

PHOTOMETRIC TESTING & EVALUATION TO IES LM-79-19

Sample Tested

1052YM-X-WG-RGBW-FL-MV-DMX-With Filter-WHITE Output

Prepared for:

Vista Professional Outdoor Lighting

1625 Surveyor Ave
Simi Valley, CA 93063

Technical Report Number

80239581-44

February 6, 2025

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Program Description

Photometric and electrical testing of a 1052YM-X-WG-RGBW-FL-MV-DMX-With Filter-WHITE Output Type C LED Luminaire to IES LM-79-19.

Executive Summary

Sample Tested = 1052YM-X-WG-RGBW-FL-MV-DMX-With Filter-WHITE Output

Sample Number = 44003367

Driver = ELDOLED PW50U-M4Z0X1

LED Module = LUMILEDS LUXEON 2835 Architectural

Test Condition = The sample features Red, Green, Blue, and White light settings. It was tested with only the White light turned on. The color settings were adjusted using an ENTTEC DMX USB PRO DMX512 controller.

Luminous Efficacy (Lumens/Watt)	Luminous Flux (Lumens)	Input Power (Watts)	Power Factor	ATHD (%)
83.28	4162.21	49.98	0.9908	11.11

CCT(K)	CRI	R9	Rcs,h1	Rf / Rg
3236	90.6	46	-7	89 / 96

* The above results are recorded / derived from measurements made using an Integrating Sphere

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Test Sample Pictures

The following sample was submitted for evaluation:



Vista Professional Outdoor Lighting : 1052YM-X-WG-RGBW-FL-MV-DMX-With Filter-WHITE Output

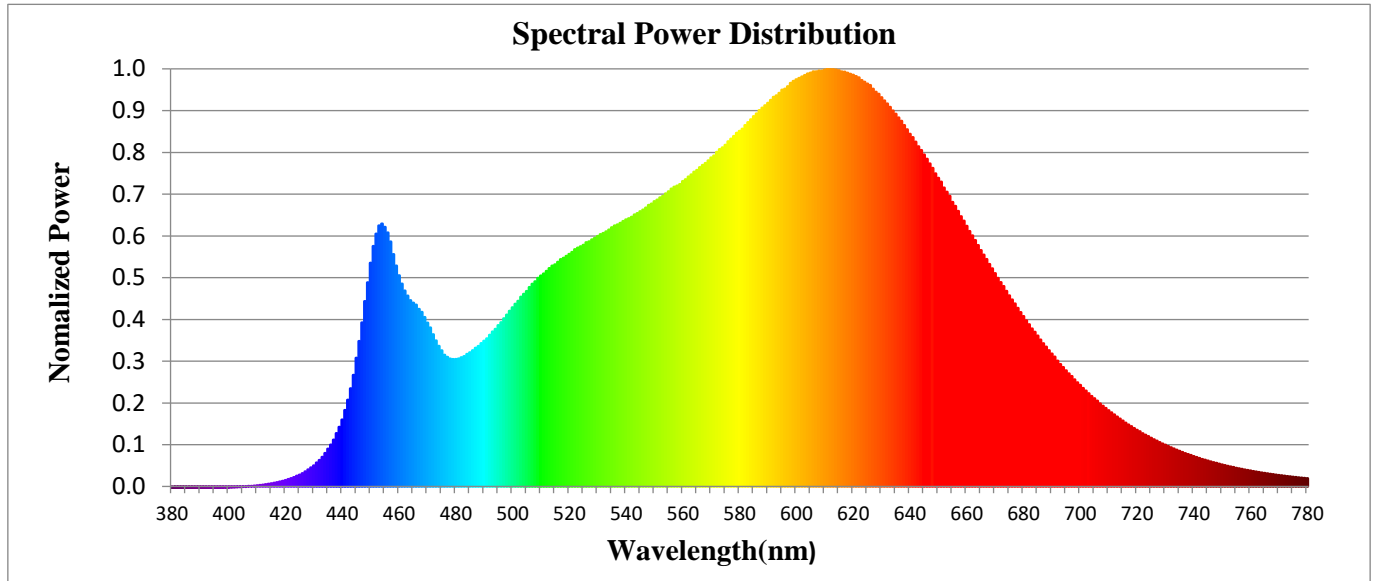
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Test Result		
The following results were measured after stabilization of the sample in the Integrating Sphere (unless otherwise stated). Stability shall be achieved when the variation (Maximum to minimum) of at least three readings of the light output and electrical power consumption, taken at a maximum of 10 minute intervals over a period of 20 minutes and divided by the last of these measurements chronologically, is less than 0.5%.		
Key Photometric Results	Sample Reference	
	1052YM-X-WG-RGBW-FL-MV-DMX-With Filter-WHITE Output	
	Integrating Sphere	Goniophotometer
Luminous Efficacy (Lumens/Watt)	83.28	84.20
Total Luminous Flux (Lumens)	4162.21	4171.28
Total Radiant Flux (Watts)	13.38	
Correlated Color Temperature (CCT)	3236	
Color Rendering Index (CRI)(Ra)	90.6	
R9 Value	46	
IES Rf / IES Rg	89 / 96	
Local Chroma Shift Rcs,h1	-7	
Chromaticity (Chroma x/Chroma y)	0.4228 / 0.4021	
Chromaticity (Chroma u/Chroma v)	0.2423 / 0.3457	
Chromaticity (Chroma u'/Chroma v')	0.2423 / 0.5185	
Duv Value	0.0014	
Stabilization Time (Light and Power)	30 minutes	
Total Run Time (Integrating Sphere)	35 minutes	
Scotopic/Photopic ratio $\Phi(v')/\Phi(v)$	1.52	
Electrical Input Results:	Sample Reference	
	1052YM-X-WG-RGBW-FL-MV-DMX-With Filter-WHITE Output	
Input Power (Watts)	49.98	
Input Voltage (Volts AC)	120.06	
Input Current (Amps)	0.42	
Input Frequency (Hertz)	60.0	
Power Factor	0.9908	
Total Harmonic Distortion (THD V,A)%	0.1, 11.11	
Additional Information	Sample Reference	
	1052YM-X-WG-RGBW-FL-MV-DMX-With Filter-WHITE Output	
Ambient Temperature	25°C	
Integrating Sphere Detector	CDS 2600 Spectroradiometer	
Absortion Correction Used?	Yes	
Date Tested	1/22/2025	

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Spectral Flux

The following graph shows the spectral response curve of the radiant flux for the sample:

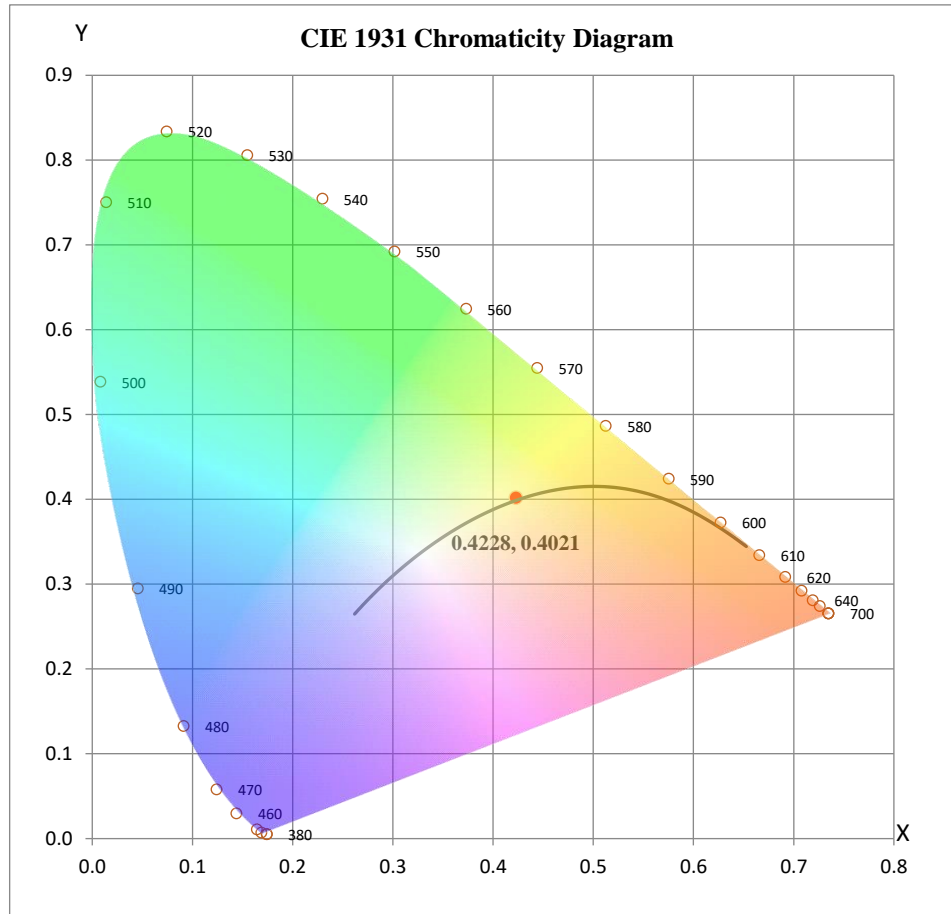


Spectral response of the Radiant Flux
 (380nm to 780nm - calibrated range of the Spectroradiometer)

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Chromaticity Diagram

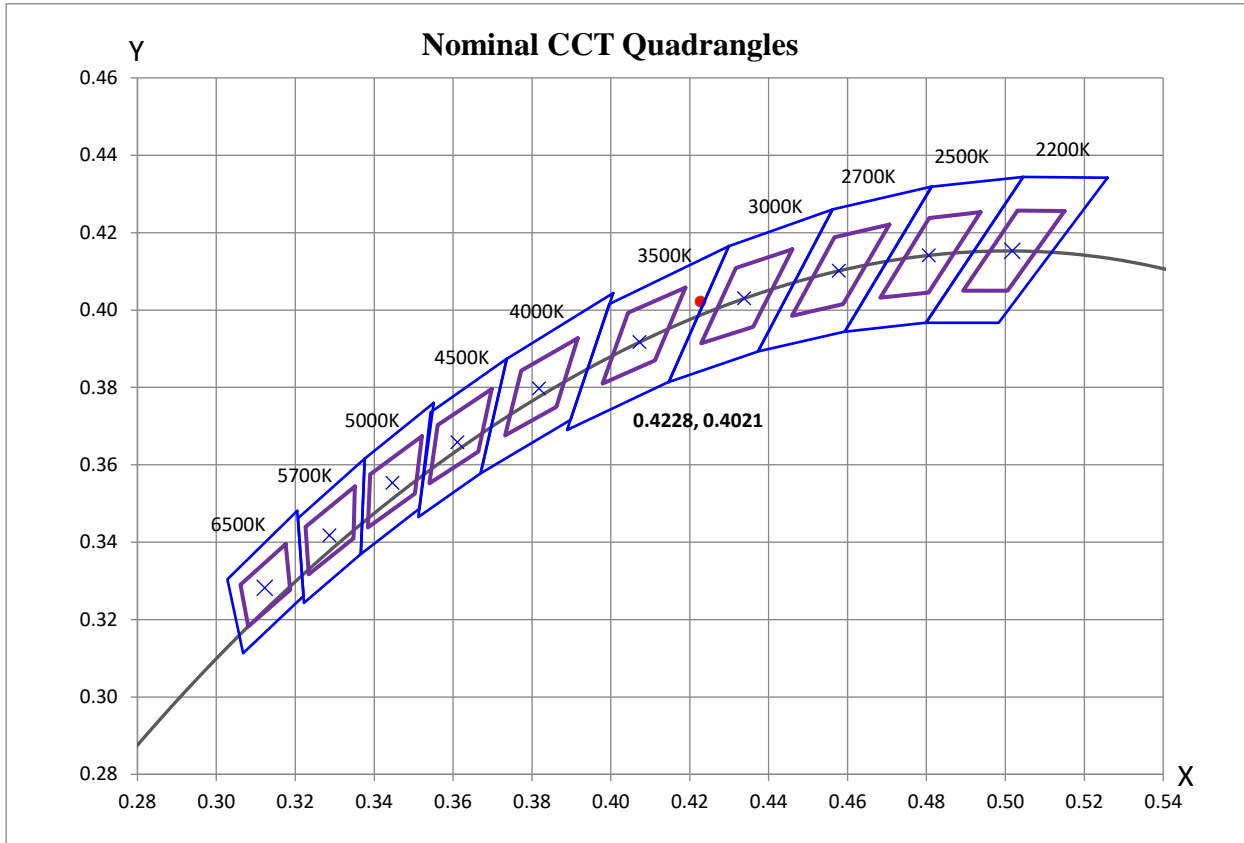
The following image shows the chromaticity diagram for the sample:



$x = 0.4228$ $y = 0.4021$

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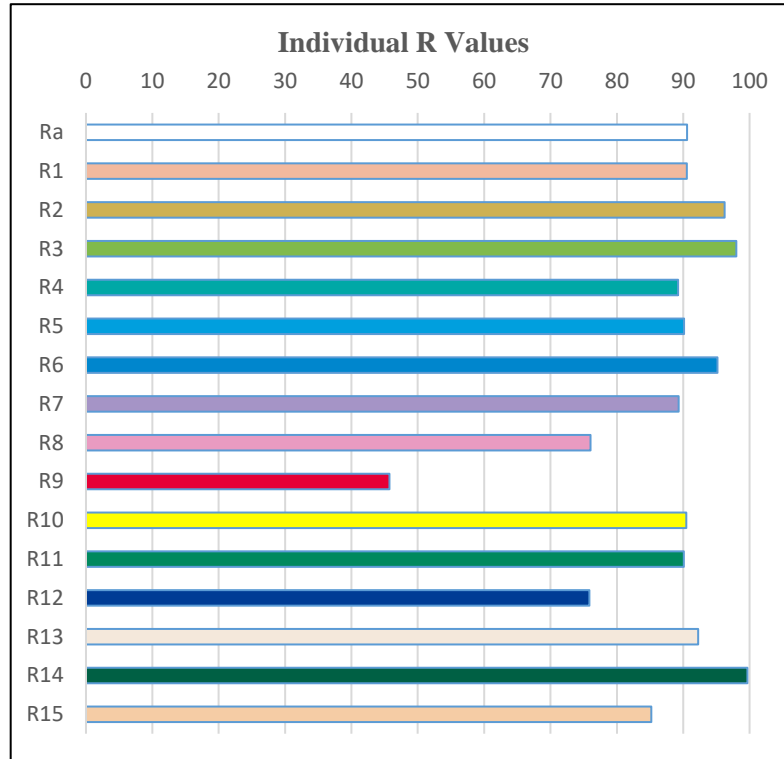
Nominal CCT Quadrangles



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Color Rendering Index

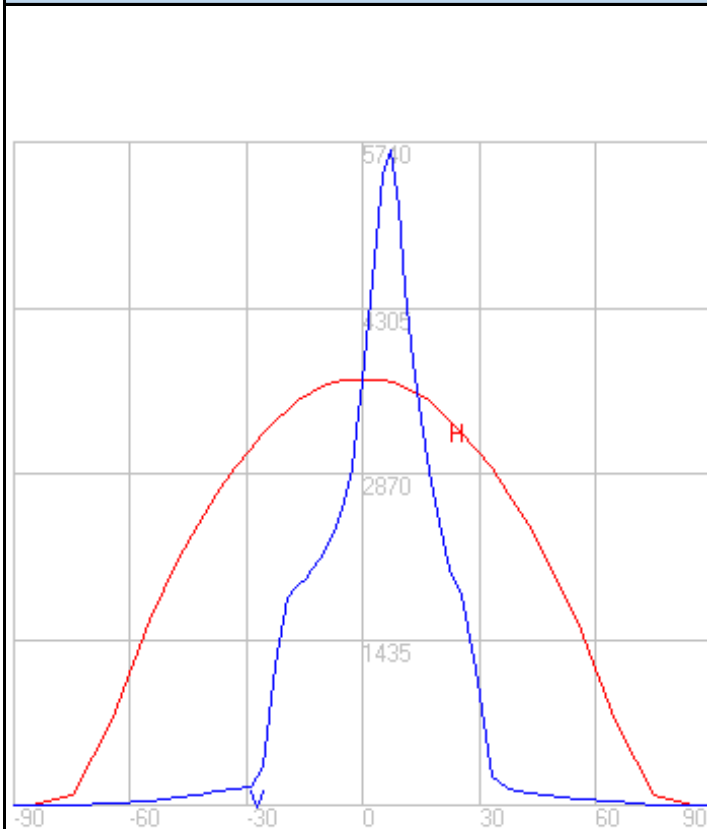
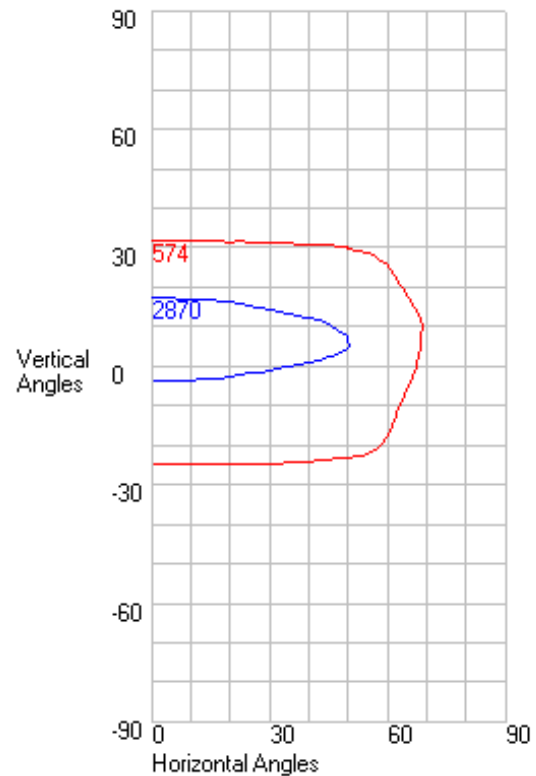
Ra	90.6
R1	91
R2	96
R3	98
R4	89
R5	90
R6	95
R7	89
R8	76
R9	46
R10	90
R11	90
R12	76
R13	92
R14	100
R15	85



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Photometric Test Results

Characteristics	
NEMA Type	7 H x 4 V
Maximum Candela	5740.00
Maximum Candela Angle	-3 H 7 V
Horizontal Beam Angle (50%)	101.10
Vertical Beam Angle (50%)	20.60
Horizontal Field Angle (10%)	137.20
Vertical Field Angle (10%)	56.40
Beam Lumens	1733.00
Field Lumens	3906

Axial Candela Display

Isocandela Curves


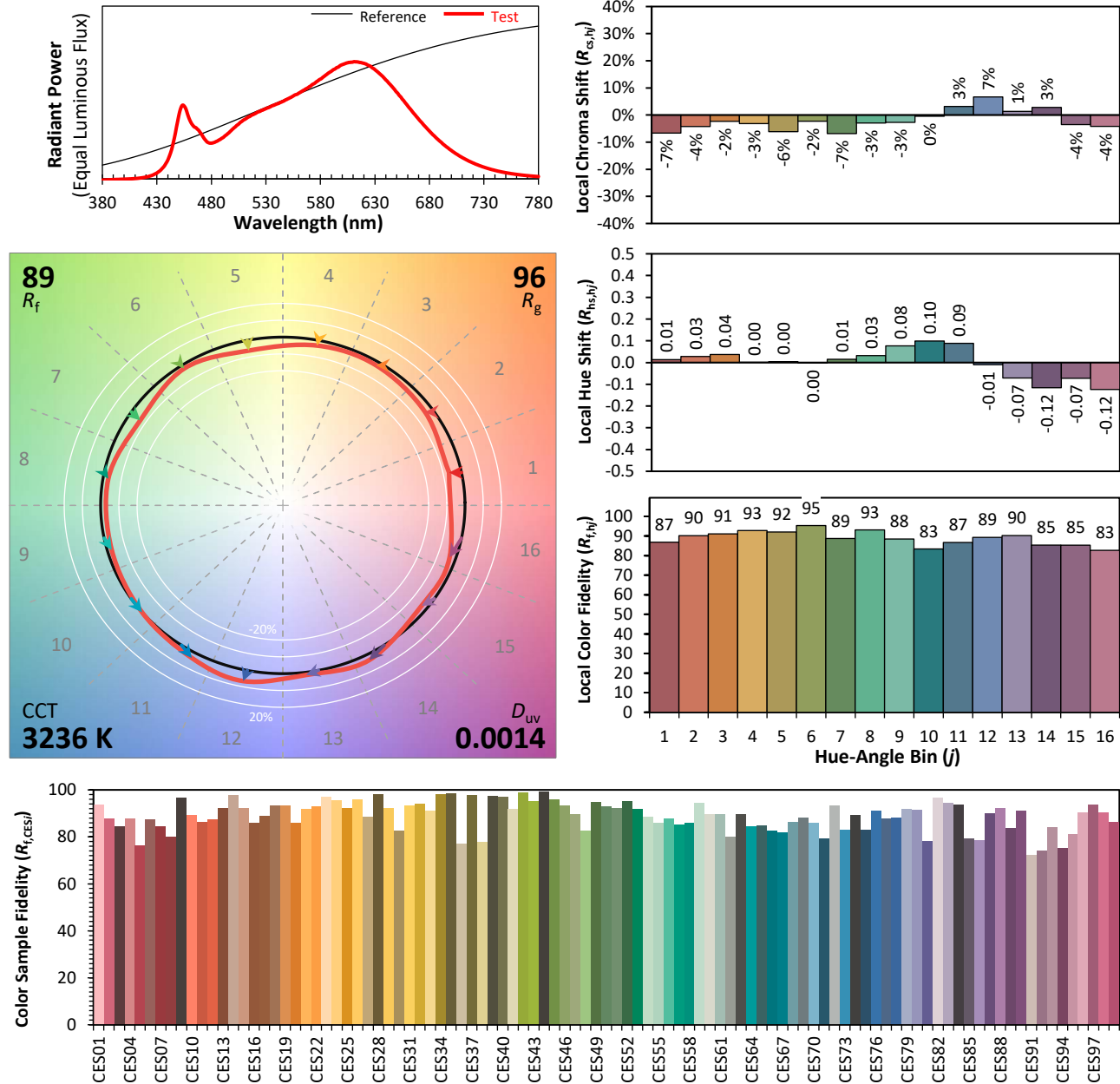
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Candela Tabulation

		Vertical Angle																																				
		0.0	2.5	5.0	7.5	10.0	12.5	15.0	17.5	20.0	22.5	25.0	27.5	30.0	32.5	35.0	37.5	40.0	42.5	45.0	47.5	50.0	52.5	55.0	57.5	60.0	62.5	65.0	67.5	70.0	72.5	75.0	77.5	80.0	82.5	85.0	87.5	90.0
Horizontal Angle	0	3676	4535	5472	5727	4811	3971	3346	2787	2367	2051	1859	1674	844	255	175	146	117	103	92	81	72	64	55	47	40	34	28	22	17	13	8	5	2	0	0	0	0
	5	3676	4514	5452	5683	4843	3970	3349	2799	2367	2061	1863	1695	900	269	176	147	118	104	92	81	72	64	55	47	40	34	28	22	17	12	8	5	2	0	0	0	0
	10	3676	4497	5423	5690	4851	4014	3385	2834	2396	2079	1867	1726	1005	294	178	150	120	105	93	82	73	64	56	48	41	34	28	22	17	12	8	5	2	0	0	0	0
	15	3676	4496	5408	5758	4918	4075	3452	2895	2450	2122	1885	1754	1189	358	183	157	125	106	94	83	74	65	57	48	41	34	28	22	17	13	8	5	2	0	0	0	0
	20	3676	4476	5384	5759	5022	4163	3524	2970	2520	2178	1921	1785	1453	513	207	163	133	110	97	85	75	66	58	49	42	35	29	23	18	13	9	5	2	0	0	0	0
	25	3676	4432	5294	5776	5156	4296	3643	3090	2627	2258	1988	1817	1624	819	265	171	143	116	100	88	77	67	59	51	43	36	29	23	18	13	9	5	2	0	0	0	0
	30	3676	4401	5263	5787	5298	4431	3765	3224	2748	2359	2065	1849	1719	1257	427	193	155	126	105	92	81	70	61	53	44	37	30	24	19	14	9	6	2	0	0	0	0
	35	3676	4376	5182	5729	5453	4629	3932	3392	2917	2496	2175	1924	1771	1560	862	277	166	142	115	98	86	74	64	56	47	39	31	25	19	14	10	6	3	1	0	0	0
	40	3676	4314	5076	5671	5595	4861	4142	3585	3114	2677	2329	2050	1831	1694	1370	654	228	155	130	106	91	80	68	59	50	41	33	26	20	15	10	6	3	1	0	0	0
	45	3676	4270	4953	5574	5724	5123	4411	3812	3345	2906	2527	2206	1946	1744	1606	1231	566	211	147	121	99	84	73	62	52	44	35	27	21	15	11	7	4	1	0	0	0
	50	3676	4228	4865	5435	5743	5416	4736	4129	3609	3187	2786	2422	2116	1869	1692	1552	1217	610	220	142	116	93	78	66	55	46	37	29	22	17	11	7	4	1	0	0	0
	55	3676	4177	4727	5260	5650	5632	5111	4482	3941	3490	3075	2695	2359	2084	1852	1668	1520	1269	755	290	148	113	89	72	60	49	40	31	23	17	12	8	5	2	0	0	0
	60	3676	4111	4595	5067	5476	5679	5491	4956	4380	3872	3424	3034	2691	2380	2106	1875	1667	1505	1315	946	526	189	115	89	69	54	43	33	25	19	13	9	5	2	1	0	0
	65	3676	4057	4458	4858	5232	5520	5616	5398	4933	4396	3898	3469	3104	2776	2462	2182	1929	1698	1500	1350	1149	773	446	168	92	70	51	38	29	21	14	9	6	3	1	0	0
	70	3676	4001	4310	4629	4948	5223	5445	5515	5367	5013	4538	4077	3651	3275	2928	2611	2307	2028	1779	1569	1374	1211	1010	695	441	175	72	51	34	24	16	10	6	3	1	0	0
	75	3676	3949	4174	4401	4642	4860	5056	5219	5309	5271	5108	4848	4493	4089	3654	3250	2859	2524	2227	1950	1689	1437	1227	1037	862	605	336	196	62	31	19	12	7	3	1	0	0
	80	3676	3890	4025	4163	4309	4443	4575	4687	4763	4818	4857	4857	4808	4683	4475	4203	3856	3487	3101	2712	2325	1946	1613	1318	1040	810	572	384	218	100	48	18	9	4	2	0	0
	85	3676	3820	3878	3932	3981	4028	4070	4094	4084	4076	4062	4053	4038	4008	3963	3888	3805	3711	3588	3400	3138	2822	2507	2161	1760	1377	957	614	344	182	91	50	25	12	3	0	0
	90	3676	3692	3683	3662	3630	3595	3546	3491	3413	3327	3240	3147	3056	2943	2828	2692	2560	2426	2275	2129	1950	1786	1609	1399	1190	938	716	467	283	160	92	60	37	17	5	1	0
	95	3676	3671	3594	3505	3420	3327	3224	3121	2994	2872	2753	2637	2519	2388	2257	2116	1973	1845	1706	1571	1421	1273	1133	977	817	635	466	318	190	100	45	23	11	4	1	0	0
100	3676	3606	3469	3330	3194	3077	2945	2819	2682	2553	2426	2314	2210	2090	1977	1852	1727	1616	1491	1381	1258	1134	1018	887	752	578	395	180	63	28	17	11	6	2	1	0	0	
105	3676	3538	3342	3172	3003	2864	2727	2593	2464	2339	2217	2110	2005	1899	1799	1688	1575	1471	1364	1270	1164	1065	919	625	300	94	56	42	32	23	14	8	4	2	0	0	0	
110	3676	3457	3226	3020	2846	2693	2553	2425	2302	2179	2069	1960	1864	1764	1673	1577	1481	1390	1304	1165	857	412	160	89	73	58	49	39	28	18	10	6	4	2	0	0	0	
115	3676	3379	3116	2902	2720	2566	2427	2307	2177	2062	1958	1853	1769	1673	1601	1532	1431	1244	803	332	140	106	89	76	66	56	45	32	20	13	9	6	3	1	0	0	0	
120	3676	3329	3041	2801	2613	2462	2324	2204	2092	1980	1886	1782	1701	1637	1567	1387	946	399	162	125	106	93	83	73	62	49	36	23	16	12	8	5	3	1	0	0	0	
125	3676	3274	2962	2718	2535	2380	2243	2130	2023	1927	1826	1747	1677	1569	1276	646	237	141	125	108	98	89	78	67	54	39	27	20	15	11	7	5	3	1	0	0	0	
130	3676	3225	2892	2645	2461	2308	2176	2071	1973	1877	1799	1737	1608	1205	523	204	144	127	113	103	94	83	72	58	44	31	23	18	13	10	7	4	2	1	0	0	0	
135	3676	3190	2836	2591	2403	2252	2130	2026	1930	1853	1794	1665	1287	523	200	148	130	118	109	100	89	78	64	49	35	27	22	17	13	10	7	4	2	1	0	0	0	
140	3676	3143	2779	2530	2342	2197	2079	1985	1890	1832	1750	1432	666	228	154	137	123	114	105	95	83	70	55	41	32	26	21	16	13	10	6	4	2	1	0	0	0	
145	3676	3114	2748	2496	2310	2166	2052	1953	1877	1823	1633	978	320	161	146	128	119	111	100	90	77	63	47	36	30	25	20	16	13	9	6	4	2	0	0	0	0	
150	3676	3094	2717	2460	2278	2140	2029	1929	1872	1784	1410	546	199	155	135	126	117	108	97	85	71	55	41	34	29	24	20	16	12	9	6	4	2	0	0	0	0	
155	3676	3066	2683	2430	2248	2108	2000	1909	1856	1701	1058	335	166	148	131	123	115	104	94	80	65	48	38	32	27	23	19	15	12	8	6	4	2	0	0	0	0	
160	3676	3051	2666	2413	2231	2093	1988	1900	1844	1618	754	239	161	140	130	122	113	102	90	75	60	45	37	31	27	22	19	15	11	8	6	4	2	0	0	0	0	
165	3676	3030	2643	2396	2214	2077	1968	1894	1823	1476	562	190	158	137	128	120	110	99	87	71	54	42	35	30	26	22	18	15	11	8	5	4	2	0	0	0	0	
170	3676	3019	2627	2378	2202	2067	1960	1890	1801	1362	437	181	153	136	127	120	108	98	84	69	51	41	35	30	26	22	18	15	12	8	6	4	2	0	0	0	0	
175	3676	3014	2627	2375	2195	2061	1955	1887	1783	1283	387	173	151	135	127	119	107	97	82	67	49	40	34	29	25	22	18	15	12	9	6	4	2	0	0	0	0	
180	3676	3009	2624	2370	2195	2058	1953	1887	1777	1219	373	169	150	135	126	118	107	96	82	67	49	40	34	29	25	21	18	15	12	8	6	4	2	0	0	0	0	

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ANSI/IES TM-30-18 Color Rendition Report



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

x 0.4228
 y 0.4021
 u' 0.2423
 v' 0.5185

CIE 13.3-1995
(CRI)
 R_a 91
 R_g 46

Colors are for visual orientation purposes only. Created with the ANSI/IES TM-30-18 Calculator Version 2.00.

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Photometric Testing Information

The sample was evaluated for photometric and electrical characteristics using an integrating sphere and a goniophotometer, each located in purpose-built, temperature and humidity-controlled, draft free environments

The integrating sphere is by Labsphere which exhibits a “4 π geometry” configuration according to IES LM-79-19 and is applicable for all types of LED products (directional and non-directional light projections). Its spectroradiometer is an array-type detector manufactured and calibrated by Labsphere.

The integrating sphere uses self-absorption correction to eliminate errors due to mismatches between the standard reference lamp and the test samples being measured. The auxiliary lamp used to perform this task is a halogen type lamp powered by a calibrated Lamp Power Supply manufactured and calibrated by Labsphere. Ambient temperature (for photometric analysis) is measured using a “J-Type” thermocouple located inside the integrating sphere at the same height as the sample under test and not more than 1 meter in horizontal distance away from the sample. The thermocouple is located behind the baffle of the photo detector in order to eliminate any direct optical radiation from the sample under test.

Luminaire Stabilization.

The sample was placed inside the integrating sphere and powered by a regulated and conditioned Voltage alternating current supply. The correlated color temperature, color rendering index, chromaticity coordinates and electrical power measurements contained in this report are the numeric averages of the three readings upon which stabilization is verified. The stabilization times shown on the results pages of this report denote the time of the 1st measurement (of the 3 consecutive readings) since this is the minimum time that the sample is assumed to have taken to reach stabilization.

The integrating sphere is calibrated using a quartzline halogen lamp with the following specifications:
 (Calibrated by Labsphere – NIST traceable).

Lamp ID	J178	L177	A178
Manufacture	Donar	Donar	Donar
Model Number	SCL-1400-J178	SCL-1400-L177	SCL-1400-A178
Part ID	SCL-1400	SCL-1400	SCL-1400
Current (A)	2.679	2.679	2.679
Wattage (W)	75.0	75.0	75.0
Voltage (VDC)	28.0	28.0	28.0
Luminous Flux	1306	1417	1343
Calibration Date	6/21/2021	2/16/2021	6/21/2021

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Photometric Testing Information (Continued)

The goniophotometer Mayer Engineering Type C is calibrated using a frosted tungsten filament FDS/DZE lamp with the following specifications:

Manufacturer: GE
Part Number: DZE
Bulb Number: 106-A
Voltage: 16.93 Volts DC reference
Calibration Current: 4.863 Amperes
Luminous Intensity: 168.8 Candelas
Calibration Date: 4/25/12 (NIST traceable)

Manufacturer: GE
Part Number: DZE
Bulb Number: 106-B
Voltage: 16.45 Volts DC reference
Calibration Current: 4.79 Amperes
Luminous Intensity: 145.3 Candelas
Calibration Date: 4/25/12 (NIST traceable)


Manufacturer: GE
Part Number: DZE
Bulb Number: 106-C
Voltage: 16.57 Volts DC reference
Calibration Current: 4.829 Amperes
Luminous Intensity: 157.0 Candelas
Calibration Date: 4/25/12 (NIST traceable)

A Yokogawa WT210 Power Analyzer was used to measure all electrical characteristics of the sample.

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Equipment List: Goniophotometer Type C			
Description	Manufacturer and Model Number	CSA Instrument Reference Number	Calibration Due Date
Optometer	Gigahertz Optik P9801	OPT400	N/A
Programmable DC Power Supply	Chroma Instruments 62012P-80-60	DCP300	N/A
Regulated Power Supply	Chroma Instruments 61602	AC301	N/A
Power Analyzer	Yokogawa WT210	Z00019641	10/28/2025
Equipment List: Sphere D Equipment			
Description	Manufacturer and Model Number	CSA Instrument Reference Number	Calibration Due Date
Integrating Sphere 118"	Labsphere LMS-3M	Z00029788	N/A
Spectroradiometer	Labsphere CDS2600	N/A	N/A
Auxiliary Lamp PSU	Labsphere LPS525	N/A	N/A
Power Analyzer	Yokogawa WT310E	Z00025875	5/14/2025
Programmable AC Power Supply	Chroma Instruments 61605	Z00023974	N/A

* All equipment is calibrated to ISO / IEC 17025-2017 guidelines.

Accreditation
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 <p>Testing NVLAP LAB CODE 600329-0</p>

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