LM-79-08 Test Report

For

RAB LIGHTING INC

(Brand Name : RAB)

170 Ludlow Ave , PO BOX 970,Northvale,NJ 07647-2305 USA

Model name(s) :

DLG0011(G2NB)

Report Type: Testing and Report According to IES LM-79-2008

Type of Luminaire: Downlights

Report Date: 2023-5-29

1.1 Rated Values:	
Rated Voltage / Frequency	120V,60HZ
Nominal Power	6W
Rated Initial Lamp Lumen	350lm（2700k），400lm（3000k）
Declared CCT	2700k/3000k/3500k/4000k/5000k

1.2 Test Specifications:

Test item	1. Total Luminous Flux 2. Luminous Distribution I ntensity 3. Luminous Efficacy 4. Correlated Color Temperature 5. Color Rendering Index 6. Chromaticity C oordinate 7. Electrical Parameters
Reference Standard	1. IES LM-79-2008 Electrical and Photometric Measurements of Solid-State Lighting Products 2. ANSI C78.377-2015 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	QD25

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°C ±1°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 25ºC ±1ºC. 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 25ºC±1ºC. 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.

2.1.1 Electrical, Photometric and Chromaticity Measurements

Test date	2023-5-29	**Test Ambient:**	25.3
Test Orientation	As intended	**Stabilization Time (min)**	15
Model Number	DLG0011(G2NB)	**CCT Setting**	2700k

Electrical Measurement:

Sampel No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
#1	120	60	0.05196	6.043	0.9654

Chromaticity Measurement – Sphere-Spectroradiometer Method:

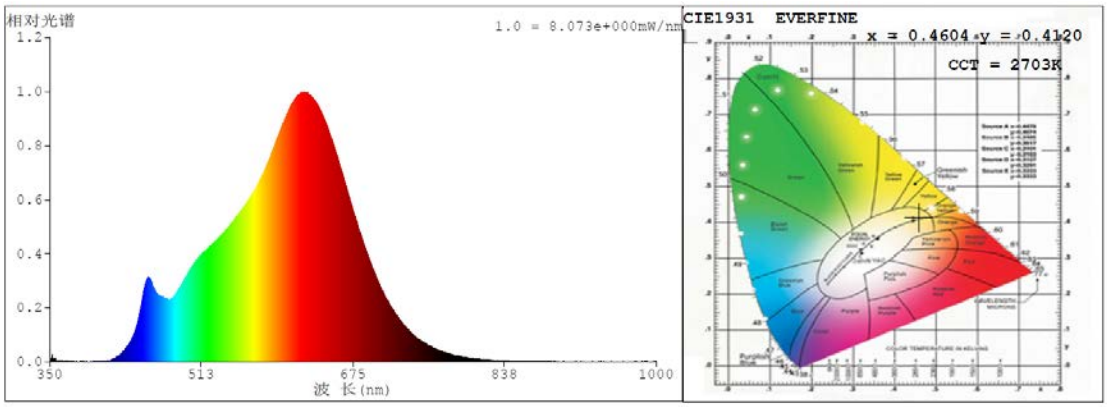
Parameter	Result
Test Voltage (V)	120
Frequency (Hz)	60
CCT (K)	2703
Duv	0.0005
Chromaticity (x, y)	x=0.4604, y=0.412
Chromaticity (u', v')	u'=0.2622, v'=0.528
Color Rendering Index (CRI)	94.2
R9	64

Special Color Rendering Indices			
R1	96	R9	64
R2	100	R10	99
R3	97	R11	98
R4	95	R12	89
R5	96	R13	97
R6	97	R14	99
R7	91	R15	91
R8	83	--	--

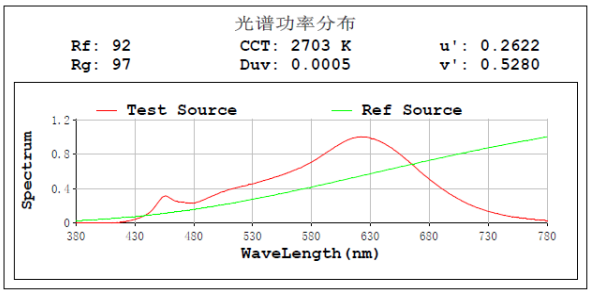
Photometric Measurement – Goniophotometer Method:

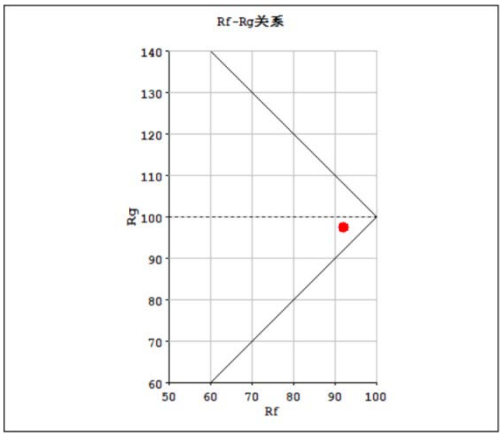
Parameter	Result
Test Voltage (V)	120
Frequency (Hz)	60
Total Luminous (lm)	377.22
Luminous Efficacy (lm/W)	62.56
Beam Angle (°)	20.9
Center Beam Candle Power (cd)	1760

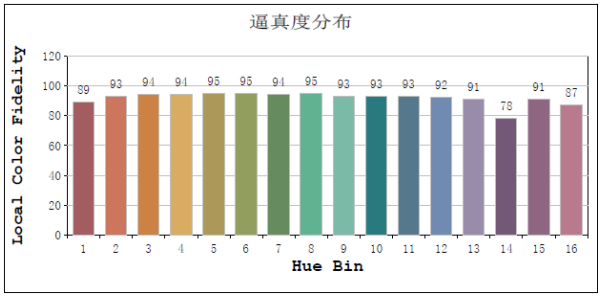
Spectral Power Distribution & Chromaticity Diagram

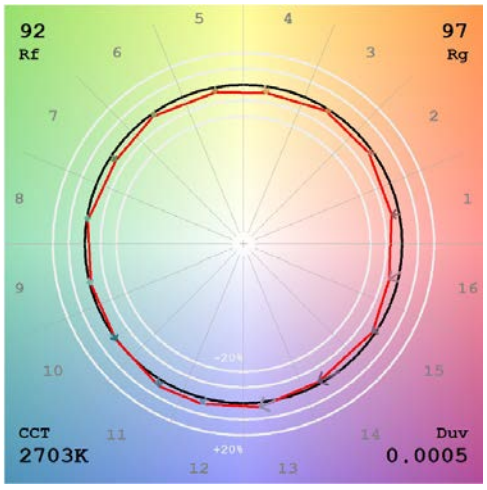


TM30







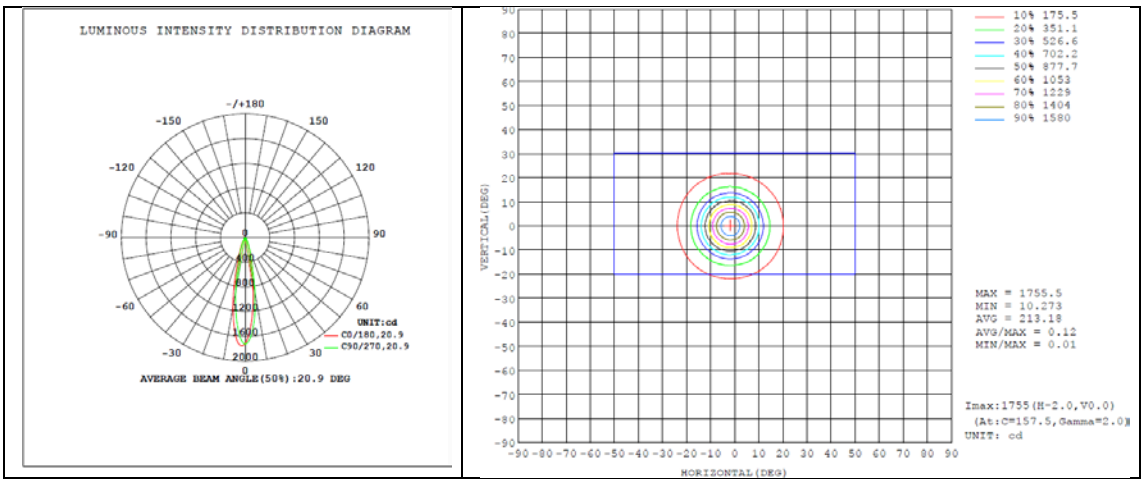


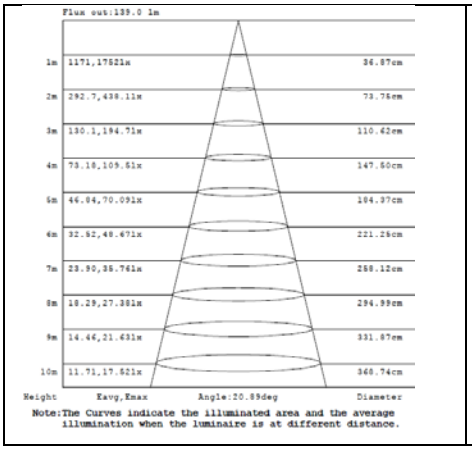
Zonal Lumen Tabulation

Zonal Lumen Summary		
Zone	**Lumens**	**% Luminaire**
0-30	308.9	81.9%
0-40	338.4	89.7%
0-60	366.7	97.2%
60-90	10.6	2.8%
70-100	3.8	1%
90-120	0.0	0%
0-90	377.2	100%
90-180	0.0	0%
0-180	377.2	100%

Lumens Per Zone					
Zone	**Lumens**	**% Total**	**Zone**	**Lumens**	**% Total**
0-10	121.8	32.3%	90-100	0	0%
10-20	127.1	33.7%	100-110	0	0%
20-30	60.0	15.9%	110-120	0	0%
30-40	29.4	7.8%	120-130	0	0%
40-50	17.0	4.5%	130-140	0	0%
50-60	11.3	3%	140-150	0	0%
60-70	6.8	1.8%	150-160	0	0%
70-80	3.8	1%	160-170	0	0%
80-90	0.4	0.1%	170-180	0	0%

Photometric Data





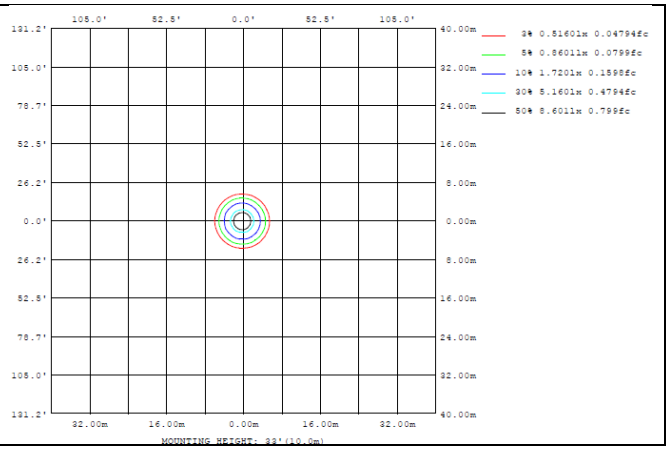


Table--1 UNIT: cd

γ (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	1721	1721	1721	1721	1721	1721	1721	1721	1721	1721	1721	1721	1721	1721	1721	1721			
5	1296	1315	1356	1411	1467	1539	1591	1636	1645	1616	1582	1500	1442	1379	1341	1307			
10	708	733	777	853	924	1012	1075	1133	1139	1107	1058	966	899	823	772	726			
15	327	339	357	391	425	477	524	576	591	558	515	454	410	367	348	332			
20	179	183	194	205	222	238	258	278	280	270	258	233	211	196	184	181			
25	104	107	111	118	125	135	144	151	154	152	144	133	121	112	107	104			
30	61.2	62.9	65.4	69.3	73.5	78.9	83.1	88.6	90.3	87.8	84.2	76.7	71.2	66.2	63.5	61.3			
35	38.7	39.6	41.2	43.3	45.4	48.3	50.8	53.5	53.9	52.4	50.6	46.9	44.1	41.5	39.8	38.7			
40	26.7	27.3	28.3	29.4	30.4	32.0	33.4	34.8	34.8	34.2	33.1	31.2	29.6	28.3	27.4	26.7			
45	19.6	20.0	20.6	21.3	22.1	23.1	23.9	24.7	24.7	24.1	23.6	22.5	21.6	20.7	20.0	19.7			
50	14.6	14.8	15.3	15.9	16.5	17.5	17.8	18.3	18.3	18.0	17.6	16.9	16.2	15.5	15.0	14.6			
55	10.9	11.2	11.4	11.8	12.3	12.9	13.3	13.6	13.7	13.4	13.2	12.6	12.2	11.6	11.2	11.0			
60	8.26	8.40	8.64	8.89	9.29	9.70	9.94	10.2	10.2	10.1	9.97	9.53	9.27	8.86	8.55	8.38			
65	6.03	6.09	6.28	6.56	6.85	7.20	7.38	7.60	7.67	7.56	7.39	7.05	6.80	6.51	6.26	6.11			
70	4.31	4.34	4.46	4.64	4.88	5.11	5.25	5.40	5.47	5.38	5.24	5.00	4.82	4.61	4.42	4.37			
75	2.60	2.64	2.75	2.91	3.12	3.36	3.49	3.62	3.69	3.60	3.45	3.24	3.06	2.84	2.67	2.62			
80	1.06	1.09	1.17	1.30	1.49	1.64	1.77	1.85	1.91	1.85	1.73	1.55	1.24	1.25	1.11	1.08			
85	0.08	0.07	0.16	0.19	0.25	0.33	0.45	0.48	0.51	0.51	0.42	0.37	0.17	0.20	0.10	0.10			
90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			

2.1.2 Electrical, Photometric and Chromaticity Measurements

Test date	2023-5-29	Test Ambient:	25.3
Test Orientation	As intended	Stabilization Time (min)	15
Model Number	DLG0011(G2NB)	CCT Setting	3000k

Electrical Measurement:

Sampel No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
#1	120	60	0.05071	5.886	0.9635

Chromaticity Measurement - Sphere-Spectroradiometer Method:

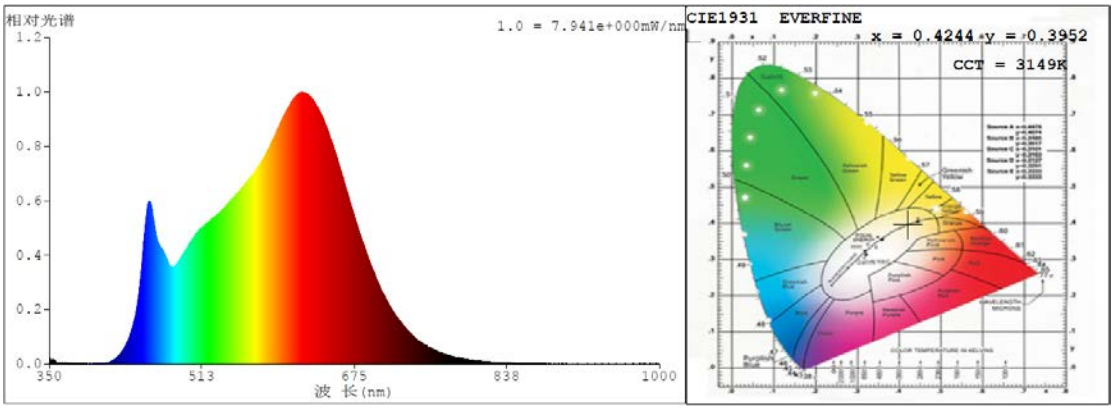
Parameter	Result
Test Voltage (V)	120
Frequency (Hz)	60
CCT (K)	3149
Duv	-0.0018
Chromaticity (x, y)	x=0.4244, y=0.3952
Chromaticity (u', v')	u'=0.2463, v'=0.5159
Color Rendering Index (CRI)	94.3
R9	73

Special Color Rendering Indices			
R1	98	R9	73
R2	98	R10	96
R3	96	R11	98
R4	95	R12	83
R5	97	R13	99
R6	94	R14	98
R7	91	R15	94
R8	86	--	--

Photometric Measurement – Goniophotometer Method:

Parameter	Result
Test Voltage (V)	120
Frequency (Hz)	60
Total Luminous (lm)	416.18
Luminous Efficacy (lm/W)	70.81
Beam Angle (°)	21.0
Center Beam Candle Power (cd)	1925

Spectral Power Distribution & Chromaticity Diagram



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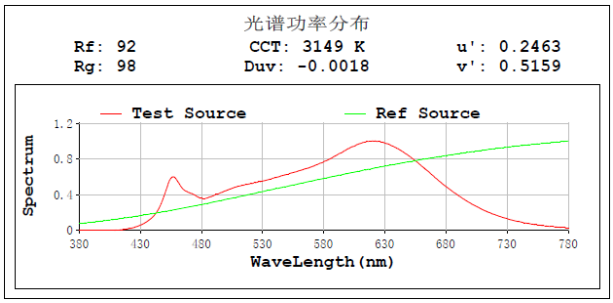
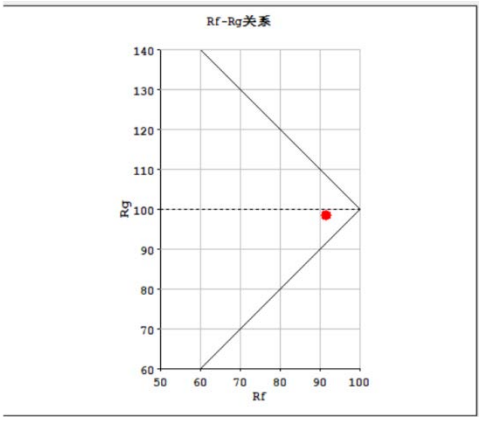
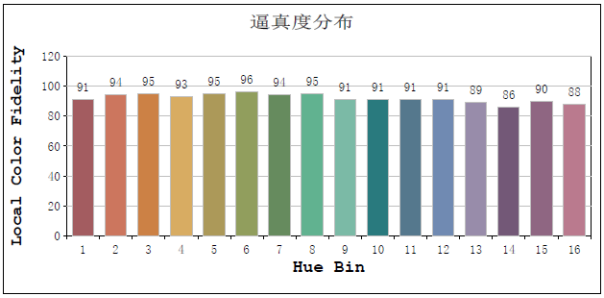
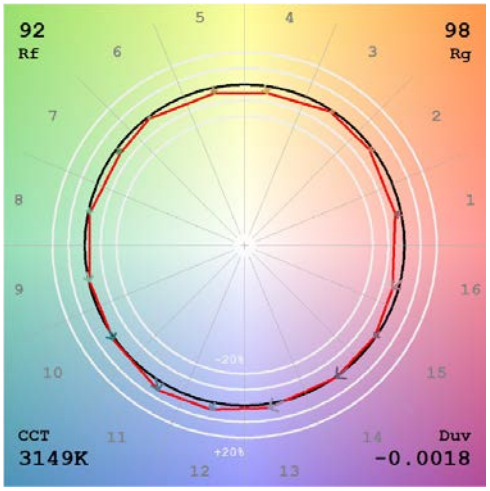






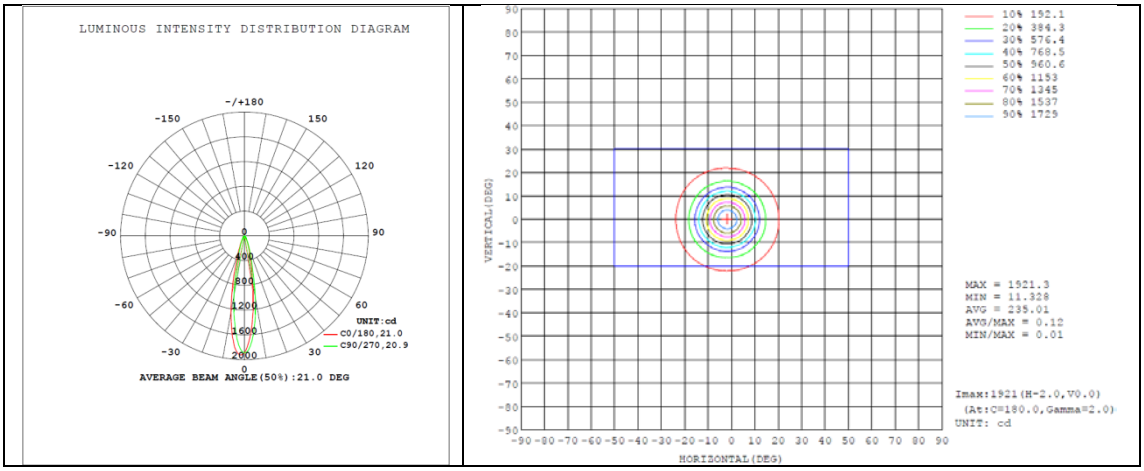


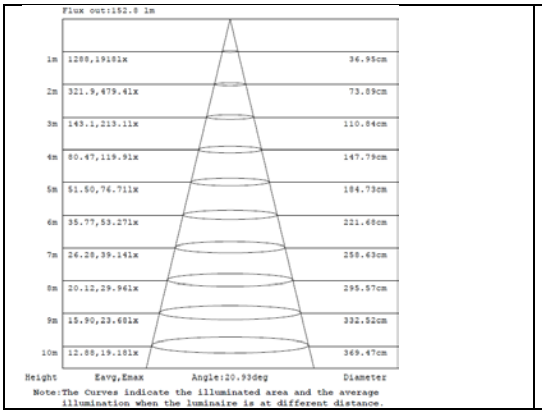
Zonal Lumen Tabulation

Zonal Lumen Summary		
Zone	**Lumens**	**% Luminaire**
0-30	340.4	81.8%
0-40	372.9	89.6%
0-60	404.5	97.2%
60-90	11.7	2.8%
70-100	0.4	0.1%
90-120	0.0	0%
0-90	416.2	100%
90-180	0.0	0%
0-180	416.2	100%

Lumens Per Zone					
Zone	**Lumens**	**% Total**	**Zone**	**Lumens**	**% Total**
0-10	134.0	32.20%	90-100	0	0%
10-20	139.8	33.60%	100-110	0	0%
20-30	66.2	15.90%	110-120	0	0%
30-40	32.5	7.80%	120-130	0	0%
40-50	19.1	4.60%	130-140	0	0%
50-60	12.5	3.00%	140-150	0	0%
60-70	7.5	1.80%	150-160	0	0%
70-80	0.4	0.10%	160-170	0	0%
80-90	0.0	0.00%	170-180	0	0%

Photometric Data





Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

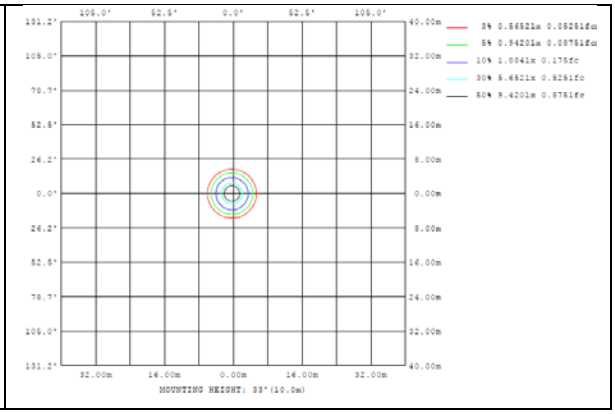


Table--1 **UNIT: cd**

γ (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	1887	1887	1887	1887	1887	1887	1887	1887	1887	1887	1887	1887	1887	1887	1887	1887			
5	1426	1454	1483	1555	1620	1698	1751	1802	1811	1773	1735	1654	1583	1513	1466	1433			
10	786	819	849	940	1020	1122	1189	1248	1254	1206	1159	1066	985	900	847	794			
15	364	377	393	431	471	531	582	641	652	608	566	502	451	403	382	366			
20	199	204	214	227	246	270	288	306	307	294	283	257	233	216	203	199			
25	114	118	122	130	141	150	160	167	169	166	158	147	134	124	118	114			
30	67.9	70.1	71.9	76.7	81.3	88.2	93.1	98.1	99.5	96.0	92.6	85.0	78.9	73.7	70.2	67.1			
35	43.0	44.0	45.2	48.0	50.4	53.9	56.6	59.3	59.5	57.6	55.7	51.9	48.9	46.1	44.0	42.6			
40	29.7	30.4	31.0	32.5	33.9	35.8	37.2	38.5	38.5	37.5	36.6	34.5	32.8	31.3	30.3	29.4			
45	21.7	22.2	22.7	23.6	24.5	25.8	26.4	27.3	27.3	26.7	26.0	24.9	23.9	23.0	22.1	21.6			
50	16.2	16.5	16.8	17.6	18.3	19.3	19.8	20.3	20.2	19.8	19.4	18.6	17.9	17.1	16.5	16.1			
55	12.1	12.3	12.5	13.1	13.6	14.3	14.7	15.1	15.1	14.8	14.5	14.0	13.5	12.8	12.3	12.1			
60	9.16	9.32	9.48	9.90	10.3	10.8	11.0	11.3	11.3	11.1	11.0	10.6	10.3	9.77	9.43	9.19			
65	6.67	6.80	6.91	7.25	7.58	7.97	8.17	8.42	8.48	8.34	8.13	7.81	7.55	7.19	6.94	6.72			
70	4.79	4.86	4.91	5.14	5.39	5.69	5.83	6.00	6.06	5.94	5.78	5.55	5.34	5.11	4.89	4.78			
75	2.90	2.97	3.03	3.24	3.47	3.74	3.87	4.02	4.07	3.94	3.81	3.60	3.39	3.13	2.96	2.89			
80	1.20	1.24	1.30	1.46	1.66	1.86	1.98	2.08	2.12	2.03	1.91	1.73	1.42	1.38	1.23	1.19			
85	0.10	0.10	0.19	0.23	0.34	0.40	0.52	0.56	0.59	0.56	0.48	0.41	0.17	0.23	0.12	0.12			
90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			

2.1.3 Electrical, Photometric and Chromaticity Measurements

Test date	2023-5-29	Test Ambient:	25.3
Test Orientation	As intended	Stabilization Time (min)	15
Model Number	DLG0011(G2NB)	CCT Setting	3500k

Electrical Measurement:

Sampel No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
#1	120	60	0.04963	5.75	0.9618

Chromaticity Measurement - Sphere-Spectroradiometer Method:

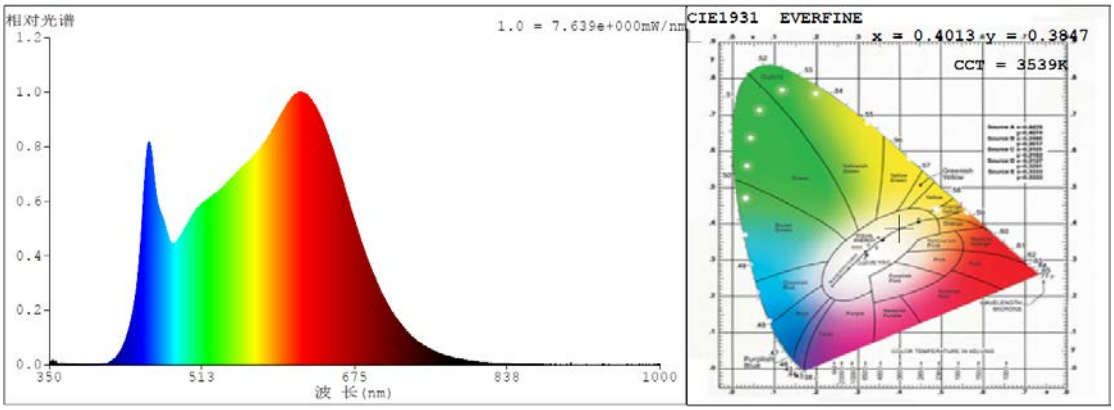
Parameter	Result
Test Voltage (V)	120
Frequency (Hz)	60
CCT (K)	3539
Duv	-0.0018
Chromaticity (x, y)	x=0.4013, y=0.3847
Chromaticity (u', v')	u'=0.2356, v'=0.5081
Color Rendering Index (CRI)	94.5
R9	76

Special Color Rendering Indices			
R1	98	R9	76
R2	98	R10	96
R3	96	R11	97
R4	94	R12	80
R5	96	R13	99
R6	94	R14	98
R7	91	R15	95
R8	88	--	--

Photometric Measurement – Goniophotometer Method:

Parameter	Result
Test Voltage (V)	120
Frequency (Hz)	60
Total Luminous (lm)	438.98
Luminous Efficacy (lm/W)	76.36
Beam Angle (°)	21
Center Beam Candle Power (cd)	2022

Spectral Power Distribution & Chromaticity Diagram



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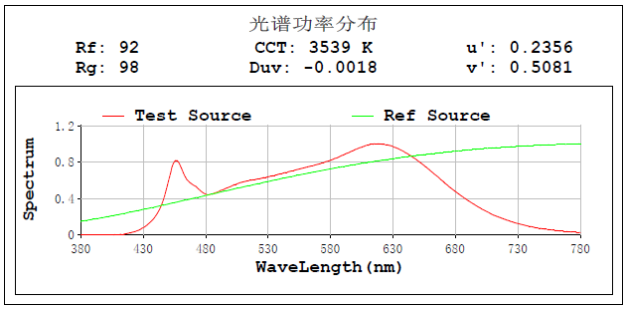
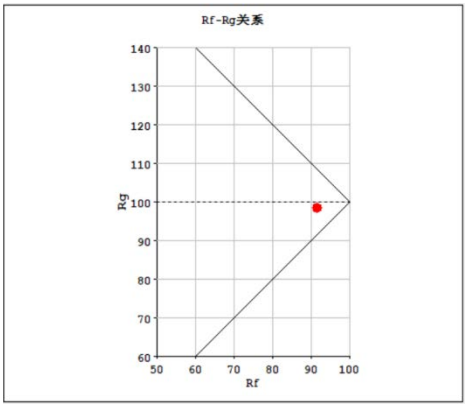
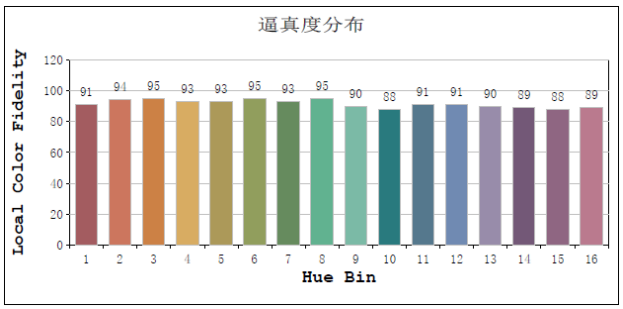
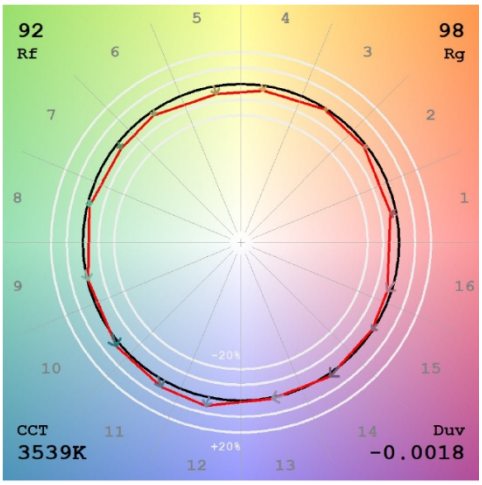






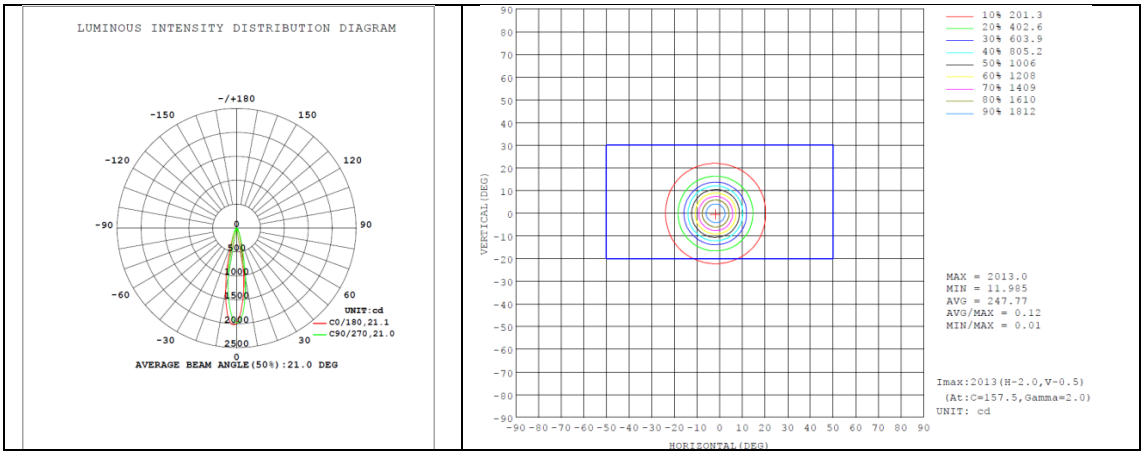


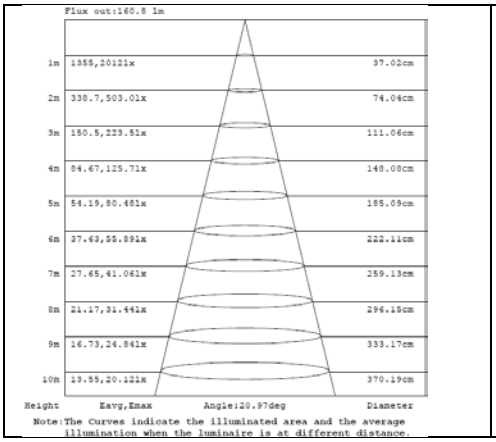
Zonal Lumen Tabulation

Zonal Lumen Summary		
Zone	**Lumens**	**% Luminaire**
0-30	358.6	81.70%
0-40	393.3	89.60%
0-60	426.7	97.20%
60-90	12.3	2.80%
70-100	4.4	1.00%
90-120	0.0	0.0%
0-90	439.0	100.0%
90-180	0.0	0.0%
0-180	439.0	100%

Lumens Per Zone					
Zone	**Lumens**	**% Total**	**Zone**	**Lumens**	**% Total**
0-10	141.8	32.31%	90-100	0	0%
10-20	147.9	33.70%	100-110	0	0%
20-30	69.8	15.90%	110-120	0	0%
30-40	34.7	7.90%	120-130	0	0%
40-50	20.2	4.60%	130-140	0	0%
50-60	13.2	3.0%	140-150	0	0%
60-70	7.9	1.8%	150-160	0	0%
70-80	4.0	0.9%	160-170	0	0%
80-90	0.0	0%	170-180	0	0%

Photometric Data





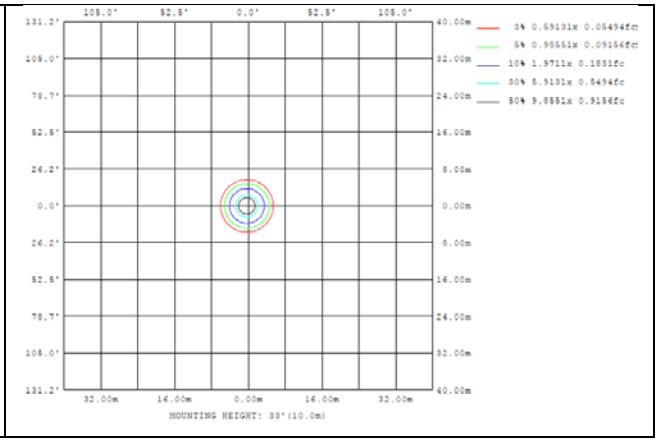


Table--1 UNIT: cd

γ (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	1981	1981	1981	1981	1981	1981	1981	1981	1981	1981	1981	1981	1981	1981	1981	1981			
5	1497	1524	1555	1632	1702	1780	1830	1893	1913	1880	1827	1742	1664	1592	1546	1512			
10	824	854	897	988	1070	1176	1248	1315	1327	1276	1218	1117	1039	951	891	840			
15	383	392	413	453	496	557	615	676	698	650	596	527	477	426	403	388			
20	209	212	224	239	259	285	304	324	327	313	298	271	246	229	215	211			
25	120	124	130	137	148	159	170	176	180	176	166	154	141	133	125	121			
30	71.2	73.4	75.7	80.9	86.2	93.6	98.6	104	106	102	97.3	89.2	83.5	78.0	74.4	71.1			
35	45.2	46.3	47.7	50.5	53.3	57.3	59.9	62.7	63.3	61.5	58.9	54.7	51.7	48.9	46.9	45.1			
40	31.2	31.9	32.7	34.3	35.8	37.8	39.4	40.7	40.9	40.0	38.6	36.4	34.8	33.2	32.2	31.2			
45	22.9	23.3	23.9	24.9	25.9	27.2	28.0	28.8	29.0	28.3	27.5	26.3	25.3	24.2	23.4	22.9			
50	17.1	17.3	17.7	18.6	19.4	20.4	20.9	21.5	21.5	21.0	20.6	19.6	18.9	18.1	17.5	17.0			
55	12.7	13.0	13.3	13.8	14.4	15.1	15.6	15.9	16.0	15.7	15.3	14.7	14.2	13.6	13.0	12.8			
60	9.65	9.80	10.0	10.4	10.9	11.4	11.6	11.9	12.1	11.9	11.6	11.2	10.8	10.4	9.97	9.74			
65	7.05	7.14	7.31	7.65	8.04	8.46	8.64	8.94	9.03	8.88	8.61	8.22	7.97	7.61	7.32	7.15			
70	5.05	5.12	5.21	5.42	5.72	6.01	6.17	6.34	6.46	6.33	6.10	5.86	5.64	5.39	5.19	5.09			
75	3.05	3.11	3.20	3.41	3.67	3.97	4.11	4.26	4.35	4.24	4.05	3.79	3.60	3.30	3.15	3.06			
80	1.25	1.28	1.38	1.54	1.76	1.95	2.09	2.22	2.27	2.20	2.04	1.83	1.46	1.46	1.32	1.27			
85	0.11	0.11	0.20	0.24	0.36	0.42	0.56	0.60	0.65	0.63	0.52	0.44	0.23	0.26	0.14	0.13			
90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			

2.1.4 Electrical, Photometric and Chromaticity Measurements

Test date	2023-5-29	Test Ambient:	25.3
Test Orientation	As intended	Stabilization Time (min)	15
Model Number	DLG0011(G2NB)	CCT Setting	4000k

Electrical Measurement:

Sampel No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
#1	120	60	0.05018	5.82	0.9627

Chromaticity Measurement - Sphere-Spectroradiometer Method:

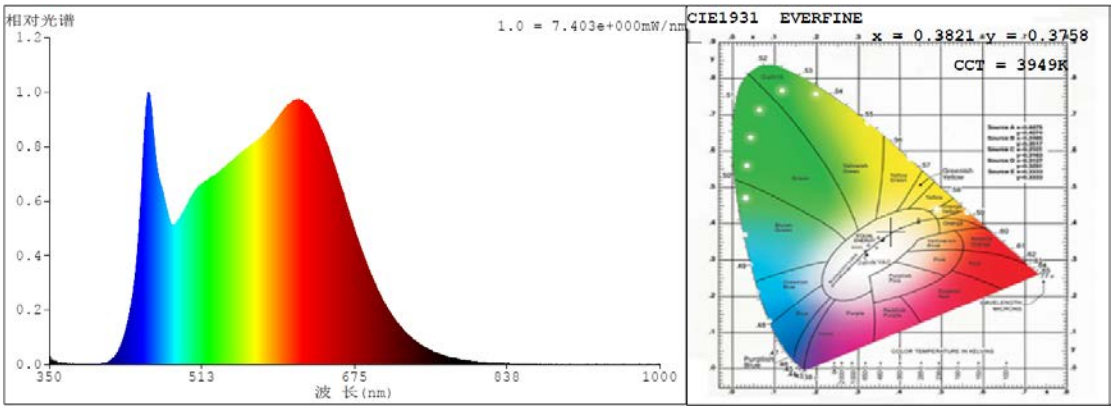
Parameter	Result
Test Voltage (V)	120
Frequency (Hz)	60
CCT (K)	3949
Duv	-0.0009
Chromaticity (x, y)	x=0.3821, y=0.3758
Chromaticity (u', v')	u'=0.2265, v'=0.5014
Color Rendering Index (CRI)	94.4
R9	75

Special Color Rendering Indices			
R1	97	R9	75
R2	98	R10	98
R3	96	R11	96
R4	93	R12	77
R5	95	R13	99
R6	95	R14	99
R7	92	R15	94
R8	88	--	--

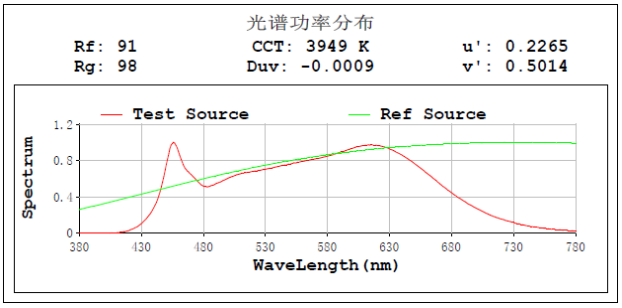
Photometric Measurement – Goniophotometer Method:

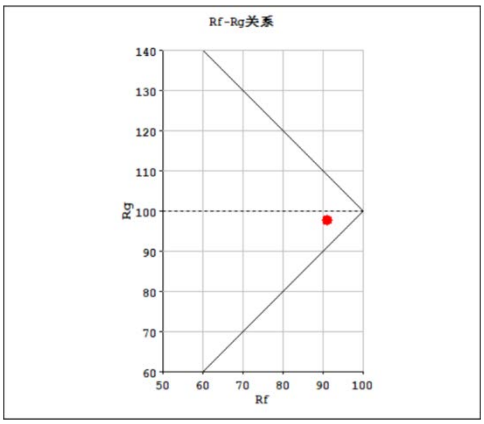
Parameter	Result
Test Voltage (V)	120
Frequency (Hz)	60
Total Luminous (lm)	449.28
Luminous Efficacy (lm/W)	77.19
Beam Angle (°)	21.1
Center Beam Candle Power (cd)	2060

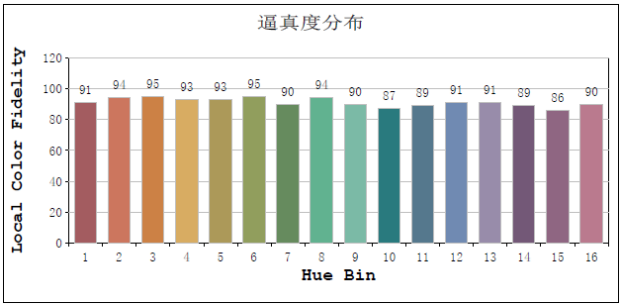
Spectral Power Distribution & Chromaticity Diagram

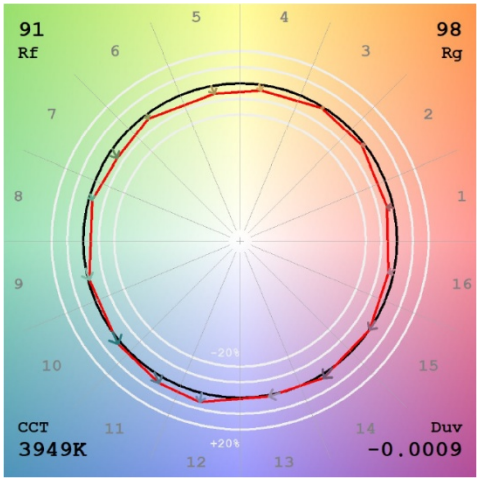


TM30







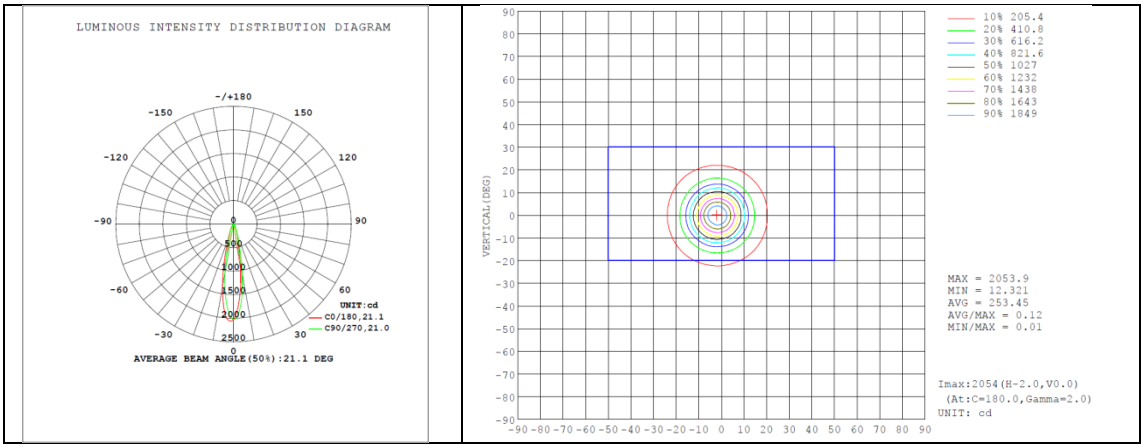


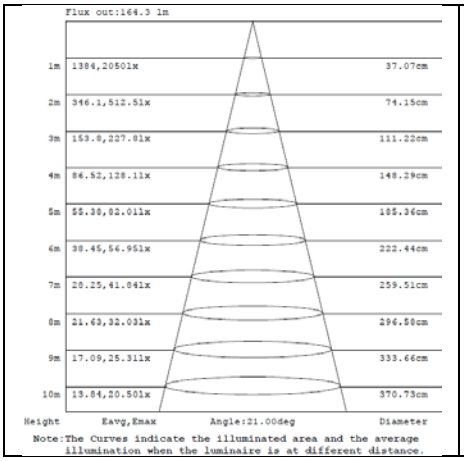
Zonal Lumen Tabulation

Zonal Lumen Summary		
Zone	**Lumens**	**% Luminaire**
0-30	367.1	81.70%
0-40	402.6	89.60%
0-60	436.7	97.20%
60-90	12.6	2.80%
70-100	4.5	1.00%
90-120	0.0	0.0%
0-90	449.3	100.0%
90-180	0.0	0.0%
0-180	449.3	100%

Lumens Per Zone					
Zone	**Lumens**	**% Total**	**Zone**	**Lumens**	**% Total**
0-10	143.8	32.00%	90-100	0	0%
10-20	151.9	33.80%	100-110	0	0%
20-30	71.4	15.90%	110-120	0	0%
30-40	35.5	7.90%	120-130	0	0%
40-50	20.7	4.60%	130-140	0	0%
50-60	13.5	3.0%	140-150	0	0%
60-70	8.1	1.8%	150-160	0	0%
70-80	0.4	0.1%	160-170	0	0%
80-90	0.0	0%	170-180	0	0%

Photometric Data





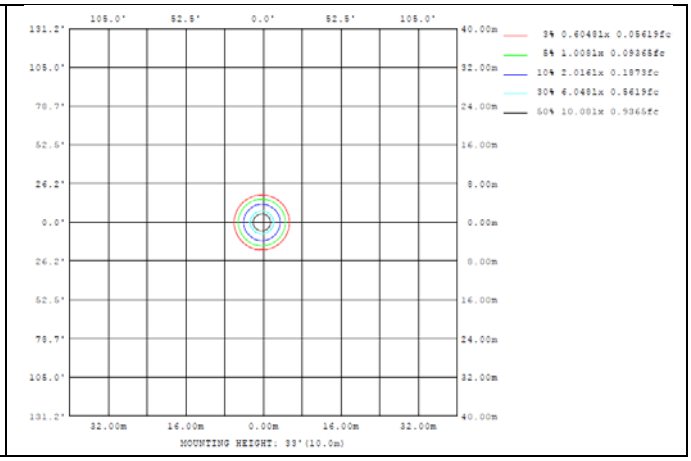


Table--1 UNIT: cd

γ (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	2022	2022	2022	2022	2022	2022	2022	2022	2022	2022	2022	2022	2022	2022	2022	2022			
5	1527	1550	1591	1669	1740	1820	1867	1933	1959	1920	1874	1781	1703	1627	1581	1543			
10	843	872	919	1010	1097	1200	1270	1341	1359	1304	1244	1144	1061	976	912	865			
15	390	402	423	466	509	571	625	689	708	663	609	540	488	437	413	398			
20	212	216	229	246	266	291	311	329	335	319	304	278	257	235	221	217			
25	123	126	133	140	153	164	174	180	183	179	170	158	145	137	129	124			
30	72.9	75.1	77.9	82.8	88.6	96.1	101	106	108	104	99.9	91.9	86.0	80.4	76.6	73.1			
35	46.3	47.5	49.1	51.8	54.8	58.7	61.5	64.1	64.6	62.7	60.3	56.1	53.1	50.5	48.1	46.3			
40	32.0	32.6	33.7	35.3	36.8	38.9	40.5	41.7	42.0	40.8	39.7	37.3	35.7	34.2	33.0	31.9			
45	23.4	23.9	24.6	25.7	26.7	28.1	28.7	29.5	29.6	29.0	28.3	27.0	26.0	25.0	24.1	23.5			
50	17.4	17.8	18.2	19.1	19.9	20.9	21.4	22.0	22.1	21.6	21.0	20.3	19.4	18.7	18.0	17.5			
55	13.1	13.3	13.6	14.2	14.8	15.5	15.9	16.3	16.5	16.0	15.7	15.2	14.6	14.0	13.4	13.2			
60	9.90	10.0	10.3	10.7	11.2	11.7	12.0	12.2	12.4	12.2	11.9	11.5	11.2	10.6	10.3	9.99			
65	7.24	7.32	7.51	7.88	8.26	8.70	8.89	9.15	9.26	9.06	8.83	8.49	8.20	7.83	7.54	7.32			
70	5.20	5.25	5.35	5.59	5.87	6.16	6.32	6.52	6.61	6.48	6.28	6.02	5.81	5.55	5.33	5.22			
75	3.14	3.19	3.29	3.52	3.79	4.05	4.21	4.37	4.47	4.34	4.16	3.90	3.71	3.42	3.23	3.15			
80	1.29	1.33	1.43	1.59	1.81	2.01	2.15	2.27	2.33	2.25	2.10	1.89	1.51	1.52	1.36	1.31			
85	0.11	0.11	0.21	0.26	0.34	0.44	0.58	0.62	0.67	0.64	0.54	0.46	0.22	0.27	0.16	0.14			
90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			

2.1.5 Electrical, Photometric and Chromaticity Measurements

Test date	2023-5-29	Test Ambient:	25.3
Test Orientation	As intended	Stabilization Time (min)	15
Model Number	DLG0011(G2NB)	CCT Setting	5000k

Electrical Measurement:

Sampel No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
#1	120	60	0.05195	6.041	0.9653

Chromaticity Measurement - Sphere-Spectroradiometer Method:

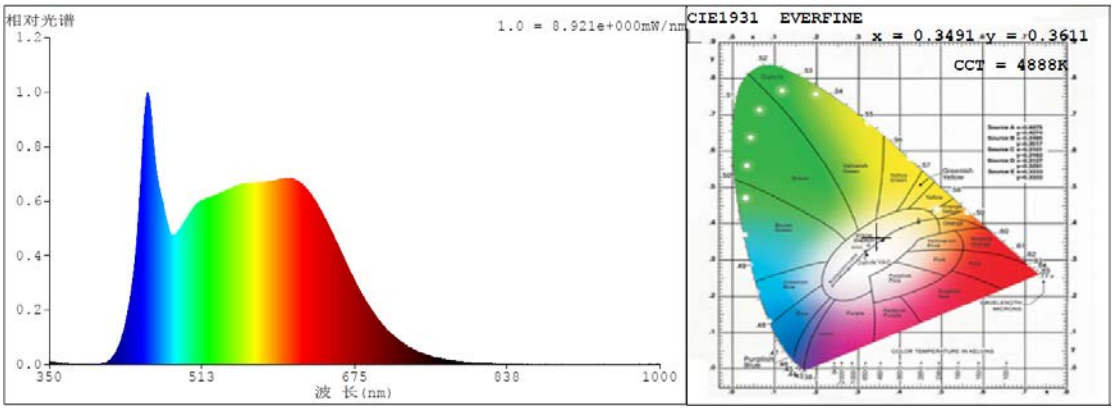
Parameter	Result
Test Voltage (V)	120
Frequency (Hz)	60
CCT (K)	4888
Duv	0.0031
Chromaticity (x, y)	x=0.3491, y=0.3611
Chromaticity (u', v')	u'=0.2105, v'=0.4898
Color Rendering Index (CRI)	92.4
R9	62

Special Color Rendering Indices			
R1	93	R9	62
R2	98	R10	95
R3	97	R11	90
R4	89	R12	70
R5	91	R13	95
R6	95	R14	99
R7	91	R15	89
R8	84	--	--

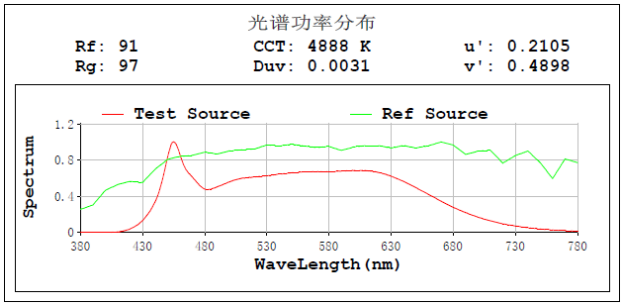
Photometric Measurement – Goniophotometer Method:

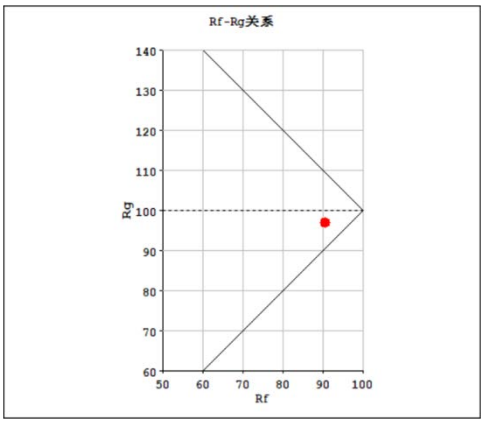
Parameter	Result
Test Voltage (V)	120
Frequency (Hz)	60
Total Luminous (lm)	439.92
Luminous Efficacy (lm/W)	72.86
Beam Angle (°)	21.1
Center Beam Candle Power (cd)	1999

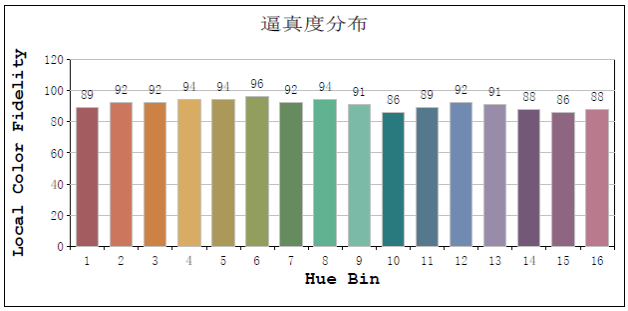
Spectral Power Distribution & Chromaticity Diagram

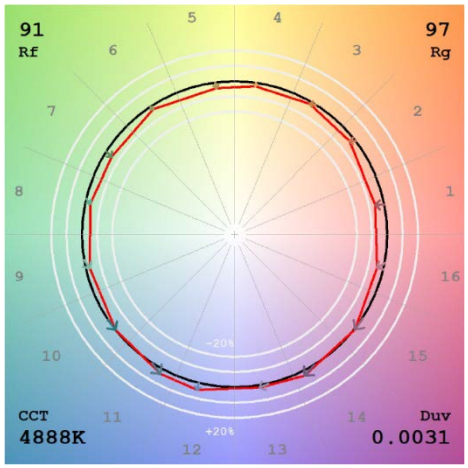


TM30







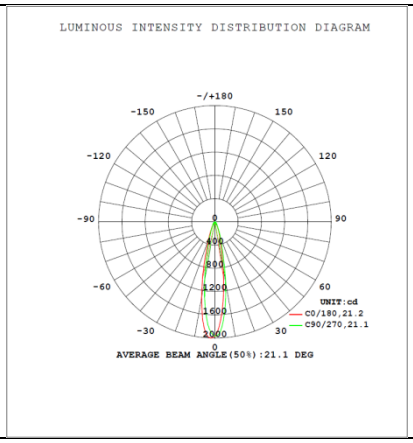


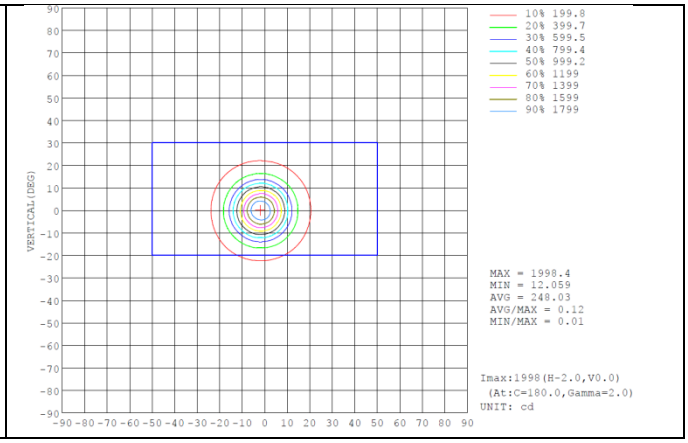
Zonal Lumen Tabulation

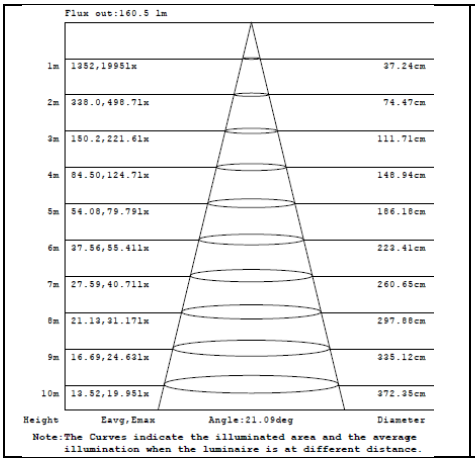
Zonal Lumen Summary		
Zone	**Lumens**	**% Luminaire**
0-30	359.0	81.60%
0-40	393.7	89.50%
0-60	427.6	97.20%
60-90	12.3	2.80%
70-100	4.4	1.00%
90-120	0.0	0.0%
0-90	439.9	100.0%
90-180	0.0	0.0%
0-180	439.9	100%

Lumens Per Zone					
Zone	**Lumens**	**% Total**	**Zone**	**Lumens**	**% Total**
0-10	140.3	31.90%	90-100	0	0%
10-20	148.7	33.80%	100-110	0	0%
20-30	69.9	15.90%	110-120	0	0%
30-40	34.8	7.90%	120-130	0	0%
40-50	20.7	4.70%	130-140	0	0%
50-60	13.2	3.0%	140-150	0	0%
60-70	7.9	1.8%	150-160	0	0%
70-80	4.0	0.9%	160-170	0	0%
80-90	0.4	0%	170-180	0	0%

Photometric Data







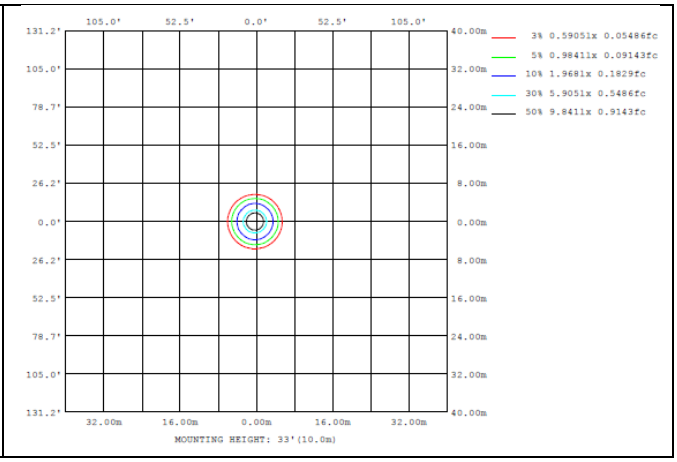


Table--1 UNIT: cd

C(DEG) / γ (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	1968	1968	1968	1968	1968	1968	1968	1968	1968	1968	1968	1968	1968	1968	1968	1968
5	1490	1515	1557	1630	1696	1773	1825	1883	1902	1878	1835	1740	1662	1594	1547	1508
10	831	854	900	987	1070	1172	1243	1308	1317	1266	1209	1115	1036	957	902	850
15	383	394	416	456	498	559	613	676	690	647	594	530	478	431	408	391
20	210	212	225	240	261	288	305	323	323	310	297	272	247	232	219	213
25	120	123	130	138	149	161	172	177	178	175	166	155	143	136	128	122
30	71.5	73.7	76.5	81.4	87.0	95.4	100	104	105	102	97.7	90.0	84.7	79.7	75.9	71.9
35	45.4	46.6	48.3	50.6	53.9	58.2	60.9	62.7	63.2	61.6	59.2	54.9	52.2	50.0	47.6	45.5
40	31.5	32.1	33.1	34.6	36.1	38.6	39.9	40.9	41.0	40.1	38.9	36.7	35.1	33.8	32.7	31.4
45	23.1	23.6	24.2	25.2	26.2	27.6	28.4	29.0	29.1	28.4	27.7	26.5	25.4	24.6	23.8	23.1
50	17.2	17.5	18.0	18.7	19.5	20.6	21.2	21.6	21.6	21.2	20.7	19.8	19.1	18.3	17.7	17.2
55	12.8	13.0	13.4	14.0	14.6	15.3	15.7	16.0	16.1	15.8	15.5	14.9	14.3	13.7	13.2	12.9
60	9.73	9.86	10.1	10.5	10.9	11.5	11.7	12.0	12.1	11.9	11.7	11.3	10.9	10.5	10.1	9.84
65	7.11	7.19	7.37	7.72	8.06	8.54	8.73	8.97	9.06	8.89	8.65	8.32	8.02	7.70	7.41	7.20
70	5.09	5.13	5.23	5.50	5.76	6.08	6.22	6.39	6.48	6.36	6.16	5.91	5.71	5.46	5.25	5.12
75	3.09	3.11	3.23	3.47	3.71	4.00	4.13	4.29	4.37	4.24	4.07	3.82	3.64	3.37	3.18	3.10
80	1.27	1.30	1.40	1.55	1.77	1.98	2.11	2.22	2.29	2.20	2.06	1.86	1.49	1.48	1.34	1.27
85	0.11	0.11	0.21	0.25	0.33	0.43	0.56	0.60	0.64	0.63	0.53	0.45	0.23	0.26	0.15	0.14
90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Model Number	CCT setting	Test Voltage(V)	Flux(lm)	P(W)	Luminous Efficacy lm/W
DLG0011(G2NB)	2700K setting	120	377.22	6.03	62.56
	3000K setting	120	416.18	5.88	70.81
	3500K setting	120	438.98	5.75	76.36
	4000K setting	120	449.28	5.82	77.19
	5000K setting	120	439.92	6.04	72.86