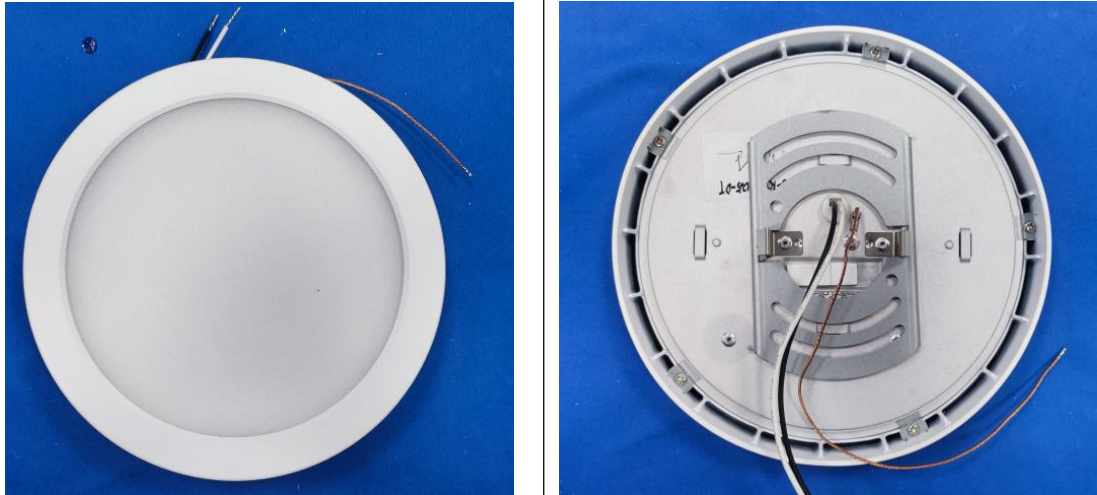


1.1 Product Information:

Organization Name		
Brand Name		
Model Number	FMLS-R7-MCT5-DT LDPRO-R7-MCT5-DT	
SKU (if available)	N/A	
Type of Luminaire (for integral lamps, list base type and lamp type)	LED Luminaires	
Rated Voltage / Frequency	120VAC, 60 Hz	
Nominal Power	14W	
Rated Initial Lamp Lumen	--	
Declared CCT	2700K, 3000K, 3500K,4000K, 5000K (Color tunable)	
LED Manufacturer	Hongli Zhihui Group Co.,Ltd. Guangzhou Branch	
LED Model	HL-AS-2835D1W-2-S1-08L-PCT-HR5	
Sample Number	UTC2311003E-B1	
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	2023-11-11
Date of Test	2023-11-13
Test item	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	1. IES LM-79-2019 Electrical and Photometric Measurements of Solid-State Lighting Products 2. ANSI C78.377-2008 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
Reference Work Instruction	BL-QP-033

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. Goniophotometer far field detector $f1'=1.42\%$, Test distance: 14.14m

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.

Self-absorption:

FMLS-R7-MCT5-DT:1.026

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
(Refer to Work Instruction BL-QP-033)

Test date	2023-11-13	Test Ambient:	25.1 ° C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	FMLS-R7-MCT5-DT (Setting at 2700K)		

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
UTC231100 3E-B1	120.0	60	0.124	13.96	0.937

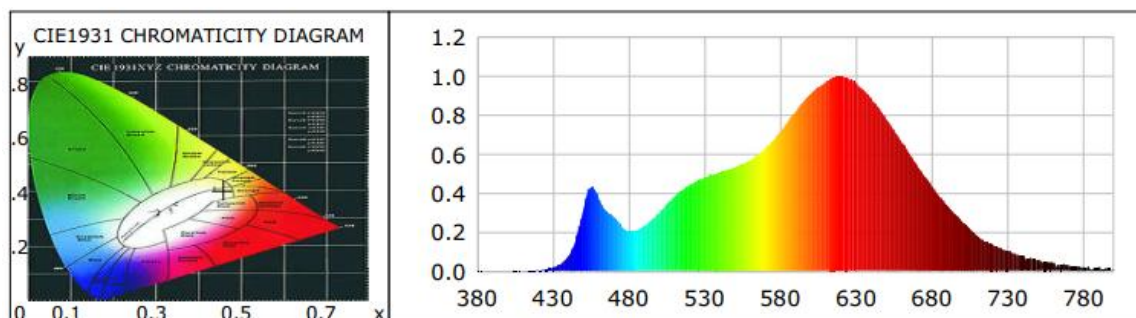
Chromaticity Measurement - Sphere-Spectroradiometer Method:

Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120.0	R1	95	R9	54
Frequency (Hz)	60	R2	99	R10	97
CCT (K)	2735	R3	97	R11	97
Duv	-0.00072	R4	94	R12	83
Chromaticity (x, y)	x=0.4558 y=0.4077	R5	95	R13	96
Chromaticity (u', v')	u(u')=0.2612 v'=0.5256	R6	96	R14	100
Color Rendering Index (CRI)	92.7	R7	88	R15	88
R9	54	R8	78	--	--
Rf	90	--	--	--	--
Rg	97	--	--	--	--

Photometric Measurement – Goniophotometer Method:

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	912.8
Luminous Efficacy (lm/W)	65.39
Beam Angle (°)	111.8
Center Beam Candle Power (cd)	319

Spectral Power Distribution & Chromaticity Diagram



WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)
380	0.0000	0.0006	535	0.4636	9.2396	690	0.5478	10.9180
385	0.0011	0.0226	540	0.4801	9.5685	695	0.4885	9.7351
390	0.0020	0.0402	545	0.4934	9.8324	700	0.4326	8.6218
395	0.0012	0.0243	550	0.5058	10.0802	705	0.3820	7.6127
400	0.0018	0.0359	555	0.5195	10.3542	710	0.3381	6.7390
405	0.0016	0.0312	560	0.5319	10.6012	715	0.2917	5.8141
410	0.0007	0.0131	565	0.5504	10.9702	720	0.2515	5.0121
415	0.0020	0.0406	570	0.5679	11.3187	725	0.2148	4.2812
420	0.0058	0.1164	575	0.5972	11.9015	730	0.1809	3.6043
425	0.0093	0.1856	580	0.6289	12.5337	735	0.1494	2.9770
430	0.0175	0.3484	585	0.6665	13.2822	740	0.1363	2.7162
435	0.0355	0.7079	590	0.7130	14.2104	745	0.1229	2.4488
440	0.0747	1.4878	595	0.7673	15.2918	750	0.1054	2.1007
445	0.1563	3.1149	600	0.8169	16.2811	755	0.0842	1.6776
450	0.3097	6.1728	605	0.8672	17.2833	760	0.0786	1.5656
455	0.4311	8.5913	610	0.9126	18.1882	765	0.0708	1.4115
460	0.3794	7.5619	615	0.9453	18.8399	770	0.0583	1.1610
465	0.3101	6.1801	620	0.9695	19.3227	775	0.0515	1.0271
470	0.2805	5.5903	625	0.9933	19.7969	780	0.0430	0.8560
475	0.2330	4.6429	630	0.9981	19.8918	785	0.0328	0.6546
480	0.2036	4.0577	635	0.9887	19.7036	790	0.0321	0.6402
485	0.2092	4.1686	640	0.9685	19.3028	795	0.0238	0.4745
490	0.2307	4.5979	645	0.9302	18.5395	800	0.0188	0.3740
495	0.2599	5.1792	650	0.8883	17.7039			
500	0.3000	5.9780	655	0.8387	16.7140			
505	0.3431	6.8381	660	0.7818	15.5800			
510	0.3796	7.5650	665	0.7244	14.4362			
515	0.4142	8.2556	670	0.6637	13.2269			
520	0.4417	8.8024	675	0.6054	12.0645			
525	0.4636	9.2396	680	0.5478	10.9180			
530	0.4801	9.5685	685	0.4885	9.7351			

Zonal Lumen Tabulation

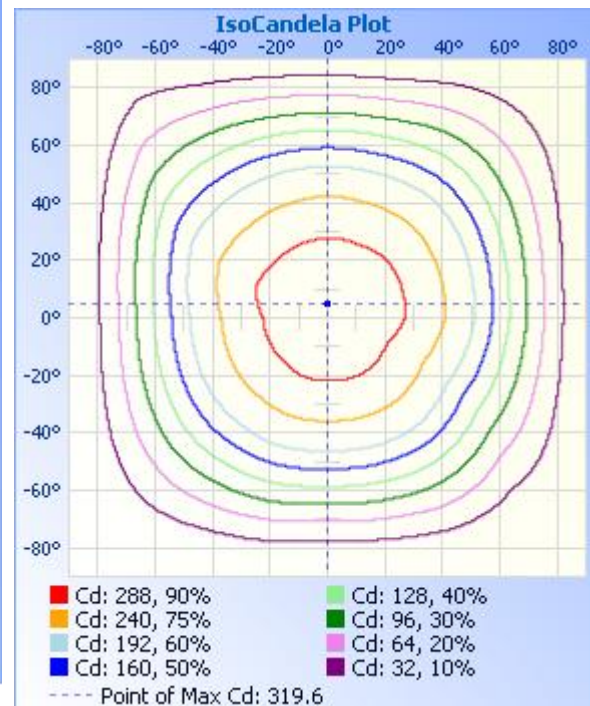
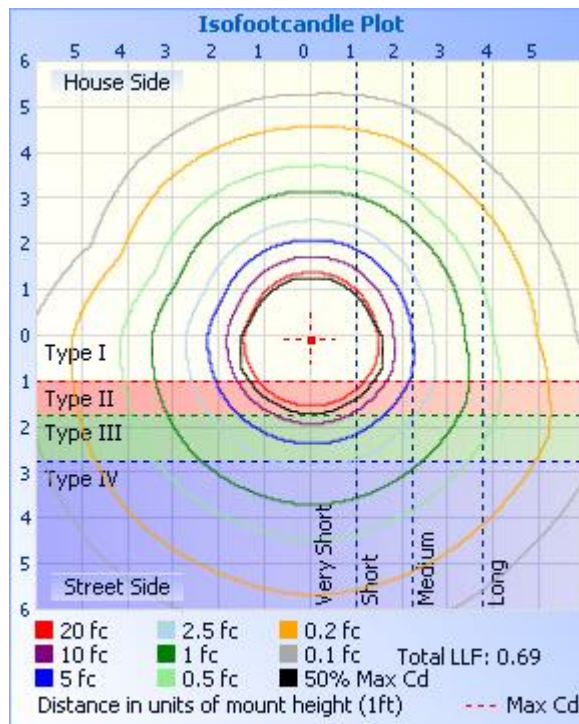
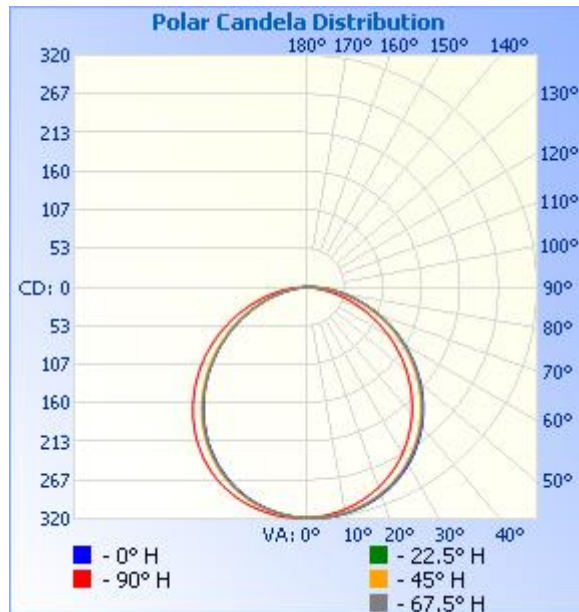
Zonal Lumen Summary

Zone	Lumens	% Lamp	% Luminaire
0-30	248.9	27.3%	27.3%
0-40	408.2	44.7%	44.7%
0-60	719.1	78.8%	78.8%
60-90	192.6	21.1%	21.1%
70-100	82.4	9%	9%
90-120	0.5	0%	0%
0-90	911.7	99.9%	99.9%
90-180	1.0	0.1%	0.1%
0-180	912.7	100%	100%

Lumens Per Zone

Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	30.2	3.3%	90-100	0.4	0%
10-20	86.7	9.5%	100-110	0.0	0%
20-30	132.0	14.5%	110-120	0.0	0%
30-40	159.3	17.4%	120-130	0.1	0%
40-50	164.2	18.0%	130-140	0.1	0%
50-60	146.6	16.1%	140-150	0.1	0%
60-70	110.6	12.1%	150-160	0.1	0%
70-80	63.7	7.0%	160-170	0.1	0%
80-90	18.3	2.0%	170-180	0.0	0%

Photometric Data



Candela Table - Type C

	0	22.5	45	67.5	90	112.5	135	157.5	180	202.5	225	247.5	270	292.5	315	337.5	360
0	319	319	319	319	319	319	319	319	319	319	319	319	319	319	319	319	319
1	319	319	319	319	319	318	318	319	319	318	319	318	319	319	319	319	319
2	319	319	319	319	318	318	318	318	318	318	318	318	319	319	319	319	319
3	319	319	319	319	318	317	317	317	317	317	318	317	319	319	319	319	319
4	320	319	319	319	317	317	316	317	317	317	317	317	319	319	319	319	320
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125	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

126	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
127	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
128	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
129	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
130	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
131	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
132	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
133	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
134	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
135	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
136	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
137	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
138	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
139	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
140	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
141	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
142	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
143	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
144	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
145	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
146	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
147	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
148	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
149	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
150	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
151	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
152	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
153	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
154	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
155	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
156	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
157	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

158	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
160	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
161	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
162	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
163	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
164	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
165	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
166	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
167	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
168	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
169	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
170	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
171	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
172	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
173	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
174	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
175	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
176	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
177	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
178	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
179	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
180	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

2.2 Electrical, Photometric and Chromaticity Measurements

(Refer to Work Instruction BL-QP-033)

Test date	2023-11-13	Test Ambient:	25.1 ° C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	FMLS-R7-MCT5-DT (Setting at 3000K)		

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
UTC231100 3E-B1	120.0	60	0.124	13.96	0.938

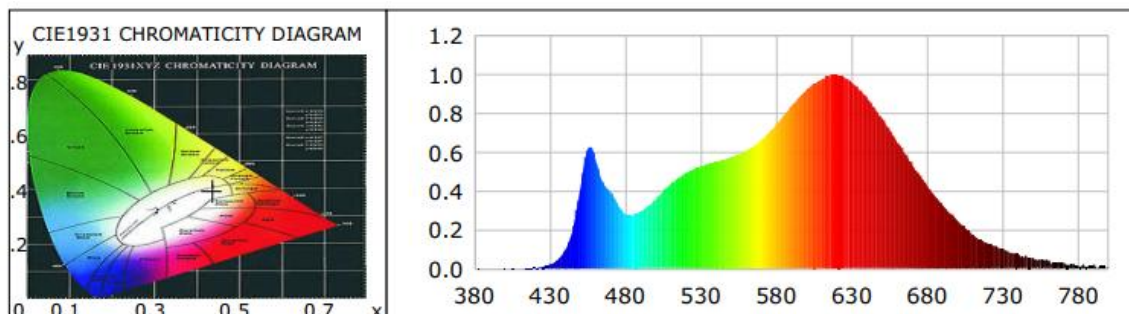
Chromaticity Measurement - Sphere-Spectroradiometer Method:

Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120.0	R1	97	R9	62
Frequency (Hz)	60	R2	98	R10	98
CCT (K)	2983	R3	95	R11	98
Duv	-0.00298	R4	95	R12	80
Chromaticity (x, y)	x=0.4339 y=0.3956	R5	97	R13	99
Chromaticity (u', v')	u(u')=0.2522 v'=0.5176	R6	93	R14	99
Color Rendering Index (CRI)	93.1	R7	88	R15	92
R9	62	R8	81	--	--
Rf	90	--	--	--	--
Rg	97	--	--	--	--

Photometric Measurement – Sphere-Spectroradiometer Method:

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	953.9
Luminous Efficacy (lm/W)	68.33

Spectral Power Distribution & Chromaticity Diagram



WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)
380	0.0000	0.0008	535	0.5116	10.0237	690	0.5368	10.5170
385	0.0008	0.0152	540	0.5273	10.3302	695	0.4789	9.3816
390	0.0019	0.0371	545	0.5400	10.5789	700	0.4251	8.3276
395	0.0014	0.0280	550	0.5519	10.8118	705	0.3742	7.3313
400	0.0019	0.0373	555	0.5615	11.0003	710	0.3301	6.4675
405	0.0017	0.0326	560	0.5746	11.2581	715	0.2845	5.5733
410	0.0009	0.0185	565	0.5900	11.5593	720	0.2459	4.8180
415	0.0020	0.0388	570	0.6077	11.9051	725	0.2093	4.1005
420	0.0060	0.1172	575	0.6325	12.3914	730	0.1758	3.4442
425	0.0100	0.1964	580	0.6640	13.0092	735	0.1461	2.8626
430	0.0212	0.4160	585	0.6993	13.7001	740	0.1307	2.5614
435	0.0440	0.8623	590	0.7396	14.4898	745	0.1182	2.3160
440	0.0924	1.8106	595	0.7904	15.4850	750	0.1019	1.9958
445	0.1929	3.7787	600	0.8369	16.3954	755	0.0807	1.5809
450	0.3987	7.8112	605	0.8837	17.3126	760	0.0759	1.4862
455	0.6099	11.9497	610	0.9236	18.0944	765	0.0686	1.3440
460	0.5749	11.2628	615	0.9547	18.7036	770	0.0539	1.0566
465	0.4468	8.7540	620	0.9754	19.1099	775	0.0482	0.9438
470	0.3963	7.7642	625	0.9954	19.5014	780	0.0416	0.8146
475	0.3346	6.5552	630	0.9993	19.5775	785	0.0305	0.5975
480	0.2809	5.5041	635	0.9865	19.3280	790	0.0313	0.6132
485	0.2764	5.4156	640	0.9616	18.8388	795	0.0225	0.4416
490	0.2957	5.7942	645	0.9261	18.1429	800	0.0166	0.3252
495	0.3226	6.3210	650	0.8812	17.2637			
500	0.3585	7.0243	655	0.8307	16.2749			
505	0.3987	7.8112	660	0.7747	15.1772			
510	0.4363	8.5485	665	0.7140	13.9886			
515	0.4656	9.1213	670	0.6546	12.8245			
520	0.4913	9.6253	675	0.5957	11.6705			
525	0.5116	10.0237	680	0.5368	10.5170			
530	0.5273	10.3302	685	0.4789	9.3816			

2.3 Electrical, Photometric and Chromaticity Measurements

(Refer to Work Instruction BL-QP-033)

Test date	2023-11-13	Test Ambient:	25.1 ° C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	FMLS-R7-MCT5-DT (Setting at 3500K)		

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
UTC231100 3E-B1	120.0	60	0.125	14.05	0.936

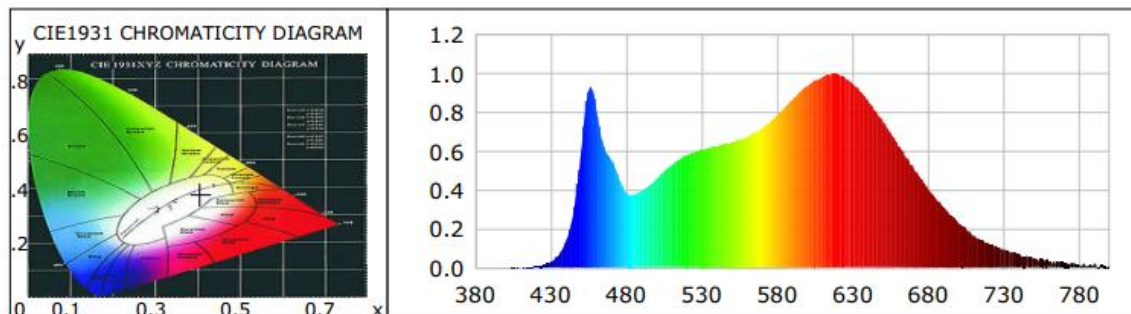
Chromaticity Measurement - Sphere-Spectroradiometer Method:

Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120.0	R1	98	R9	71
Frequency (Hz)	60	R2	97	R10	94
CCT (K)	3417	R3	95	R11	98
Duv	-0.00432	R4	95	R12	77
Chromaticity (x, y)	x=0.4053 y=0.3810	R5	96	R13	98
Chromaticity (u', v')	u(u')=0.2398 v'=0.5072	R6	92	R14	98
Color Rendering Index (CRI)	93.1	R7	89	R15	95
R9	71	R8	85	--	--
Rf	89	--	--	--	--
Rg	97	--	--	--	--

Photometric Measurement – Sphere-Spectroradiometer Method:

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	1003.5
Luminous Efficacy (lm/W)	71.42

Spectral Power Distribution & Chromaticity Diagram



WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)
380	0.0001	0.0024	535	0.5948	11.5636	690	0.5163	10.0374
385	0.0014	0.0272	540	0.6077	11.8141	695	0.4577	8.8980
390	0.0021	0.0403	545	0.6165	11.9862	700	0.4050	7.8733
395	0.0014	0.0268	550	0.6247	12.1441	705	0.3567	6.9350
400	0.0016	0.0316	555	0.6364	12.3728	710	0.3124	6.0728
405	0.0021	0.0405	560	0.6464	12.5666	715	0.2697	5.2438
410	0.0012	0.0229	565	0.6591	12.8143	720	0.2296	4.4633
415	0.0022	0.0423	570	0.6737	13.0981	725	0.1967	3.8231
420	0.0079	0.1526	575	0.6934	13.4808	730	0.1636	3.1806
425	0.0147	0.2851	580	0.7190	13.9774	735	0.1378	2.6800
430	0.0295	0.5730	585	0.7479	14.5402	740	0.1234	2.3988
435	0.0627	1.2199	590	0.7834	15.2311	745	0.1117	2.1711
440	0.1334	2.5928	595	0.8253	16.0456	750	0.0966	1.8773
445	0.2771	5.3877	600	0.8640	16.7965	755	0.0753	1.4636
450	0.5805	11.2865	605	0.9057	17.6075	760	0.0692	1.3457
455	0.9069	17.6317	610	0.9386	18.2470	765	0.0640	1.2438
460	0.8325	16.1854	615	0.9633	18.7279	770	0.0516	1.0032
465	0.6292	12.2333	620	0.9834	19.1180	775	0.0454	0.8819
470	0.5595	10.8768	625	0.9945	19.3337	780	0.0367	0.7140
475	0.4665	9.0684	630	0.9934	19.3120	785	0.0279	0.5427
480	0.3848	7.4809	635	0.9767	18.9887	790	0.0282	0.5479
485	0.3760	7.3090	640	0.9503	18.4743	795	0.0216	0.4199
490	0.3949	7.6780	645	0.9093	17.6777	800	0.0143	0.2771
495	0.4207	8.1793	650	0.8617	16.7528			
500	0.4561	8.8671	655	0.8073	15.6942			
505	0.4931	9.5863	660	0.7513	14.6068			
510	0.5289	10.2834	665	0.6926	13.4642			
515	0.5566	10.8208	670	0.6316	12.2793			
520	0.5786	11.2481	675	0.5716	11.1132			
525	0.5948	11.5636	680	0.5163	10.0374			
530	0.6077	11.8141	685	0.4577	8.8980			

2.4 Electrical, Photometric and Chromaticity Measurements

(Refer to Work Instruction BL-QP-033)

Test date	2023-11-13	Test Ambient:	25.1 ° C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	FMLS-R7-MCT5-DT (Setting at 4000K)		

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
UTC231100 3E-B1	120.0	60	0.125	14.06	0.937

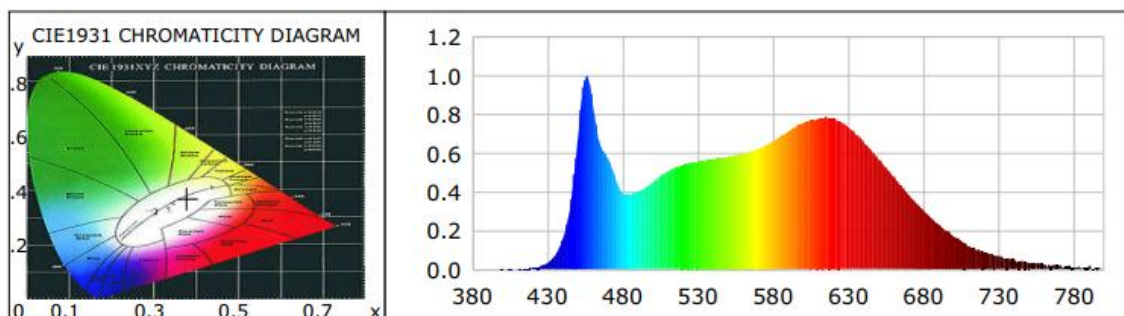
Chromaticity Measurement - Sphere-Spectroradiometer Method:

Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120.0	R1	97	R9	75
Frequency (Hz)	60	R2	96	R10	94
CCT (K)	3971	R3	95	R11	97
Duv	-0.00358	R4	93	R12	73
Chromaticity (x, y)	x=0.3792 y=0.3685	R5	95	R13	98
Chromaticity (u', v')	u(u')=0.2277 v'=0.4977	R6	92	R14	98
Color Rendering Index (CRI)	93.1	R7	89	R15	95
R9	75	R8	86	--	--
Rf	88	--	--	--	--
Rg	96	--	--	--	--

Photometric Measurement – Sphere-Spectroradiometer Method:

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	1028.9
Luminous Efficacy (lm/W)	73.18

Spectral Power Distribution & Chromaticity Diagram



WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)
380	0.0001	0.0020	535	0.5501	12.8212	690	0.3850	8.9729
385	0.0009	0.0213	540	0.5545	12.9226	695	0.3420	7.9711
390	0.0009	0.0203	545	0.5613	13.0802	700	0.3017	7.0308
395	0.0003	0.0075	550	0.5678	13.2326	705	0.2639	6.1504
400	0.0023	0.0527	555	0.5748	13.3947	710	0.2312	5.3875
405	0.0016	0.0374	560	0.5825	13.5747	715	0.1991	4.6404
410	0.0009	0.0220	565	0.5890	13.7274	720	0.1696	3.9525
415	0.0030	0.0701	570	0.5951	13.8682	725	0.1449	3.3777
420	0.0091	0.2111	575	0.6083	14.1759	730	0.1200	2.7971
425	0.0161	0.3756	580	0.6228	14.5145	735	0.0985	2.2954
430	0.0338	0.7875	585	0.6393	14.9000	740	0.0903	2.1054
435	0.0716	1.6683	590	0.6623	15.4339	745	0.0816	1.9019
440	0.1519	3.5395	595	0.6855	15.9753	750	0.0718	1.6731
445	0.3162	7.3683	600	0.7111	16.5729	755	0.0555	1.2932
450	0.6561	15.2902	605	0.7349	17.1270	760	0.0518	1.2064
455	0.9855	22.9674	610	0.7564	17.6274	765	0.0460	1.0712
460	0.8598	20.0378	615	0.7700	17.9459	770	0.0361	0.8424
465	0.6428	14.9814	620	0.7768	18.1041	775	0.0312	0.7266
470	0.5737	13.3694	625	0.7861	18.3198	780	0.0278	0.6469
475	0.4737	11.0387	630	0.7791	18.1561	785	0.0186	0.4343
480	0.3929	9.1561	635	0.7629	17.7792	790	0.0222	0.5170
485	0.3856	8.9872	640	0.7341	17.1074	795	0.0139	0.3242
490	0.4015	9.3574	645	0.7004	16.3222	800	0.0124	0.2885
495	0.4236	9.8726	650	0.6594	15.3685			
500	0.4506	10.5011	655	0.6189	14.4232			
505	0.4812	11.2148	660	0.5721	13.3334			
510	0.5063	11.7992	665	0.5254	12.2435			
515	0.5241	12.2147	670	0.4781	11.1426			
520	0.5390	12.5605	675	0.4333	10.0984			
525	0.5501	12.8212	680	0.3850	8.9729			
530	0.5545	12.9226	685	0.3420	7.9711			

2.5 Electrical, Photometric and Chromaticity Measurements
(Refer to Work Instruction BL-QP-033)

Test date	2023-11-13	Test Ambient:	25.1 ° C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	FMLS-R7-MCT5-DT (Setting at 5000K)		

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
UTC231100 3E-B1	120.0	60	0.125	14.02	0.938

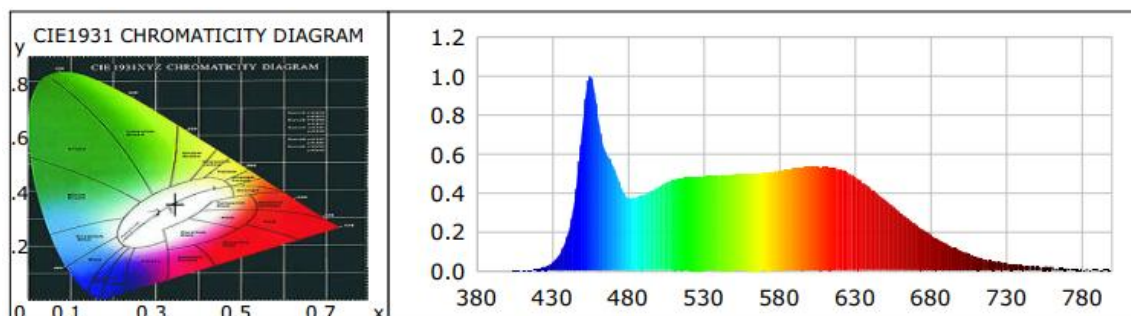
Chromaticity Measurement - Sphere-Spectroradiometer Method:

Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120.0	R1	95	R9	65
Frequency (Hz)	60	R2	99	R10	99
CCT (K)	5048	R3	96	R11	94
Duv	0.00124	R4	91	R12	72
Chromaticity (x, y)	x=0.3440 y=0.3532	R5	94	R13	99
Chromaticity (u', v')	u(u')=0.2101 v'=0.4853	R6	94	R14	98
Color Rendering Index (CRI)	92.7	R7	89	R15	93
R9	65	R8	84	--	--
Rf	89	--	--	--	--
Rg	96	--	--	--	--

Photometric Measurement – Sphere-Spectroradiometer Method:

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	1041.1
Luminous Efficacy (lm/W)	74.26

Spectral Power Distribution & Chromaticity Diagram



WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)
380	0.0001	0.0017	535	0.4839	13.9620	690	0.2383	6.8740
385	0.0007	0.0210	540	0.4843	13.9743	695	0.2094	6.0411
390	0.0016	0.0452	545	0.4864	14.0330	700	0.1839	5.3061
395	0.0012	0.0353	550	0.4879	14.0763	705	0.1590	4.5868
400	0.0013	0.0374	555	0.4908	14.1601	710	0.1397	4.0301
405	0.0020	0.0571	560	0.4934	14.2347	715	0.1182	3.4090
410	0.0011	0.0307	565	0.4957	14.3014	720	0.1008	2.9089
415	0.0033	0.0943	570	0.4967	14.3297	725	0.0845	2.4366
420	0.0093	0.2674	575	0.5000	14.4268	730	0.0699	2.0170
425	0.0185	0.5351	580	0.5045	14.5572	735	0.0578	1.6685
430	0.0393	1.1327	585	0.5053	14.5796	740	0.0520	1.4998
435	0.0843	2.4336	590	0.5122	14.7785	745	0.0460	1.3276
440	0.1772	5.1124	595	0.5193	14.9815	750	0.0391	1.1285
445	0.3667	10.5792	600	0.5251	15.1508	755	0.0310	0.8934
450	0.7308	21.0862	605	0.5305	15.3058	760	0.0283	0.8159
455	1.0000	28.8519	610	0.5345	15.4223	765	0.0279	0.8056
460	0.8084	23.3227	615	0.5338	15.4023	770	0.0208	0.5996
465	0.6135	17.7005	620	0.5322	15.3563	775	0.0182	0.5254
470	0.5446	15.7129	625	0.5288	15.2572	780	0.0178	0.5135
475	0.4394	12.6776	630	0.5206	15.0190	785	0.0121	0.3485
480	0.3748	10.8136	635	0.5057	14.5896	790	0.0133	0.3831
485	0.3751	10.8210	640	0.4818	13.9005	795	0.0067	0.1941
490	0.3897	11.2427	645	0.4537	13.0911	800	0.0048	0.1384
495	0.4077	11.7621	650	0.4242	12.2384			
500	0.4300	12.4056	655	0.3954	11.4093			
505	0.4495	12.9693	660	0.3624	10.4557			
510	0.4649	13.4145	665	0.3290	9.4909			
515	0.4744	13.6859	670	0.2972	8.5736			
520	0.4793	13.8275	675	0.2663	7.6831			
525	0.4839	13.9620	680	0.2383	6.8740			
530	0.4843	13.9743	685	0.2094	6.0411			

3. Test Equipment

Equipment Name	Model No.	Serial No.	Calibration Date
Goniophotometric System	GPM-3000	DYHXF120001	2023-01-17
AC Power Source	CHP-500C	DYBD010159	2023-01-18
Total Luminous Flux Standard Lamp	24V/150W	DYJYR040040	2023-02-01
Digital Power Meter	WT500	DYDWQ20010	2023-01-18
Integral Sphere (2M)	2M	DYJCE120067	2023-01-17
Digital Power Meter	WT500	DYDWQ200006	2023-01-18
Optical Color and Electrical Measurement System	CMS-3000S	DYJCE120067	2023-01-17
Expand Uncertainty: Photometric Measurement (Sphere): 2.08%, k=2 Chromaticity Measurement(Sphere):25.6K, k=2 Photometric Measurement(Goniophotometer):2.645%, k=2			

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