

LM-79-08 Test Report

For

PROFOLUX B.V.

(Brand Name: PROFOLUX)

Ekkersrijt 1005, 5692 AB Son, The Netherlands

High Bay Luminaires (Commercial and Industrial)

Model name(s):

100W Series, 150W Series

200W Series, 240W Series

Representative (Tested) Model:

150W 5000K

The tested lamps' color temperature include 3000K, 4000K, 5000K and 6000K

Test & Report By:

Garman Mo

Engineer: Garman Mo

Date: Mar.08,2022

Review By:

Johnson Sun

Manager: Johnson Sun

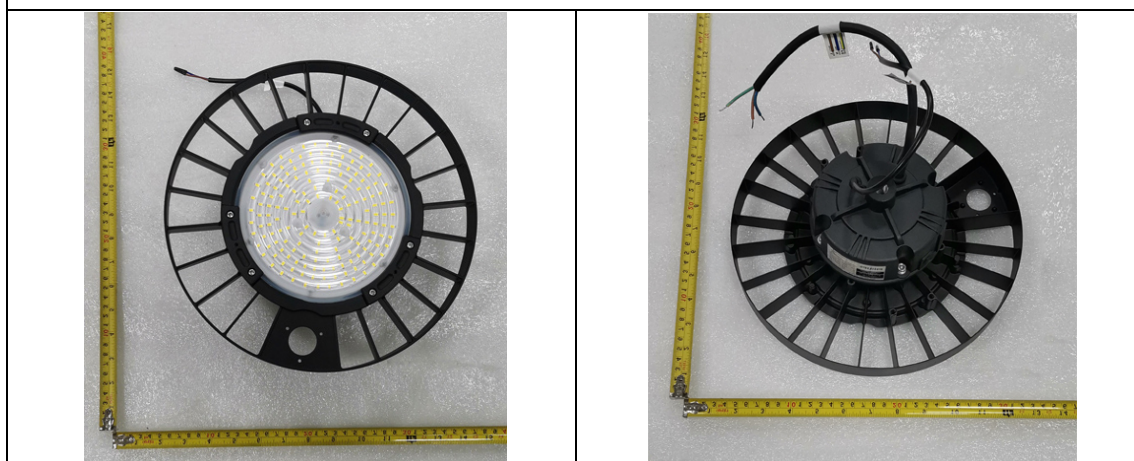
Note: 1.The results contained in this report pertain only to the tested samples.

2.This report does not imply product certification, approval, or endorsement by A2LA, or any agency of the Federal Government.

1.1 Product Information:

Organization Name	PROFOLUX B.V.	
Brand Name	PROFOLUX	
Model Number	150W 5000K	
SKU (if available)	N/A	
Type of Luminaire (for integral lamps, list base type and lamp type)	High Bay Luminaires (Commercial and Industrial)	
Rated Voltage / Frequency	220-240Vac, 50/60Hz	
Nominal Power	150W	
Rated Initial Lamp Lumen	--	
Declared CCT	5000K	
LED Manufacturer	Samsung Electronics Co., LTD	
LED Model	SPMWHx229xxxxxxxxx	
Integral Controls Availability	--	
Dimming	--	
Sample Number	JBE220216-B(5000K)	
Luminaire Aperture (for downlights)	--	in.
Luminaire Length	--	mm
Luminaires Width	--	mm
Number of Units (modular products)	N/A	s

Photo



1.2 Test Specifications:

Date of Receipt	Feb.15,2022
Date of Test	Feb.16,2022
Test item	<ol style="list-style-type: none"> 1. Total Luminous Flux 2. Luminous Distribution Intensity 3. Luminous Efficacy 4. Correlated Color Temperature 5. Color Rendering Index 6. Chromaticity Coordinate 7. Electrical Parameters
Reference Standard	<ol style="list-style-type: none"> 1. IES LM-79-2008 Electrical and Photometric Measurements of Solid-State Lighting Products 2. ANSI C78.377-2017 Specifications for the Chromaticity of Solid State Lighting Products 3. CIE 13.3-1995 Method of Measuring and Specifying Colour Rendering Properties of Light Sources 4. CIE 15-2004 Technical Report Colorimetry 5. IESNA LM-16-93 Practical Guide to Colorimetry of Light Source 6. IESNA TM-16-05 Technical Memorandum on Light Emitting Diode (LED) Sources and Systems

1.3 Test Methods

1) Photometric and Light Distribution Measurement – Goniophotometer Method:

Photometric parameters were measured using the goniophotometer and software. The ambient temperature shall be maintained at $25^{\circ}\text{C} \pm 1^{\circ}\text{C}$, measured at a point not more than 1 m from the sample and at the same height as the sample. The sample was operated at 120 or rated Volts AC, 60Hz. It was stabilized before measurement was made. Luminous flux, luminaire efficacy, zonal lumen were calculated from the software taken at 1° vertical intervals and 22.5° horizontal intervals.

2) Chromaticity Measurement – Sphere-Spectroradiometer Method:

Chromaticity parameters were measured using an integrating sphere, a spectroradiometer and software. The ambient temperature condition inside the sphere was maintained at $25^{\circ}\text{C} \pm 1^{\circ}\text{C}$. The sample measurements were made using a spectroradiometer connected by a fiber optic cable and detector through the detector port of the integrating sphere. The sample was operated at 120 or rated Volts AC, 60Hz. It was stabilized before measurement was made. Chromaticity coordinates, correlated color temperature and color rendering index were calculated from the spectral power distribution taken at 5 nm intervals over the range of 380 to 780 nm.

3) Electrical Measurements:

Electrical parameters were measured using power meters incorporated in goniophotometer or sphere-spectroradiometer system. The ambient temperature surrounding the sample was maintained at $25^{\circ}\text{C} \pm 1^{\circ}\text{C}$. The sample was operated at 120 or rated Volts AC, 60Hz. It was stabilized before measurement was made. Voltage, frequency, current, power, power factor and total harmonic distortion were measured by and read from the power meter.

2.1 Electrical, Photometric and Chromaticity Measurements

Test date	2022-02162	Test Ambient:	25±1 ° C
Test Orientation	As intended	Stabilization Time (min)	60
Model Number	150W 5000K	Total Operating Time (min)	75

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
JBE220216-B	230.0	50	0.6475	147.1	0.9875	8.79
DLC Pass Criteria					>= 0.9(-3%)	<= 20(+5)

Photometric Measurement – Goniophotometer Method(Test Distance: 26.000m):

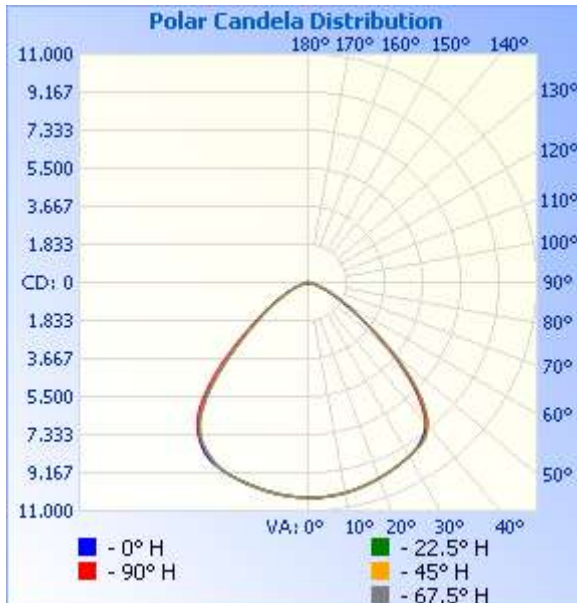
Parameter	Result	DLC V5.1 Pass Criteria	
Test Voltage (V)	230	--	
Frequency (Hz)	50		
Total Luminous (lm)	22292	>=10000 (-10%)	
Luminous Efficacy (lm/W)	151.54	Standard: >= 120(-3%)	Premium: >= 135(-3%)
Zonal lumens in the 20-50° zone (%)	65.2	>= 30(-10)	
Corrected UGR (Crosswise)	30.1	Premium: <28.0	
Corrected UGR (Endwise)	30.1	Premium: <28.0	
Beam Angle (°)	97.7	--	
Center Beam Candle Power (cd)	10353	--	

Zonal Lumen Tabulation

Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	8,413.9	35.4%
0-40	14,177.4	59.7%
0-60	22,089.8	93%
60-90	1,578.7	6.6%
70-100	395.5	1.7%
90-120	13.0	0.1%
0-90	23,668.5	99.6%
90-180	89.2	0.4%
0-180	23,757.7	100%

Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	983.5	4.1%	90-100	1.5	0%
10-20	2,872.6	12.1%	100-110	3.6	0%
20-30	4,557.8	19.2%	110-120	7.9	0%
30-40	5,763.5	24.3%	120-130	14.9	0.1%
40-50	5,161.5	21.7%	130-140	17.9	0.1%
50-60	2,750.9	11.6%	140-150	17.2	0.1%
60-70	1,184.7	5.0%	150-160	13.8	0.1%
70-80	356.2	1.5%	160-170	8.7	0%
80-90	37.7	0.2%	170-180	3.6	0%

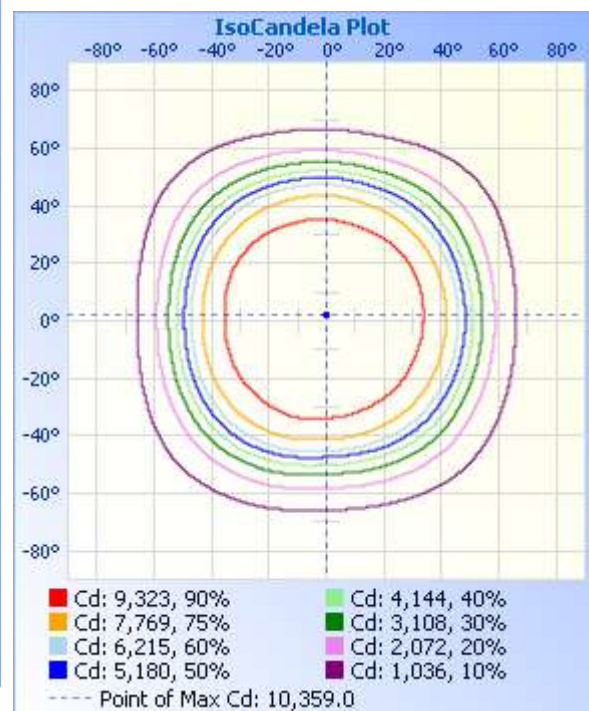
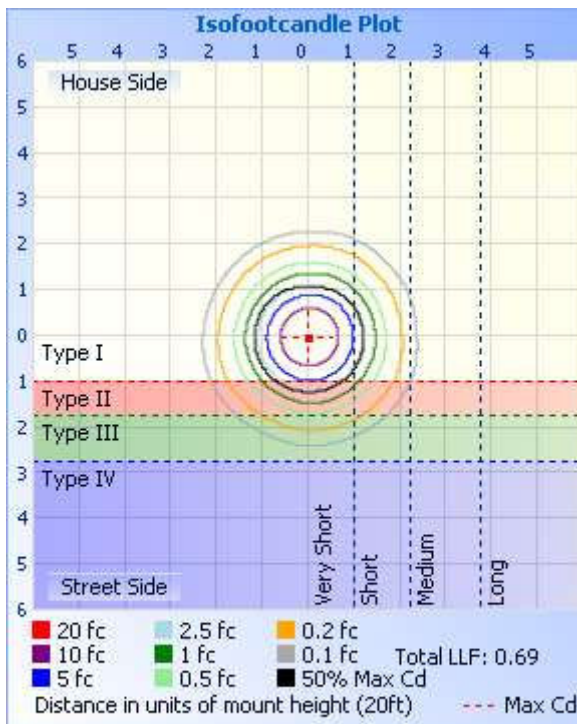
Photometric Data



Illuminance at a Distance

	Center Beam fc	Beam Width	
4.0ft	647.1 fc	9.1 ft	9.2 ft
8.0ft	161.8 fc	18.2 ft	18.4 ft
12.0ft	71.9 fc	27.3 ft	27.6 ft
16.0ft	40.4 fc	36.4 ft	36.8 ft
20.0ft	25.9 fc	45.5 ft	46.0 ft

■ Vert. Spread: 97.4°
■ Horiz. Spread: 98.0°



Laboratory: Standard-Tech Co., Ltd. Testing Center

Report Format Number STD-QP019-409-B/0

Address: Standard-Tech Building, No.6 Guanhong Road, Guangzhou Science City, Guangzhou 510663, China

Tel: 8620-3229 0320 Fax: 8620-32290422 <http://www.standard-tech.com>

Table--1 UNIT: ×10cd

C (DEG) D (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	1035	1035	1035	1035	1035	1035	1035	1035	1035	1035	1035	1035	1035	1035	1035	1035	
5	1033	1032	1032	1033	1034	1034	1034	1034	1035	1033	1033	1032	1032	1031	1032	1032	
10	1027	1026	1024	1024	1027	1027	1027	1029	1026	1026	1026	1025	1025	1024	1025	1025	
15	1016	1014	1012	1012	1015	1016	1015	1017	1015	1015	1015	1015	1015	1015	1017	1017	
20	1005	1002	999	999	1002	1001	1000	1001	1001	1001	1001	1003	1004	1005	1006	1005	
25	991	989	984	983	985	984	983	985	984	986	987	990	992	990	989	988	
30	962	969	968	965	967	966	966	966	968	968	969	974	969	960	955	954	
35	914	923	928	928	939	943	950	948	942	938	933	931	909	901	901	904	
40	822	831	841	853	887	888	892	892	875	877	860	843	798	787	787	795	
45	647	651	668	691	745	748	751	753	725	720	704	670	602	594	599	605	
50	439	439	457	480	538	544	541	544	514	508	489	456	400	394	395	404	
55	282	282	291	301	335	341	343	346	324	315	309	294	257	259	254	250	
60	178	183	186	186	201	211	217	218	198	191	191	189	170	167	163	160	
65	109	117	116	112	125	127	135	135	119	119	117	119	108	104	103	101	
70	60.7	66.5	65.6	64.4	76.1	73.9	77.8	79.1	66.2	68.2	66.0	66.3	58.3	54.7	55.2	54.9	
75	27.7	31.3	31.0	30.1	37.1	35.6	37.8	38.6	31.5	33.1	31.3	31.2	27.1	25.5	26.0	25.7	
80	10.8	10.9	11.2	11.9	15.9	14.8	14.9	14.8	12.6	13.3	12.6	11.7	8.47	8.87	9.78	9.61	
85	1.83	1.90	2.04	2.06	4.10	3.51	3.28	3.09	2.36	2.44	1.72	1.23	0.50	0.60	0.77	1.17	
90	0.11	0.11	0.11	0.12	0.13	0.13	0.12	0.23	0.11	0.39	0.10	0.11	0.16	0.12	0.19	0.11	
95	0.14	0.10	0.10	0.12	0.12	0.11	0.11	0.15	0.11	0.11	0.10	0.12	0.14	0.13	0.14	0.13	
100	0.22	0.19	0.19	0.21	0.19	0.18	0.16	0.18	0.18	0.19	0.17	0.19	0.21	0.22	0.24	0.22	
105	0.38	0.36	0.34	0.33	0.31	0.30	0.30	0.30	0.31	0.32	0.30	0.28	0.32	0.32	0.36	0.37	
110	0.65	0.63	0.60	0.52	0.50	0.48	0.49	0.50	0.49	0.49	0.45	0.46	0.52	0.52	0.51	0.59	
115	1.06	1.03	0.95	0.76	0.71	0.62	0.77	0.84	0.76	0.75	0.68	0.61	0.76	0.62	0.84	0.86	
120	1.56	1.48	1.42	1.24	0.96	0.89	1.18	1.26	1.07	1.04	0.95	1.03	1.18	1.17	1.16	1.19	
125	2.05	1.97	1.74	1.96	1.90	1.74	1.53	1.75	1.39	1.42	1.39	1.63	1.85	1.68	1.47	1.60	
130	2.49	2.29	1.80	2.43	2.40	2.20	1.86	2.14	1.87	1.83	1.62	2.10	2.20	2.09	1.85	1.87	
135	2.71	2.43	2.05	2.86	2.68	2.57	2.07	2.24	2.23	2.07	1.83	2.53	2.55	2.36	1.98	2.12	
140	2.88	2.61	2.25	2.98	2.86	2.89	2.18	2.48	2.47	2.36	1.93	2.79	2.80	2.80	2.12	2.41	
145	3.06	2.57	2.54	3.22	2.81	3.12	2.32	2.57	2.74	2.56	2.19	2.89	3.00	2.91	2.53	2.48	
150	3.03	2.65	3.10	3.33	3.43	3.27	2.82	2.80	2.85	2.68	2.61	2.91	3.12	3.10	3.06	2.73	
155	2.87	2.72	3.42	3.34	3.50	3.32	3.34	2.98	2.60	2.70	2.77	2.80	2.96	2.90	2.84	2.84	
160	2.76	2.79	3.30	3.32	3.41	3.31	3.34	2.99	2.74	2.65	2.79	2.80	2.92	2.82	2.74	2.88	
165	3.01	2.83	3.30	3.10	3.19	3.21	3.26	2.91	2.77	2.72	2.82	2.96	2.86	2.87	2.79	2.96	
170	3.31	3.13	3.70	3.67	3.50	3.69	3.72	3.02	3.30	3.28	3.25	3.81	4.06	4.18	3.90	3.98	
175	3.61	3.42	3.95	3.80	4.25	3.92	3.91	3.24	3.69	3.71	3.47	4.01	3.96	4.46	3.84	4.06	
180	3.54	3.39	3.76	3.72	4.35	3.80	3.96	3.39	3.51	3.54	3.37	3.75	3.71	4.31	3.80	3.94	

2.2 Electrical, Photometric and Chromaticity Measurements

Test date	2022-02-16	Test Ambient:	25±1 °C
Test Orientation	As intended	Stabilization Time (min)	60
Model Number	150W 5000K	Total Operating Time (min)	61

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
JBE220216-B	230.0	50	0.6533	148.1	0.9856	9.01
DLC Pass Criteria					>= 0.9(-3%)	<= 20(+5)

Chromaticity Measurement - Sphere-Spectroradiometer

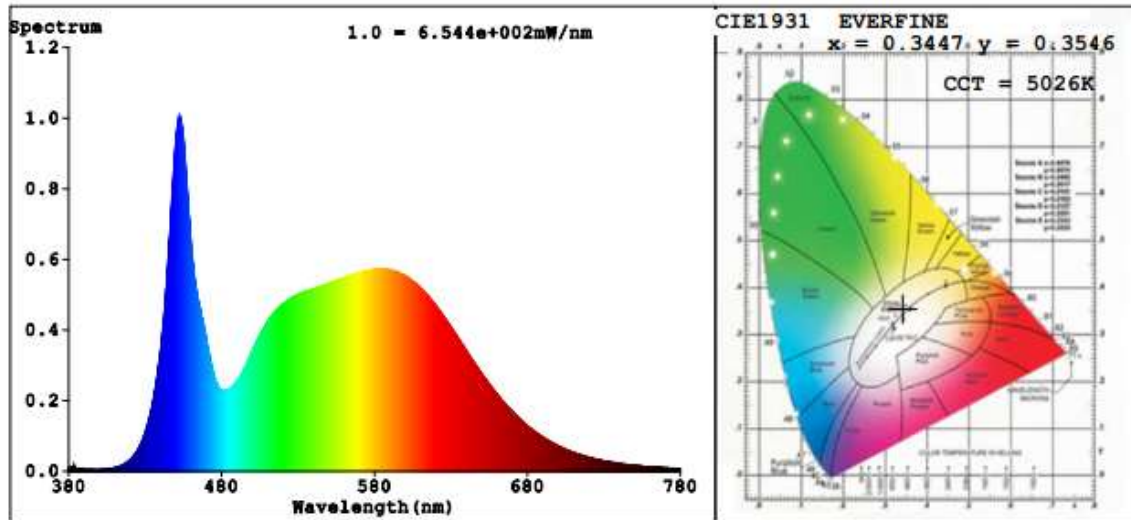
Method(Self-absorption:1.1785)(4π geometry):

Parameter	Result	Parameter	Result
Test Voltage (V)	230	Color Rendering Index (CRI)	84.0
Frequency (Hz)	50	R9	13
CCT (K)	5026	Rg	96
Duv	0.0017	Rf	84
Chromaticity (x, y)	x=0.3447 y=0.3546	Rcs,h1(%)	-12
Chromaticity (u', v')	u'=0.2100 v'=0.4861		

Photometric Measurement – Sphere-Spectroradiometer Method:

Parameter	Result	DLC V5.1 Pass Criteria	
Test Voltage (V)	230	--	
Frequency (Hz)	50		
Total Luminous (lm)	22556	>=10000 (-10%)	
Luminous Efficacy (lm/W)	152.43	Standard: >= 120(-3%)	Premium: >= 135(-3%)

Spectral Power Distribution & Chromaticity Diagram



Special Color Rendering Indices

R1 =83 R2 =89 R3 =93 R4 =84 R5 =83 R6 =85 R7 =87
R8 =69 R9 =13 R10=74 R11=83 R12=61 R13=84 R14=96 R15=78

TM30

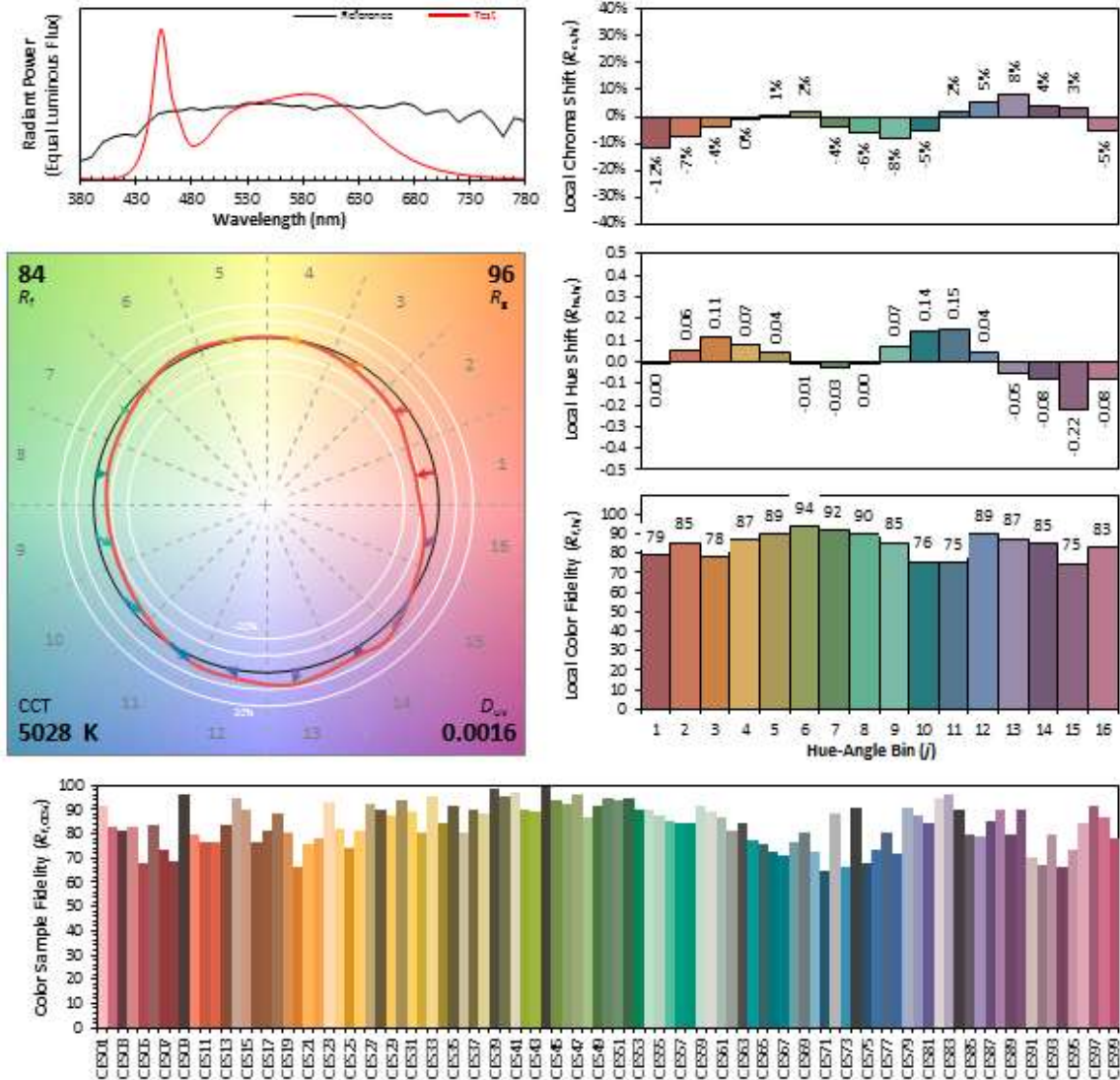
ANSI/IES TM-30-18 Color Rendition Report

Source: SPMWHx229xxxxxxxxx

Manufacturer: PROFOLUX B. V.

Date: 2022-02-16

Model: 150W 5000K



Notes: This is a recommended method for displaying ANSI/IES TM-30-18 information.

x **0.3446**
 y **0.3545**
 x' **0.2100**
 y' **0.4860**

CIE 13.3-1995	
(CRI)	
R_a	84
R_s	13

3. Test Equipment

Equipment ID	Equipment Name	Last Calibration Date	Next Calibration Date
ST-R-423	2 meter Integrating Sphere	Verified by D204 standard lamp	
ST-R-327	Spectral analysis system HAAS-2000	Verified by D204 standard lamp	
ST-R-332	Standard Lamp	2021-07-08	2022-07-07
ST-R-333	Power Meter for Integrating Sphere	2021-06-26	2022-06-25
ST-R-405	Temperature Probe for Integrating Sphere	2021-01-23	2022-01-22
ST-R-355	Goniophotometer system	Verified by D908S standard lamp	
ST-R-359	Standard Lamp	2021-07-08	2022-07-07
ST-R-358	Power Meter for Goniophotometer	2021-06-26	2022-06-25
ST-R-354	hygrothermograph for Goniophotometer	2021-06-27	2022-06-28
Expand Uncertainty: Photometric Measurement (Sphere):3.06%, k=2 Chromaticity Measurement(Sphere):43.46K, k=2 Photometric Measurement(Goniophotometer):3.38%, k=2			

******* END OF REPORT *******