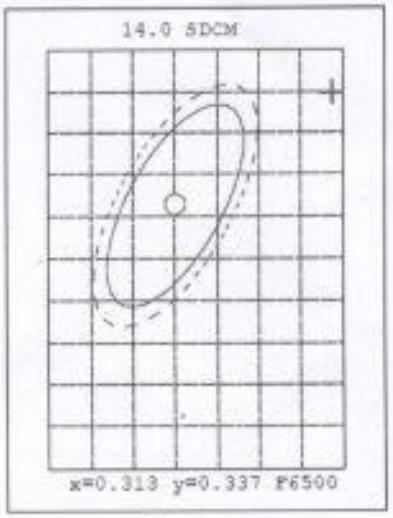
U	L	R	-	T	C	7	6	3	4	2	0	0	0	0	0	0	0	0	0	1	F

PART B – TEST RESULT

Test Report No.: HTPL/19117-01/01

Spectral Parameter





Color Parameters:

Chromaticity Coordinates:x=0.3319 y=0.3479/u'=0.2039 v'=0.4809 duv=0.00372

Tc=5525K Dominant WL:Ld=549.4nm Purity=4.0%

Ratio:R=13.1% G=83.8% B=3.1% Peak WL:Lp=445.3nm HWL:19.3nm

Rendering Index:Ra=70.0 TLCI = 49

R1 =68 R2 =73 R3 =78 R4 =72 R5 =70 R6 =65 R7 =78

R8 =56 R9 =-37 R10=37 R11=70 R12=42 R13=68 R14=87 R15=62

Tested by:	Issued by:	Approved by:
Test Engineer(Sanjay Pant)	Technical Manager (Pradeep Rawat)	Quality Manager (Chandra Kishore)
Dated : 02/01/2020	Dated : 02/01/2020	Dated : 02/01/2020

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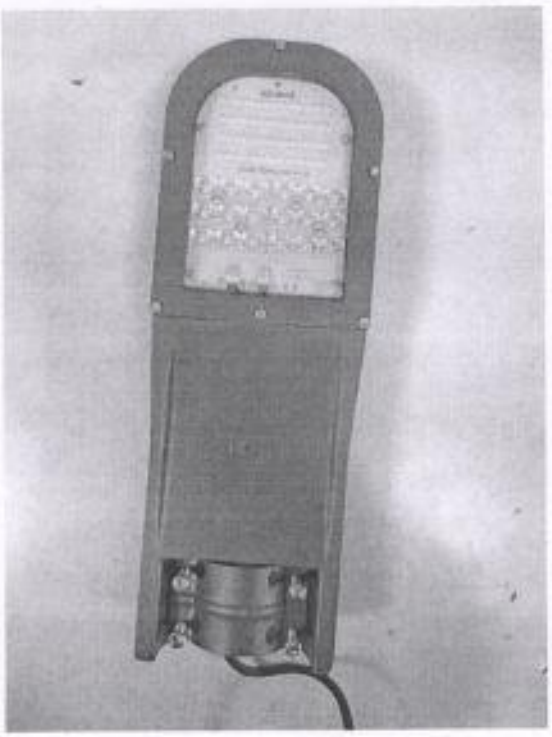
PART B – TEST RESULT

Test Report No.: HTPL/19117-01/01

Photo Graph :



PART C:

Remarks: 1. The observations given in part A of the cover page of the test report are taken from the marking on the sample given by customer.

Tested by:	Issued by:	Approved by:
Spant		
Test Engineer(Sanjay Pant)	Technical Manager (Pradeep Rawat)	Quality Manager (Chandra Kishore)
Dated : 02/01/2020	Dated : 02/01/2020	Dated : 02/01/2020