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) :

DLG0014(GR2)

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

Type of Luminaire: Downlights

Report Date: 2023-6-17

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	2023-6-17	**Test Ambient:**	25.3
Test Orientation	As intended	**Stabilization Time (min)**	15
Model Number	DLG0014(GR2)	**CCT Setting**	2700k

Electrical Measurement:

Sampel No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
#1	120	60	0.05190	6.023	0.9634

Chromaticity Measurement – Sphere-Spectroradiometer Method:

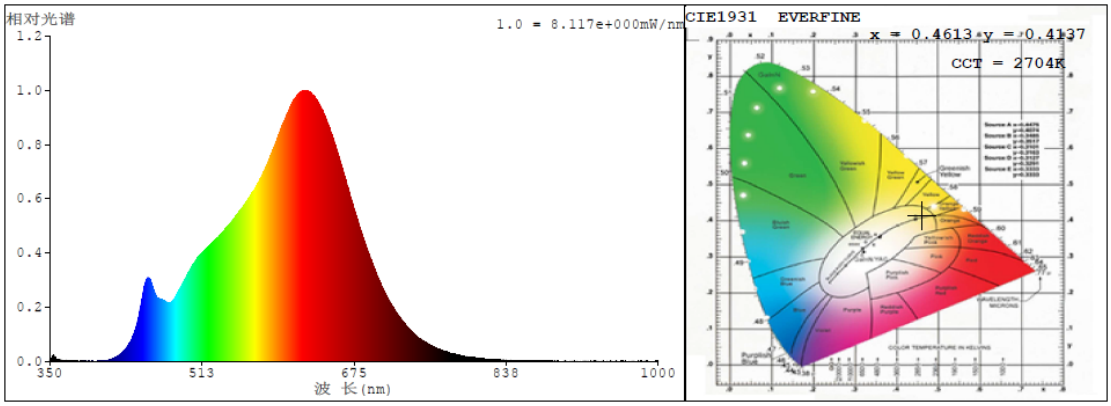
Parameter	Result
Test Voltage (V)	120
Frequency (Hz)	60
CCT (K)	2704
Duv	0.00103
Chromaticity (x, y)	x=0.4613, y=0.4137
Chromaticity (u', v')	u'=0.2620, v'=0.5288
Color Rendering Index (CRI)	94.2
R9	63

Special Color Rendering Indices			
R1	95	R9	63
R2	99	R10	97
R3	98	R11	98
R4	95	R12	89
R5	96	R13	97
R6	97	R14	99
R7	91	R15	90
R8	82	--	--

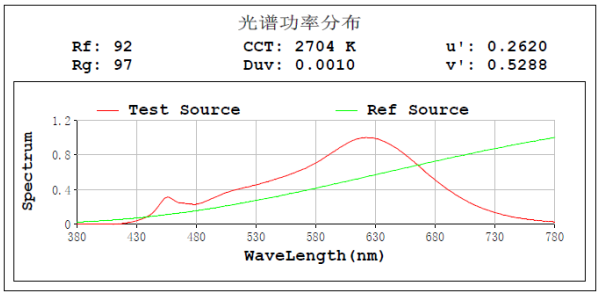
Photometric Measurement – Goniophotometer Method:

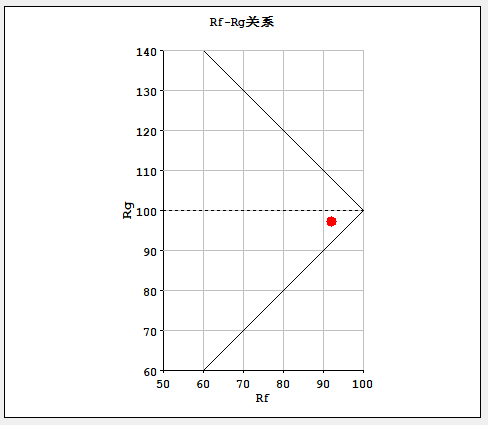
Parameter	Result
Test Voltage (V)	120
Frequency (Hz)	60
Total Luminous (lm)	377.08
Luminous Efficacy (lm/W)	62.63
Beam Angle (°)	38.0
Center Beam Candle Power (cd)	816.0

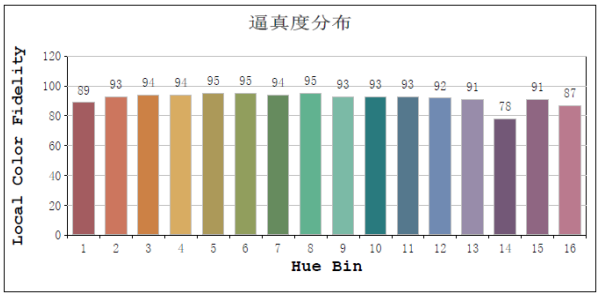
Spectral Power Distribution & Chromaticity Diagram

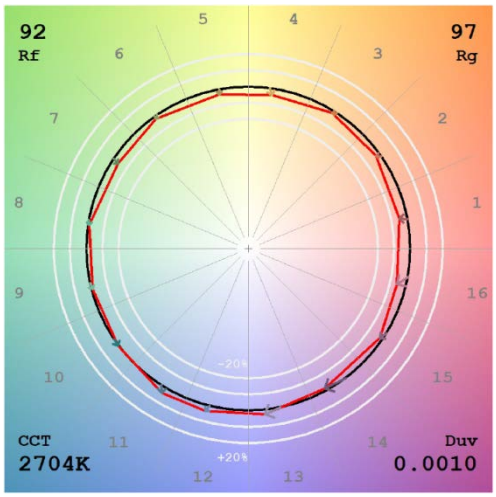


TM30







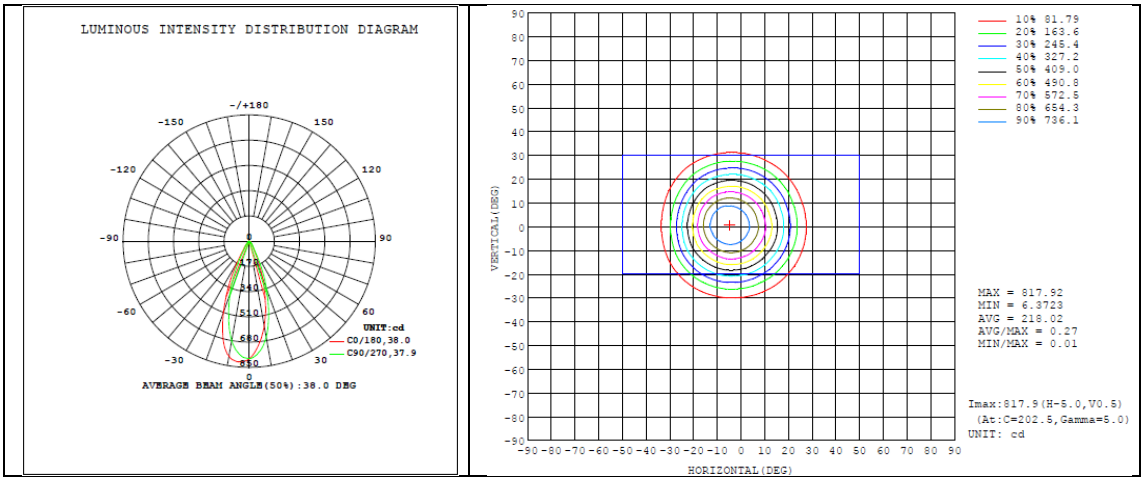


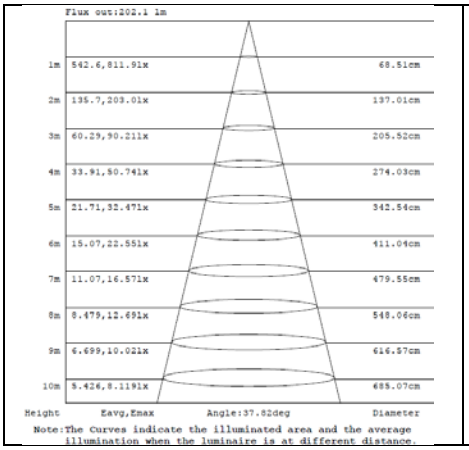
Zonal Lumen Tabulation

Zonal Lumen Summary		
Zone	**Lumens**	**% Luminaire**
0-30	316.0	83.8%
0-40	349.9	92.8%
0-60	372.2	98.7%
60-90	4.9	1.2%
70-100	2.3	0.6%
90-120	0.0	0.0%
0-90	377.1	100.0%
90-180	0.0	0.0%
0-180	377.1	100.0%

Lumens Per Zone					
Zone	**Lumens**	**% Total**	**Zone**	**Lumens**	**% Total**
0-10	69.8	18.5%	90-100	0	0%
10-20	146.7	38.9%	100-110	0	0%
20-30	99.5	26.4%	110-120	0	0%
30-40	33.9	9.0%	120-130	0	0%
40-50	15.5	4.1%	130-140	0	0%
50-60	6.8	1.8%	140-150	0	0%
60-70	2.6	0.7%	150-160	0	0%
70-80	1.9	0.5%	160-170	0	0%
80-90	0.4	0.1%	170-180	0	0%

Photometric Data





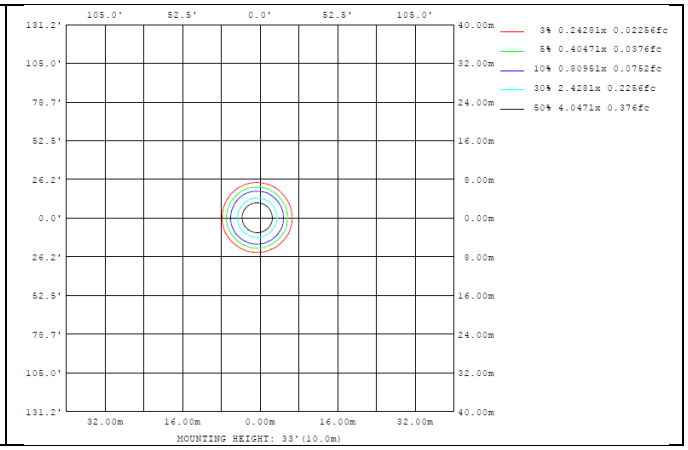


Table--1 UNIT: cd

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	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790			
5	706	704	715	730	750	774	792	810	816	816	809	784	765	742	723	709			
10	582	584	595	621	658	700	736	772	785	784	767	724	684	639	607	586			
15	420	423	433	466	508	562	607	658	684	679	651	594	541	492	455	426			
20	268	268	279	305	343	390	438	489	509	504	480	426	383	337	303	273			
25	128	125	136	157	195	234	275	316	324	314	305	268	229	193	158	133			
30	57.1	57.7	60.4	66.9	78.4	97.2	127	152	156	155	151	126	95.7	75.8	64.4	58.5			
35	36.9	37.1	38.1	40.6	44.7	50.5	57.2	65.2	67.3	68.0	65.6	58.2	50.9	45.0	40.3	37.4			
40	25.2	25.3	25.9	27.1	29.0	32.0	35.6	39.7	40.6	40.8	40.1	36.5	33.0	29.6	27.0	25.2			
45	16.4	16.5	16.7	17.3	18.1	19.5	20.9	22.6	22.7	22.9	23.3	21.5	19.9	18.1	17.1	16.2			
50	10.6	10.7	10.8	11.0	11.3	11.8	12.3	13.0	12.7	12.7	13.0	12.3	11.7	11.1	10.7	10.4			
55	7.25	7.37	7.34	7.48	7.56	7.74	7.84	8.13	7.75	7.70	7.97	7.77	7.58	7.34	7.26	7.12			
60	4.28	4.32	4.28	4.38	4.41	4.55	4.63	4.82	4.66	4.67	4.87	4.76	4.65	4.47	4.35	4.21			
65	2.63	2.61	2.62	2.56	2.56	2.53	2.55	2.63	2.55	2.58	2.67	2.61	2.56	2.52	2.49	2.57			
70	2.24	2.20	2.22	2.08	2.04	1.90	1.84	1.74	1.68	1.71	1.71	1.80	1.85	1.99	2.05	2.18			
75	1.82	1.79	1.80	1.72	1.72	1.61	1.59	1.49	1.45	1.48	1.47	1.55	1.57	1.69	1.70	1.78			
80	1.14	1.10	1.12	1.08	1.13	1.09	1.10	1.06	1.03	1.07	1.06	1.10	1.07	1.10	1.08	1.10			
85	0.38	0.34	0.36	0.35	0.42	0.41	0.48	0.46	0.45	0.48	0.46	0.48	0.41	0.42	0.35	0.36			
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	2023-6-17	Test Ambient:	25.3
Test Orientation	As intended	Stabilization Time (min)	15
Model Number	DLG0014(GR2)	CCT Setting	3000k

Electrical Measurement:

Sampel No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
#1	120	60	0.05068	5.870	0.9615

Chromaticity Measurement - Sphere-Spectroradiometer Method:

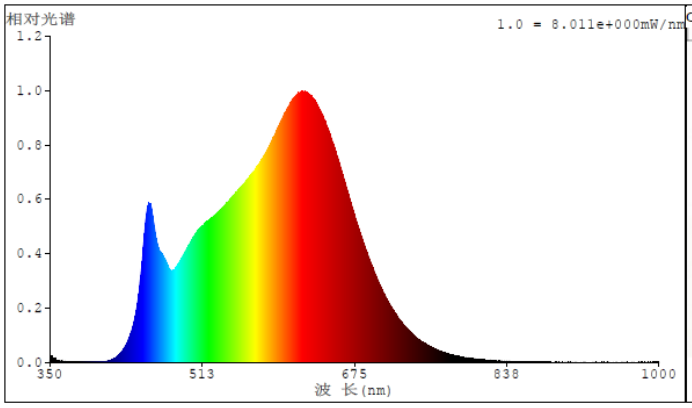
Parameter	Result
Test Voltage (V)	120
Frequency (Hz)	60
CCT (K)	3140
Duv	-0.00109
Chromaticity (x, y)	x=0.4259, y=0.3973
Chromaticity (u', v')	u'=0.2463, v'=0.5170
Color Rendering Index (CRI)	94.6
R9	71

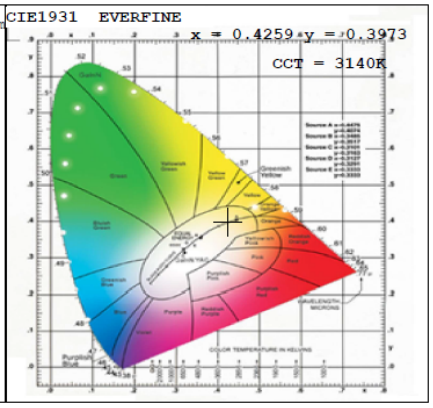
Special Color Rendering Indices			
R1	97	R9	71
R2	99	R10	98
R3	97	R11	98
R4	95	R12	83
R5	97	R13	99
R6	95	R14	99
R7	91	R15	94
R8	86	--	--

Photometric Measurement – Goniophotometer Method:

Parameter	Result
Test Voltage (V)	120
Frequency (Hz)	60
Total Luminous (lm)	415.50
Luminous Efficacy (lm/W)	70.82
Beam Angle (°)	38.0
Center Beam Candle Power (cd)	896.5

Spectral Power Distribution & Chromaticity Diagram





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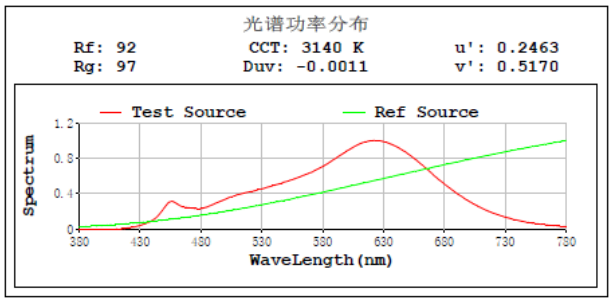
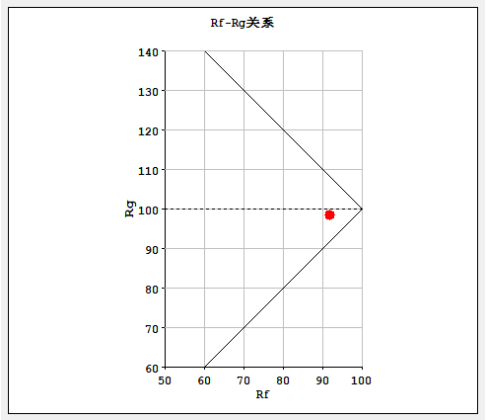
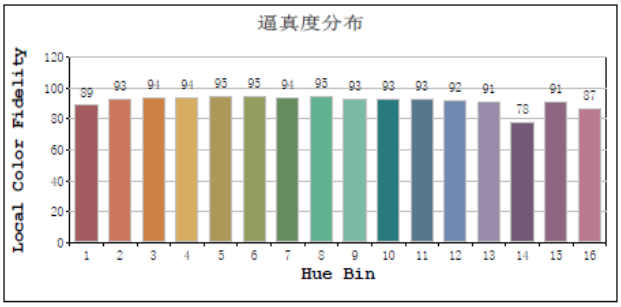
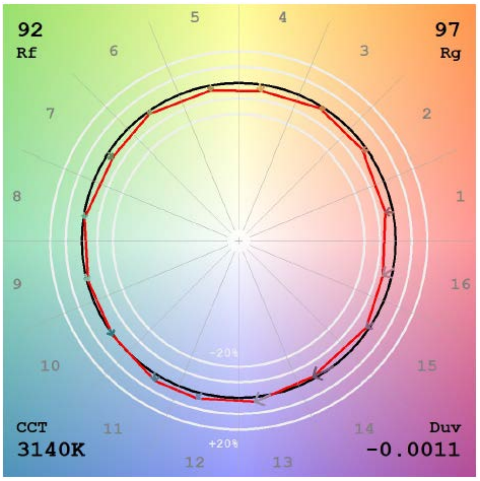






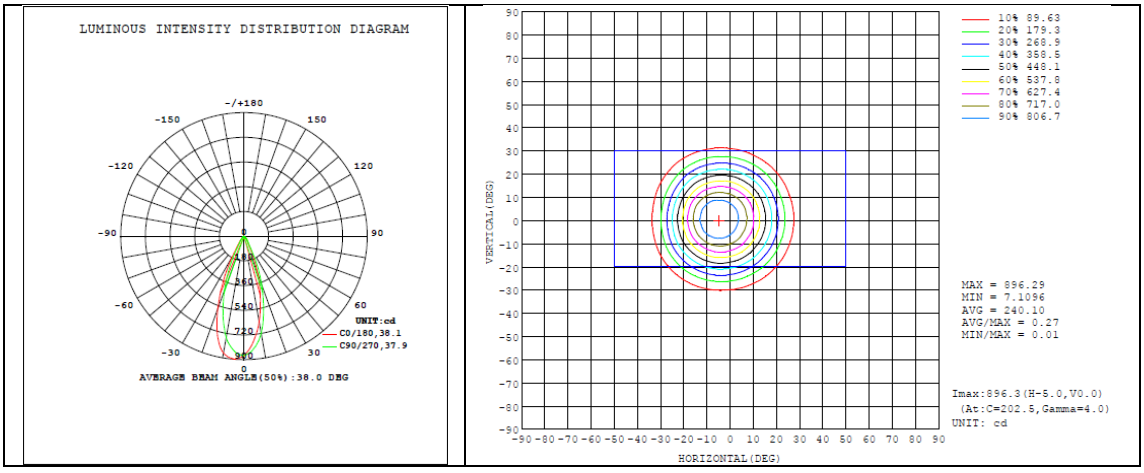


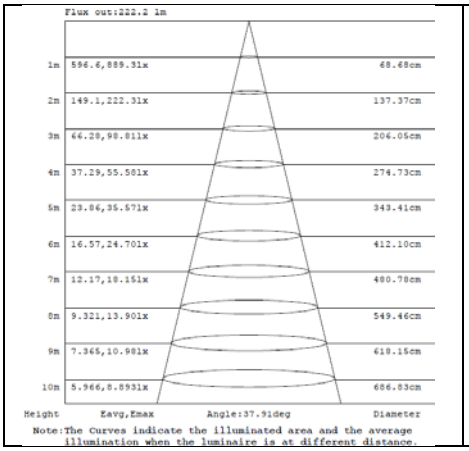
Zonal Lumen Tabulation

Zonal Lumen Summary		
Zone	**Lumens**	**% Luminaire**
0-30	348.2	83.8%
0-40	385.2	92.7%
0-60	410.1	98.7%
60-90	5.4	1.2%
70-100	2.5	0.6%
90-120	0.0	0.0%
0-90	415.5	100.0%
90-180	0.0	0.0%
0-180	415.5	100.0%

Lumens Per Zone					
Zone	**Lumens**	**% Total**	**Zone**	**Lumens**	**% Total**
0-10	76.9	18.5%	90-100	0	0%
10-20	161.2	38.8%	100-110	0	0%
20-30	110.1	26.5%	110-120	0	0%
30-40	37.0	8.9%	120-130	0	0%
40-50	17.5	4.2%	130-140	0	0%
50-60	7.5	1.8%	140-150	0	0%
60-70	2.9	0.7%	150-160	0	0%
70-80	2.1	0.5%	160-170	0	0%
80-90	0.4	0.1%	170-180	0	0%

Photometric Data





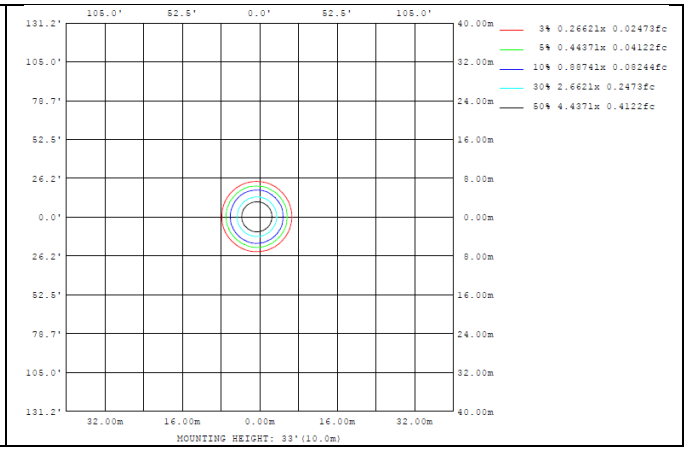


Table--1 **UNIT: cd**

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	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	2023-6-17	Test Ambient:	25.3
Test Orientation	As intended	Stabilization Time (min)	15
Model Number	DLG0014(GR2)	CCT Setting	3500k

Electrical Measurement:

Sampel No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
#1	120	60	0.04959	5.733	0.9596

Chromaticity Measurement - Sphere-Spectroradiometer Method:

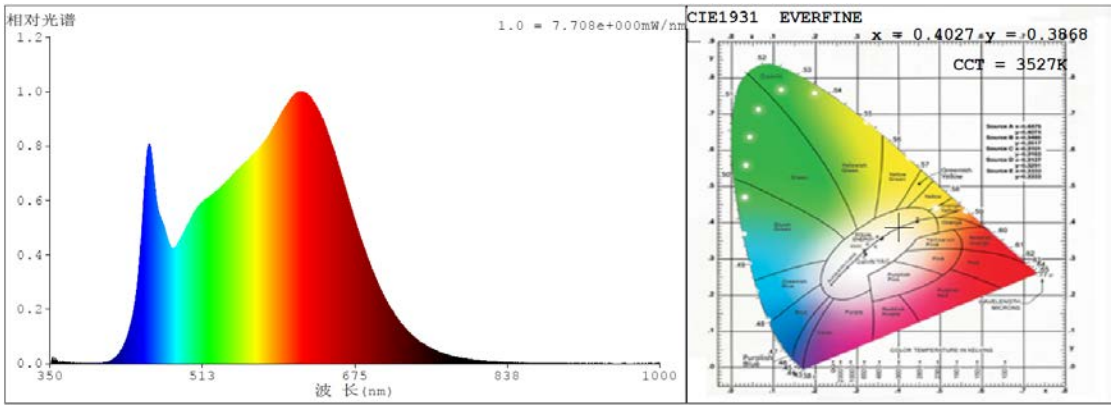
Parameter	Result
Test Voltage (V)	120
Frequency (Hz)	60
CCT (K)	3527
Duv	-0.00114
Chromaticity (x, y)	x=0.4027, y=0.3868
Chromaticity (u', v')	u'=0.2356, v'=0.5092
Color Rendering Index (CRI)	94.7
R9	74

Special Color Rendering Indices			
R1	97	R9	74
R2	99	R10	98
R3	97	R11	97
R4	94	R12	80
R5	96	R13	99
R6	95	R14	99
R7	92	R15	94
R8	87	--	--

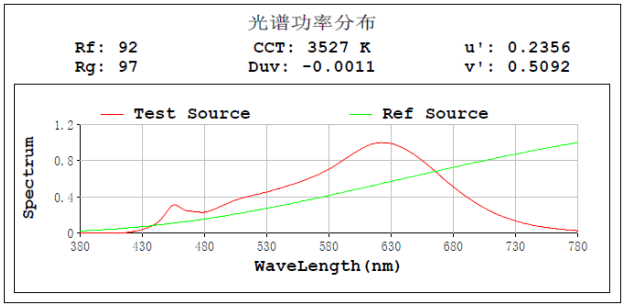
Photometric Measurement – Goniophotometer Method:

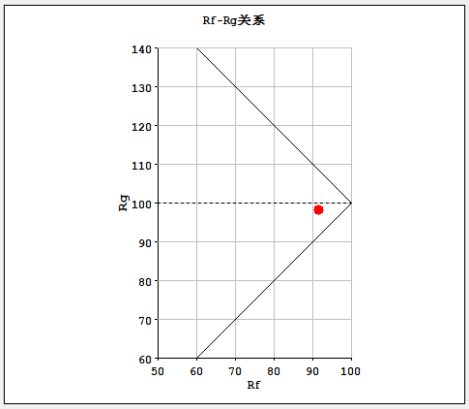
Parameter	Result
Test Voltage (V)	120
Frequency (Hz)	60
Total Luminous (lm)	438.17
Luminous Efficacy (lm/W)	76.43
Beam Angle (°)	38.0
Center Beam Candle Power (cd)	947.1

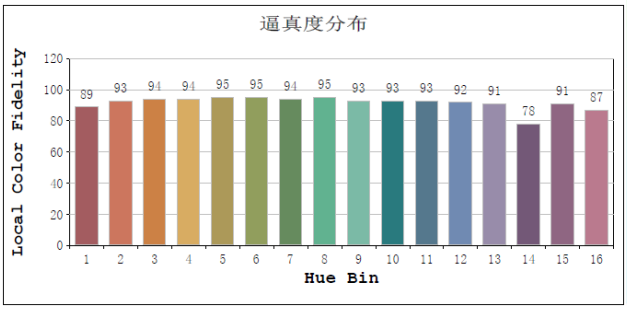
Spectral Power Distribution & Chromaticity Diagram

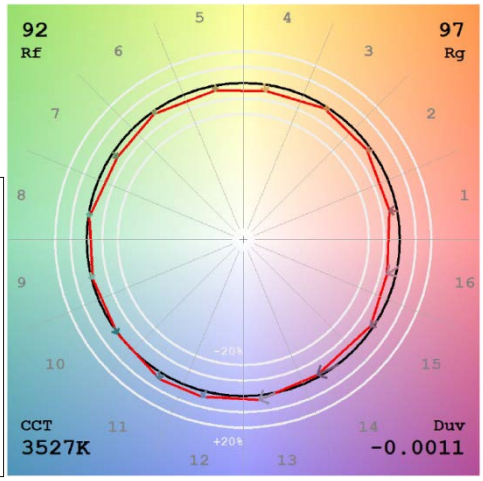


TM30







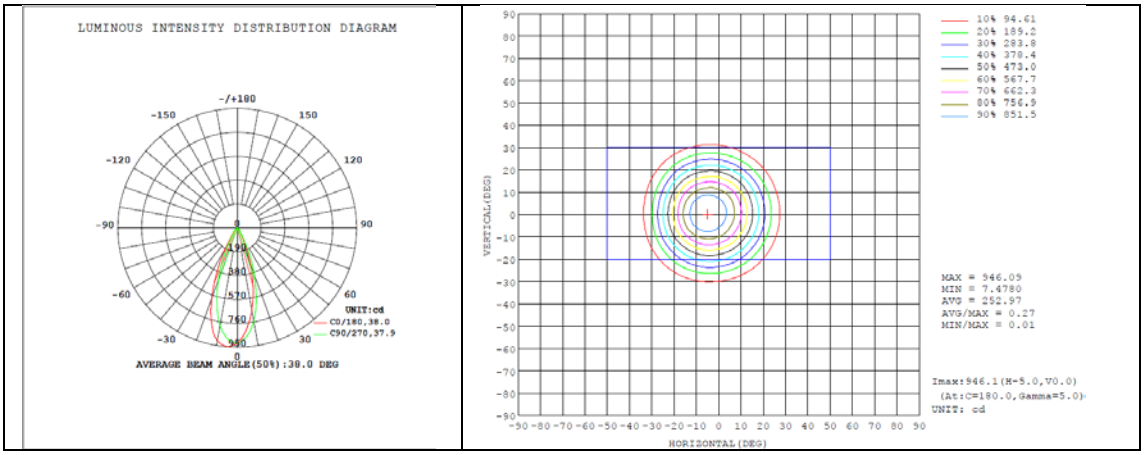


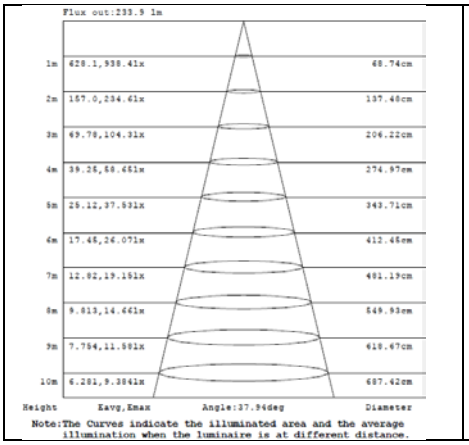
Zonal Lumen Tabulation

Zonal Lumen Summary		
Zone	**Lumens**	**% Luminaire**
0-30	366.7	83.7%
0-40	406.2	92.7%
0-60	432.5	98.7%
60-90	5.7	1.2%
70-100	2.6	0.6%
90-120	0.0	0.0%
0-90	438.2	100.0%
90-180	0.0	0.0%
0-180	438.2	100.0%

Lumens Per Zone					
Zone	**Lumens**	**% Total**	**Zone**	**Lumens**	**% Total**
0-10	80.6	18.4%	90-100	0	0%
10-20	170.0	38.8%	100-110	0	0%
20-30	116.1	26.5%	110-120	0	0%
30-40	39.4	9.0%	120-130	0	0%
40-50	18.0	4.1%	130-140	0	0%
50-60	8.3	1.9%	140-150	0	0%
60-70	3.1	0.7%	150-160	0	0%
70-80	2.2	0.5%	160-170	0	0%
80-90	0.4	0.1%	170-180	0	0%

Photometric Data





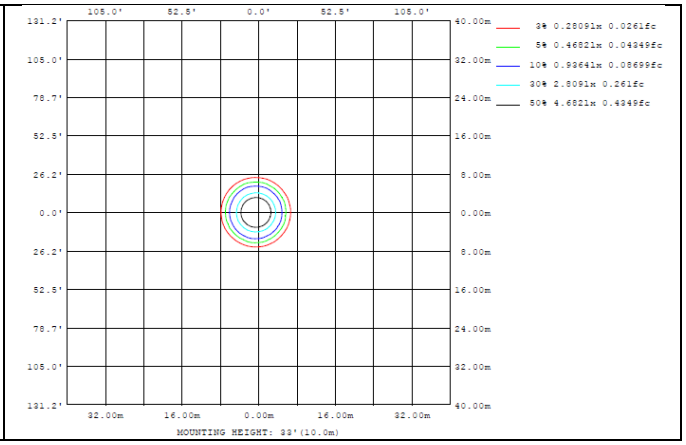


Table--1 **UNIT: cd**

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	915	915	915	915	915	915	915	915	915	915	915	915	915	915	915	915			
5	815	814	822	843	866	895	920	939	947	942	929	908	886	860	841	822			
10	666	667	680	717	757	808	858	900	914	907	882	836	789	748	712	680			
15	483	482	498	536	584	649	715	772	792	783	742	685	627	576	533	496			
20	309	309	322	357	399	456	516	572	592	587	551	491	442	390	351	318			
25	146	142	156	184	228	276	322	366	379	371	353	310	266	221	183	154			
30	66.2	65.9	69.9	78.6	92.2	116	149	178	185	185	175	144	111	87.9	75.4	68.6			
35	42.8	42.8	44.2	47.6	52.4	59.5	67.7	76.3	79.3	80.6	75.8	67.3	59.1	52.3	47.3	43.8			
40	29.2	29.2	30.1	31.8	34.1	37.8	42.2	46.3	47.6	48.1	46.6	42.4	38.3	34.4	31.7	29.6			
45	18.9	19.1	19.4	20.3	21.3	23.0	24.8	26.6	26.8	27.1	26.9	24.9	23.1	21.1	19.9	19.0			
50	12.3	12.4	12.6	13.0	13.3	13.9	14.5	15.3	15.0	15.1	15.1	14.3	13.5	12.8	12.5	12.2			
55	8.44	8.53	8.55	8.78	8.91	9.14	9.25	9.52	9.19	9.16	9.28	9.06	8.81	8.58	8.49	8.34			
60	4.99	5.01	5.02	5.17	5.21	5.38	5.49	5.67	5.52	5.56	5.67	5.57	5.42	5.21	5.10	4.94			
65	3.09	3.07	3.08	3.04	3.03	3.02	3.04	3.10	3.05	3.11	3.14	3.05	3.00	2.94	2.95	3.02			
70	2.64	2.60	2.60	2.47	2.41	2.25	2.18	2.06	2.00	2.03	2.02	2.13	2.19	2.35	2.43	2.57			
75	2.13	2.10	2.11	2.05	2.03	1.92	1.88	1.79	1.71	1.76	1.74	1.84	2.10	1.99	2.01	2.09			
80	1.34	1.30	1.32	1.31	1.34	1.30	1.33	1.28	1.25	1.29	1.26	1.29	1.28	1.31	1.28	1.31			
85	0.44	0.40	0.45	0.45	0.53	0.52	0.59	0.57	0.56	0.61	0.56	0.58	0.51	0.50	0.43	0.43			
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	2023-6-17	Test Ambient:	25.3
Test Orientation	As intended	Stabilization Time (min)	15
Model Number	DLG0014(GR2)	CCT Setting	4000k

Electrical Measurement:

Sampel No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
#1	120	60	0.05014	5.802	0.9606

Chromaticity Measurement - Sphere-Spectroradiometer Method:

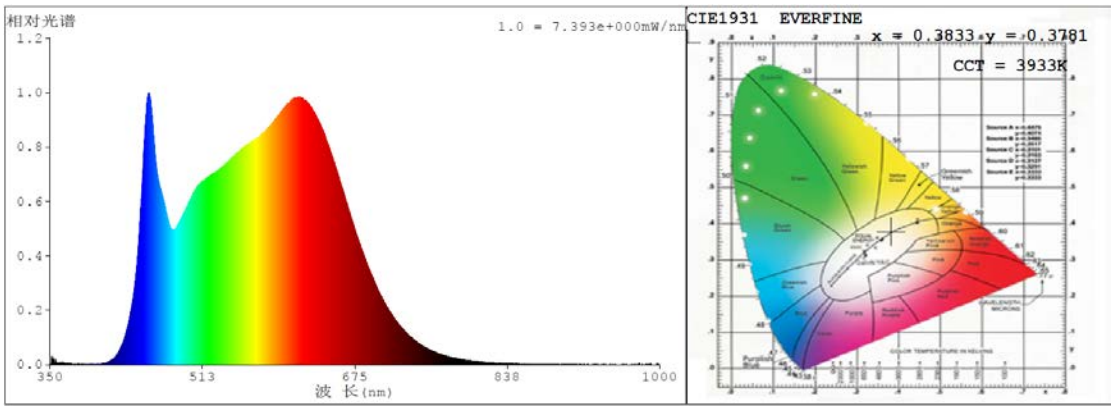
Parameter	Result
Test Voltage (V)	120
Frequency (Hz)	60
CCT (K)	3933
Duv	-0.000195
Chromaticity (x, y)	x=0.3833, y=0.3781
Chromaticity (u', v')	u'=0.2264, v'=0.5026
Color Rendering Index (CRI)	94.6
R9	73

Special Color Rendering Indices			
R1	97	R9	73
R2	99	R10	99
R3	97	R11	95
R4	93	R12	77
R5	95	R13	99
R6	96	R14	99
R7	92	R15	94
R8	87	--	--

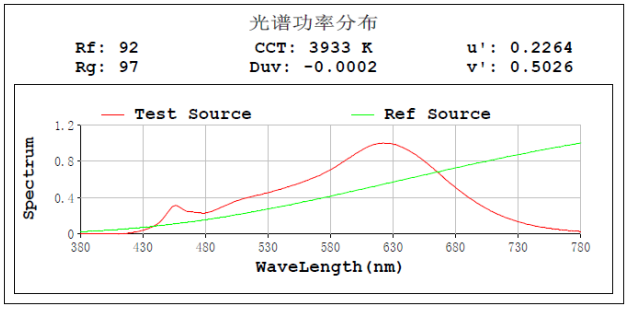
Photometric Measurement – Goniophotometer Method:

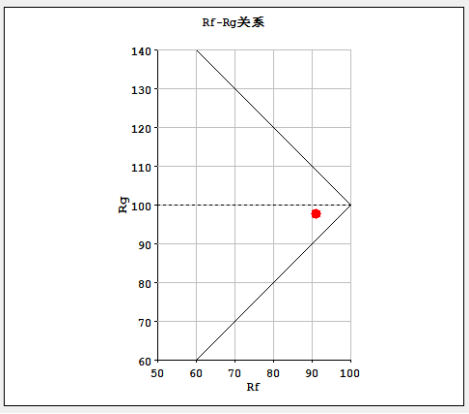
Parameter	Result
Test Voltage (V)	120
Frequency (Hz)	60
Total Luminous (lm)	447.08
Luminous Efficacy (lm/W)	77.06
Beam Angle (°)	38.0
Center Beam Candle Power (cd)	966.3

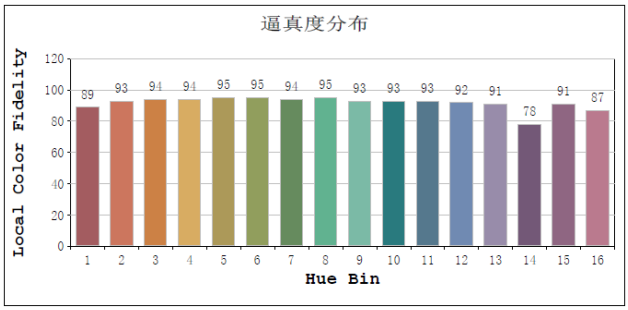
Spectral Power Distribution & Chromaticity Diagram

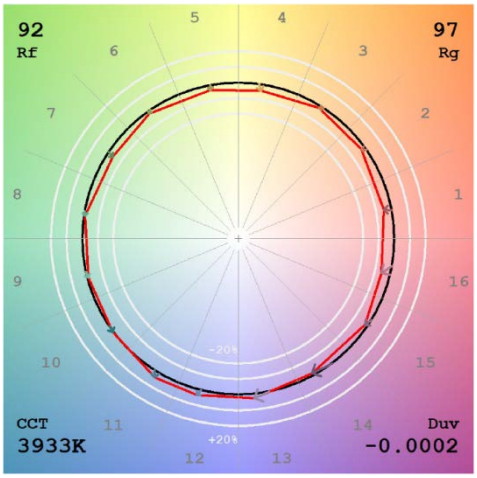


TM30







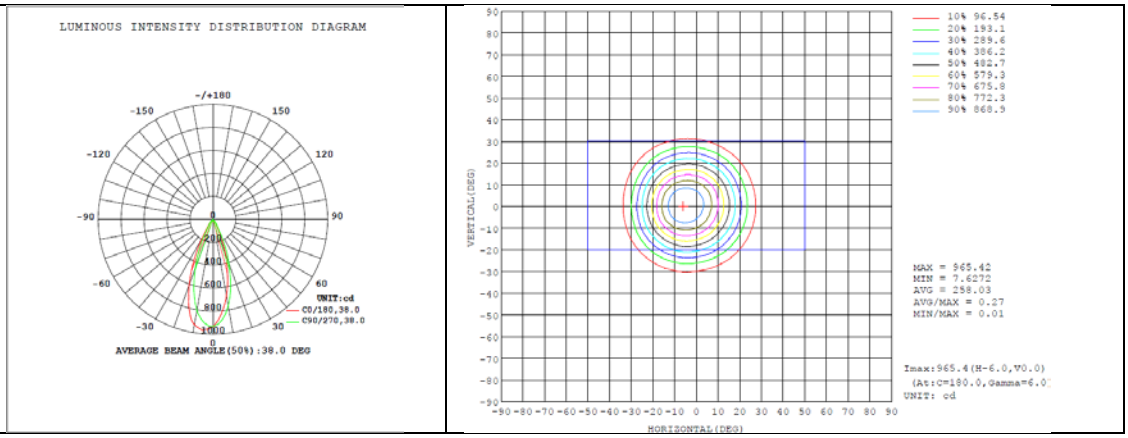


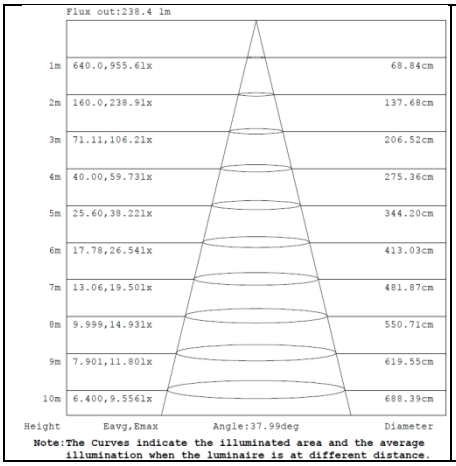
Zonal Lumen Tabulation

Zonal Lumen Summary		
Zone	**Lumens**	**% Luminaire**
0-30	374.2	83.7%
0-40	414.4	92.7%
0-60	441.3	98.7%
60-90	5.8	1.2%
70-100	2.7	0.6%
90-120	0.0	0.0%
0-90	447.1	100.0%
90-180	0.0	0.0%
0-180	447.1	100.0%

Lumens Per Zone					
Zone	**Lumens**	**% Total**	**Zone**	**Lumens**	**% Total**
0-10	82.3	18.4%	90-100	0	0%
10-20	173.0	38.7%	100-110	0	0%
20-30	118.9	26.6%	110-120	0	0%
30-40	40.2	9.0%	120-130	0	0%
40-50	18.3	4.1%	130-140	0	0%
50-60	8.5	1.9%	140-150	0	0%
60-70	3.1	0.7%	150-160	0	0%
70-80	2.2	0.5%	160-170	0	0%
80-90	0.4	0.1%	170-180	0	0%

Photometric Data





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

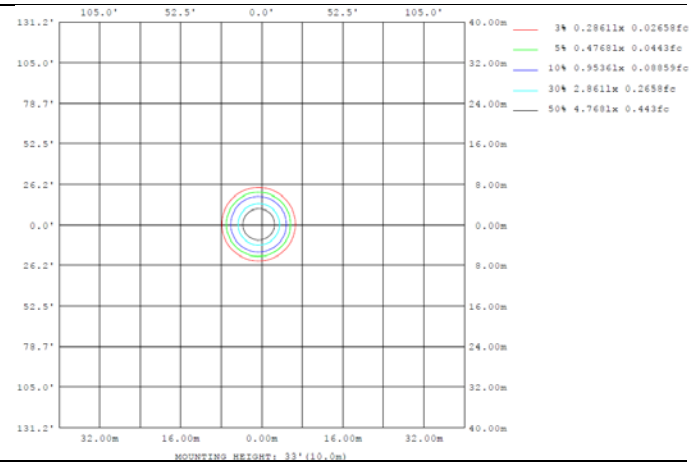


Table--1 UNIT: cd

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	931	931	931	931	931	931	931	931	931	931	931	931	931	931	931	931			
5	827	827	838	856	881	910	936	955	965	963	949	926	903	875	856	838			
10	676	676	695	727	766	822	876	917	930	922	898	853	807	764	727	691			
15	490	492	507	547	592	661	731	792	807	797	759	696	641	589	544	504			
20	314	315	329	363	407	466	527	586	606	597	561	500	452	397	357	324			
25	148	144	160	189	233	282	329	374	389	380	362	316	271	225	187	157			
30	67.3	67.1	71.5	80.2	94.3	118	153	182	191	190	179	147	113	89.7	77.0	69.9			
35	43.6	43.6	45.2	48.7	53.5	61.0	69.2	78.1	81.5	82.3	77.4	68.8	60.2	53.4	48.2	44.7			
40	29.8	29.8	30.8	32.5	34.9	38.7	43.3	47.5	49.0	49.4	47.7	43.3	39.1	35.2	32.4	30.2			
45	19.3	19.4	20.0	20.8	21.8	23.5	25.4	27.3	27.5	27.7	27.6	25.4	23.5	21.5	20.4	19.4			
50	12.5	12.7	12.9	13.3	13.6	14.2	14.9	15.7	15.5	15.5	15.4	14.6	13.8	13.1	12.7	12.4			
55	8.59	8.70	8.77	9.01	9.10	9.34	9.48	9.75	9.43	9.38	9.52	9.27	9.02	8.75	8.66	8.50			
60	5.07	5.10	5.15	5.30	5.32	5.51	5.62	5.81	5.66	5.71	5.82	5.69	5.55	5.31	5.19	5.03			
65	3.15	3.14	3.15	3.10	3.10	3.09	3.12	3.19	3.14	3.19	3.22	3.12	3.05	3.01	3.01	3.07			
70	2.70	2.65	2.67	2.53	2.47	2.30	2.24	2.11	2.05	2.09	2.08	2.18	2.24	2.41	2.49	2.63			
75	2.18	2.15	2.17	2.10	2.08	1.97	1.93	1.81	1.76	1.80	1.78	1.88	1.92	2.03	2.06	2.14			
80	1.37	1.33	1.36	1.35	1.37	1.34	1.36	1.31	1.28	1.32	1.29	1.33	1.30	1.33	1.31	1.33			
85	0.45	0.40	0.46	0.47	0.54	0.55	0.61	0.59	0.59	0.63	0.59	0.59	0.53	0.51	0.44	0.44			
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	2023-6-17	Test Ambient:	25.3
Test Orientation	As intended	Stabilization Time (min)	15
Model Number	DLG0014(GR2)	CCT Setting	5000k

Electrical Measurement:

Sampel No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
#1	120	60	0.05190	6.023	0.9634

Chromaticity Measurement - Sphere-Spectroradiometer Method:

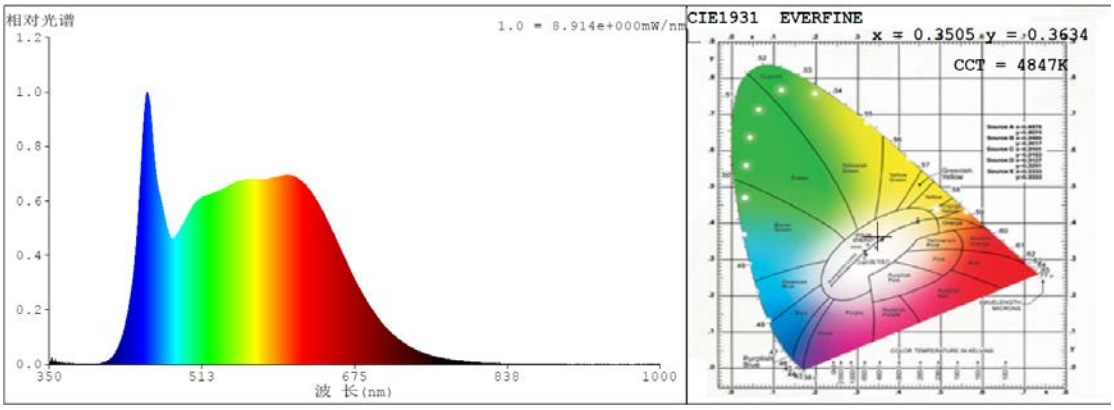
Parameter	Result
Test Voltage (V)	120
Frequency (Hz)	60
CCT (K)	4847
Duv	0.00373
Chromaticity (x, y)	x=0.3505, y=0.3634
Chromaticity (u', v')	u'=0.2105, v'=0.4911
Color Rendering Index (CRI)	92.2
R9	60

Special Color Rendering Indices			
R1	93	R9	60
R2	97	R10	93
R3	98	R11	90
R4	89	R12	70
R5	91	R13	94
R6	95	R14	99
R7	92	R15	89
R8	83	--	--

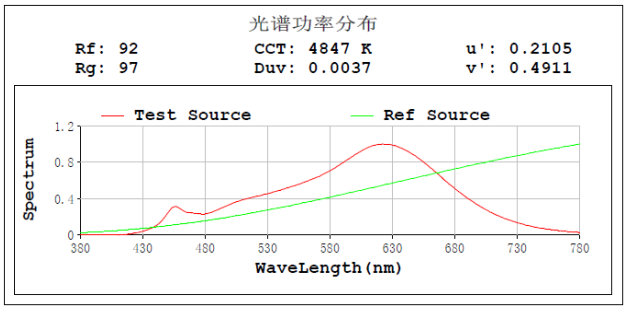
Photometric Measurement – Goniophotometer Method:

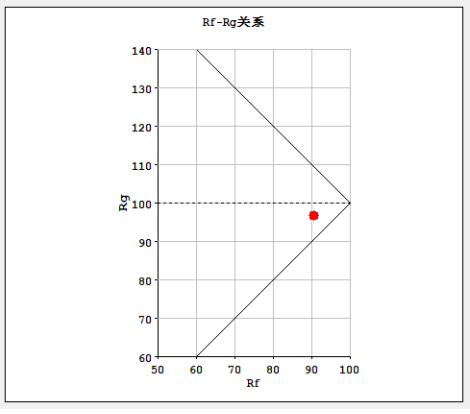
Parameter	Result
Test Voltage (V)	120
Frequency (Hz)	60
Total Luminous (lm)	435.79
Luminous Efficacy (lm/W)	72.38
Beam Angle (°)	38.1
Center Beam Candle Power (cd)	936.9

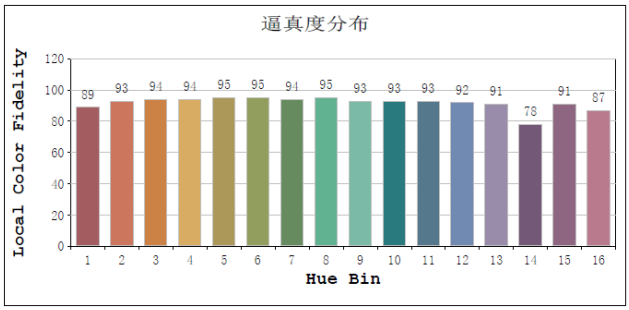
Spectral Power Distribution & Chromaticity Diagram

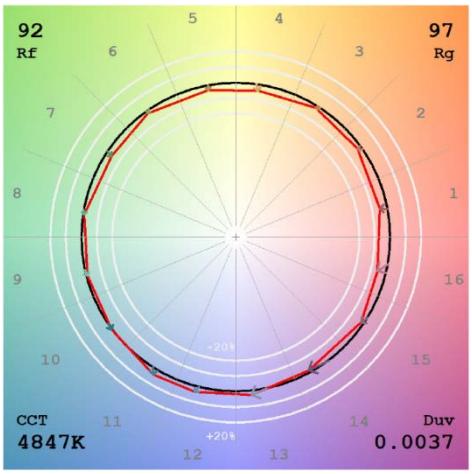


TM30







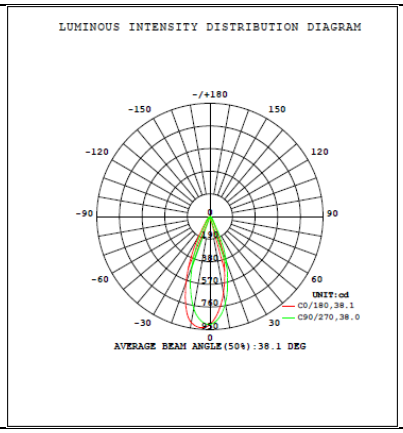


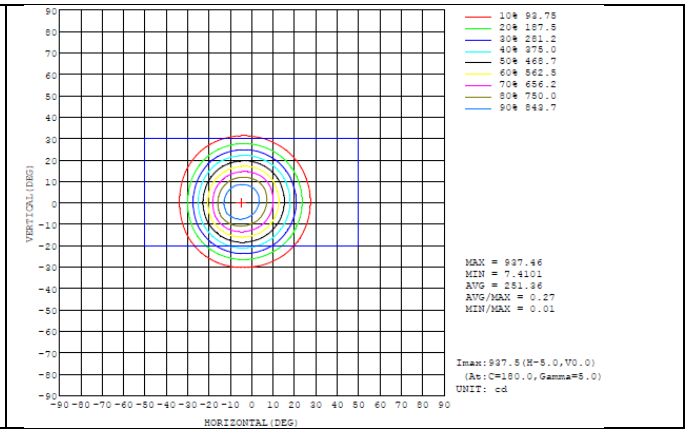
Zonal Lumen Tabulation

Zonal Lumen Summary		
Zone	**Lumens**	**% Luminaire**
0-30	364.3	83.6%
0-40	404.0	92.7%
0-60	430.1	98.7%
60-90	5.7	1.2%
70-100	2.6	0.6%
90-120	0.0	0.0%
0-90	435.8	100.0%
90-180	0.0	0.0%
0-180	435.8	100.0%

Lumens Per Zone					
Zone	**Lumens**	**% Total**	**Zone**	**Lumens**	**% Total**
0-10	79.7	18.3%	90-100	0	0%
10-20	168.7	38.7%	100-110	0	0%
20-30	115.9	26.6%	110-120	0	0%
30-40	39.7	9.1%	120-130	0	0%
40-50	17.9	4.1%	130-140	0	0%
50-60	8.3	1.9%	140-150	0	0%
60-70	3.1	0.7%	150-160	0	0%
70-80	2.2	0.5%	160-170	0	0%
80-90	0.4	0.1%	170-180	0	0%

Photometric Data





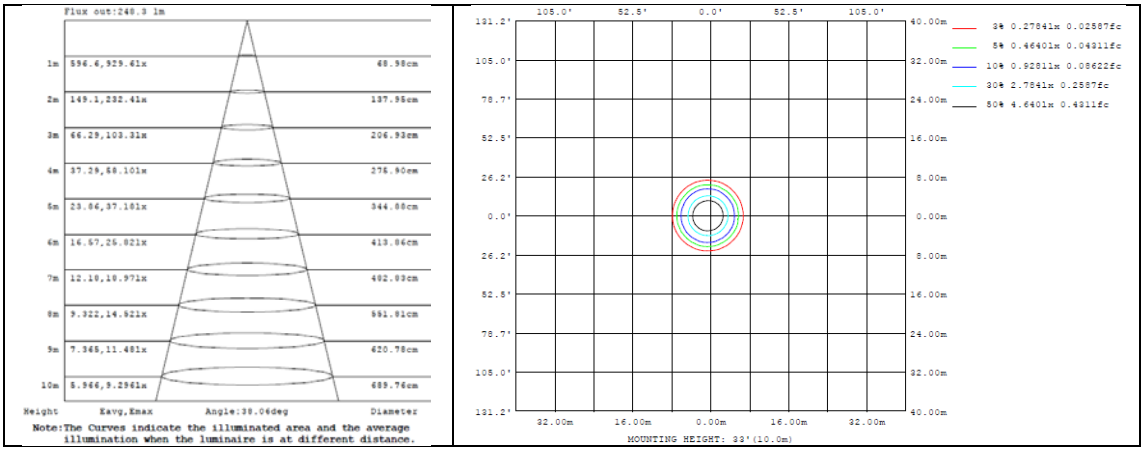


Table--1 UNIT: cd

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	906	906	906	906	906	906	906	906	906	906	906	906	906	906	906	906			
5	803	801	810	830	856	885	911	930	937	934	921	900	879	855	835	816			
10	654	653	670	703	742	799	854	896	905	894	867	826	786	750	712	673			
15	475	475	490	527	575	642	718	779	784	769	731	674	627	580	532	490			
20	306	307	322	354	398	456	518	577	588	580	543	488	441	388	347	315			
25	144	140	156	184	228	277	323	366	381	371	353	308	264	220	181	152			
30	65.5	65.3	69.6	78.1	92.8	117	152	181	188	187	174	144	111	87.9	75.3	68.3			
35	42.6	42.5	44.1	47.5	52.5	60.0	68.6	77.1	79.8	80.4	75.5	67.1	58.5	52.4	47.3	43.7			
40	29.0	29.1	30.0	31.7	34.2	38.0	42.7	46.9	47.8	48.2	46.5	42.1	38.2	34.5	31.7	29.5			
45	18.8	18.9	19.4	20.3	21.4	23.1	25.2	26.9	26.9	27.1	26.8	24.8	23.0	21.0	19.9	18.9			
50	12.2	12.3	12.6	13.0	13.3	14.0	14.7	15.4	15.2	15.2	15.1	14.3	13.5	12.8	12.4	12.1			
55	8.37	8.49	8.53	8.79	8.91	9.17	9.32	9.59	9.23	9.19	9.29	9.06	8.81	8.55	8.45	8.29			
60	4.93	4.96	5.02	5.16	5.21	5.41	5.54	5.71	5.54	5.58	5.67	5.55	5.41	5.18	5.05	4.90			
65	3.08	3.06	3.08	3.03	3.04	3.03	3.06	3.14	3.08	3.13	3.14	3.05	2.99	2.95	2.93	3.01			
70	2.63	2.60	2.60	2.48	2.41	2.26	2.19	2.07	2.00	2.04	2.03	2.13	2.20	2.36	2.43	2.57			
75	2.13	2.09	2.11	2.05	2.03	1.93	1.89	1.78	1.72	1.76	1.74	1.84	1.88	1.99	2.00	2.08			
80	1.32	1.29	1.33	1.30	1.34	1.31	1.34	1.28	1.25	1.30	1.25	1.30	1.28	1.30	1.27	1.30			
85	0.43	0.39	0.45	0.45	0.53	0.54	0.60	0.59	0.57	0.62	0.56	0.57	0.51	0.49	0.42	0.42			
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
DLG0014(GR2)	2700K setting	120	377.08	6.02	62.63
	3000K setting	120	415.50	5.87	70.82
	3500K setting	120	438.17	5.73	76.43
	4000K setting	120	447.08	5.80	77.06
	5000K setting	120	435.79	6.02	72.38