



Report No.: 80239581-40
Project No.: 80239581
Client: Vista Professional Outdoor Lighting

PHOTOMETRIC TESTING & EVALUATION TO IES LM-79-19

Sample Tested

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

Prepared for:

Vista Professional Outdoor Lighting

1625 Surveyor Ave
Simi Valley, CA 93063

Technical Report Number

80239581-40

March 19, 2025

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Program Description

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

Executive Summary

Sample Tested = 1052YM-X-WW-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 (%)
70.99	3525.42	49.66	0.9908	11.20

CCT(K)	CRI	R9	Rcs,h1	Rf / Rg
3234	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-WW-RGBW-FL-MV-DMX-With Filter-WHITE Output

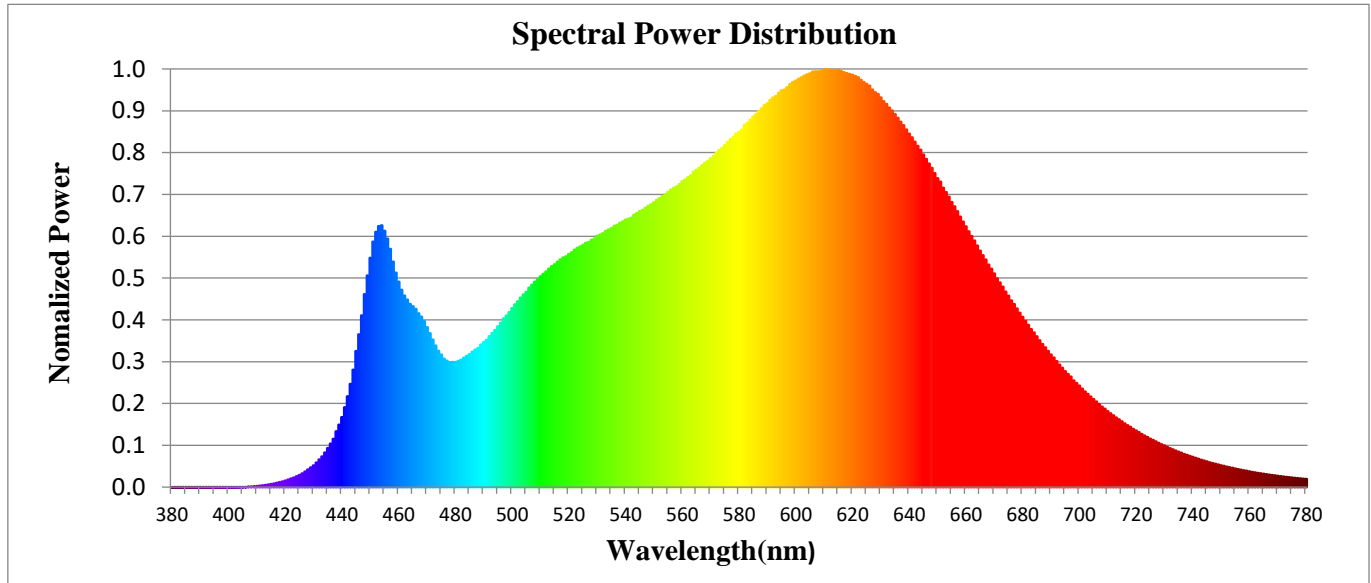
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Test Result		
The following results were measured after stabilization of the sample in the Integrating Sphere (unless otherwise stated). Stability shall be achieved when the variation (Maximum to minimum) of at least three readings of the light output 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-WW-RGBW-FL-MV-DMX-With Filter-WHITE Output	
	Integrating Sphere	Goniophotometer
Luminous Efficacy (Lumens/Watt)	70.99	69.93
Total Luminous Flux (Lumens)	3525.42	3460.00
Total Radiant Flux (Watts)	11.34	
Correlated Color Temperature (CCT)	3234	
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)	0.4229 / 0.4021	
Chromaticity (Chroma u/Chroma v)	0.2424 / 0.3457	
Chromaticity (Chroma u'/Chroma v')	0.2424 / 0.5185	
Duv Value	0.0014	
Stabilization Time (Light and Power)	30 minutes	
Total Run Time (Integrating Sphere)	35 minutes	
Scotopic/Photopic ratio $\Phi(v')/\Phi(v)$	1.51	
Electrical Input Results:	Sample Reference	
	1052YM-X-WW-RGBW-FL-MV-DMX-With Filter-WHITE Output	
Input Power (Watts)	49.66	
Input Voltage (Volts AC)	120.07	
Input Current (Amps)	0.42	
Input Frequency (Hertz)	60.0	
Power Factor	0.9908	
Total Harmonic Distortion (THD V,A)%	0.11, 11.2	
Additional Information	Sample Reference	
	1052YM-X-WW-RGBW-FL-MV-DMX-With Filter-WHITE Output	
Ambient Temperature	25.0°C	
Integrating Sphere Detector	CDS 2600 Spectroradiometer	
Absortion Correction Used?	Yes	
Date Tested	3/18/2025	

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Spectral Flux

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

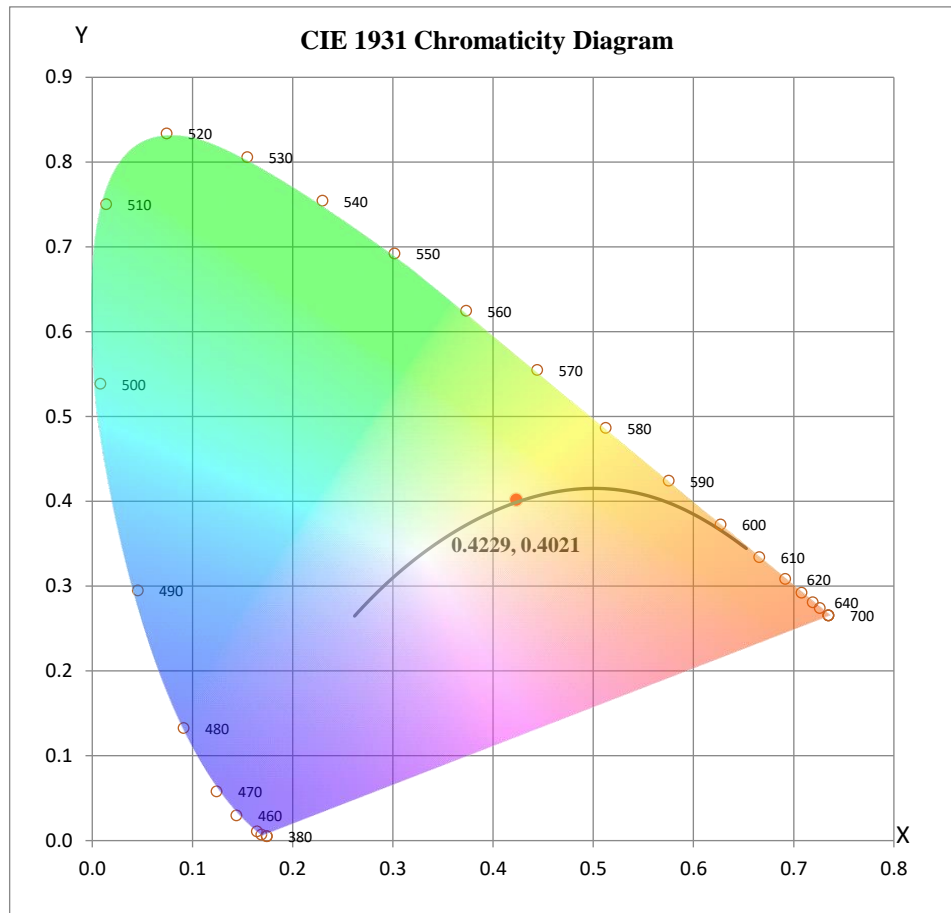


Spectral response of the Radiant Flux
 (380nm to 780nm - calibrated range of the Spectroradiometer)

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Chromaticity Diagram

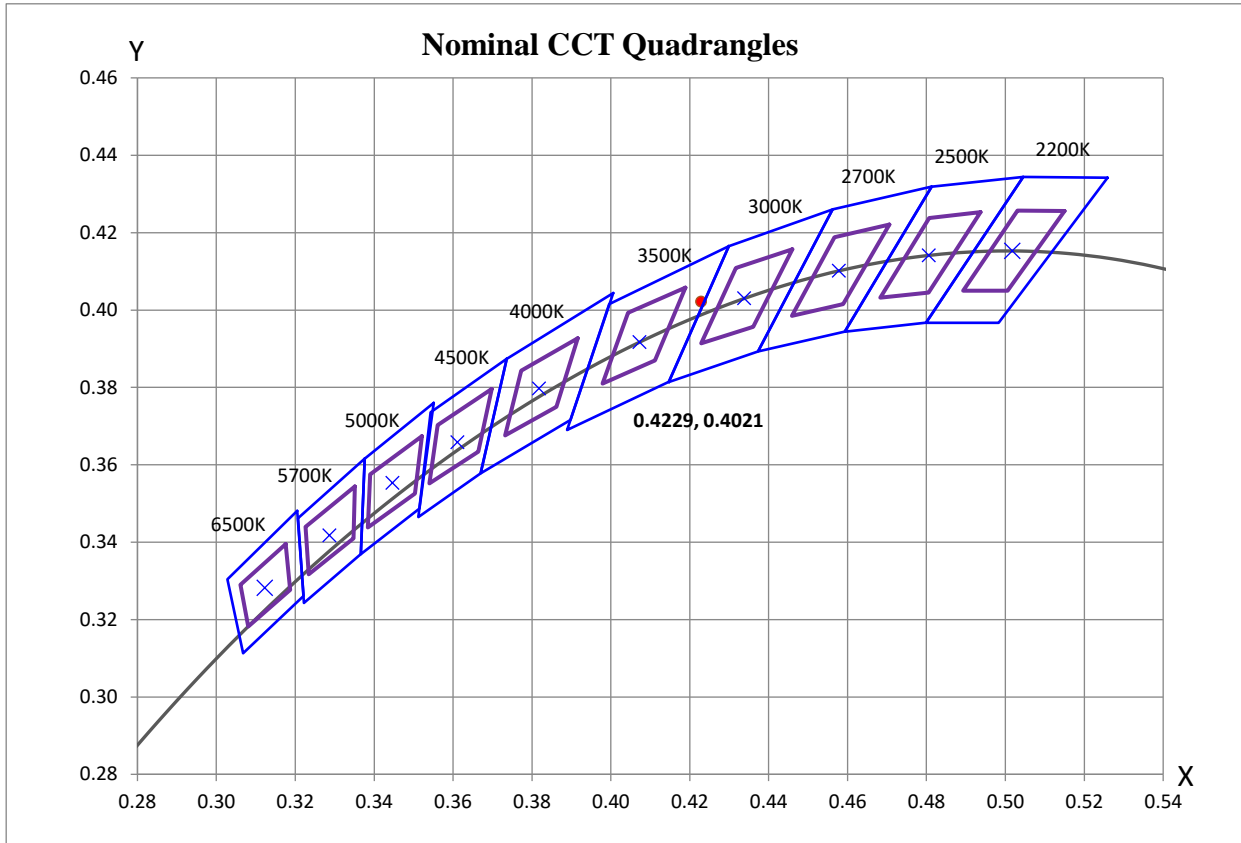
The following image shows the chromaticity diagram for the sample:



$x = 0.4229$ $y = 0.4021$

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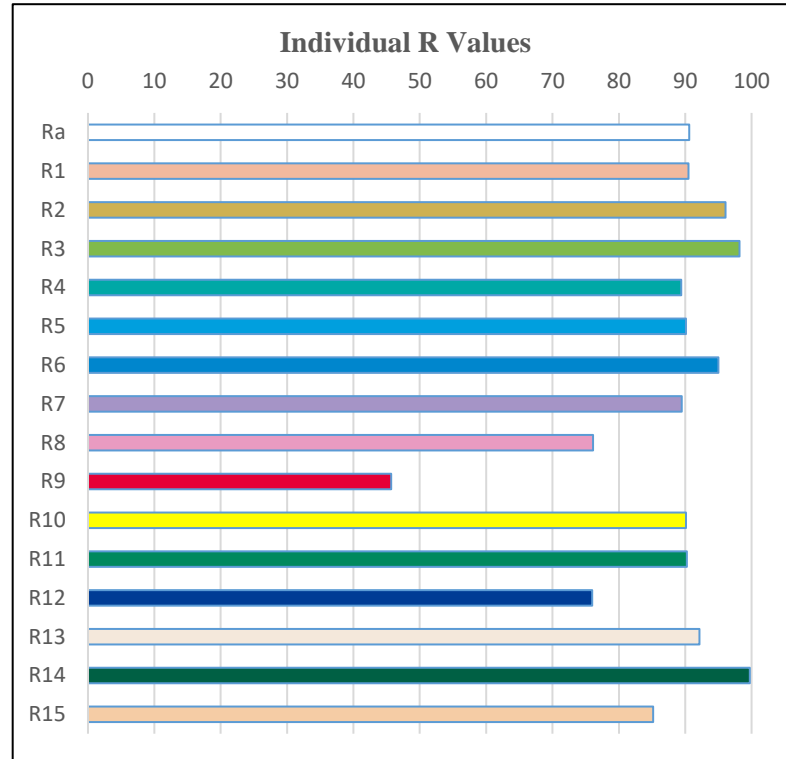
Nominal CCT Quadrangles



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Color Rendering Index

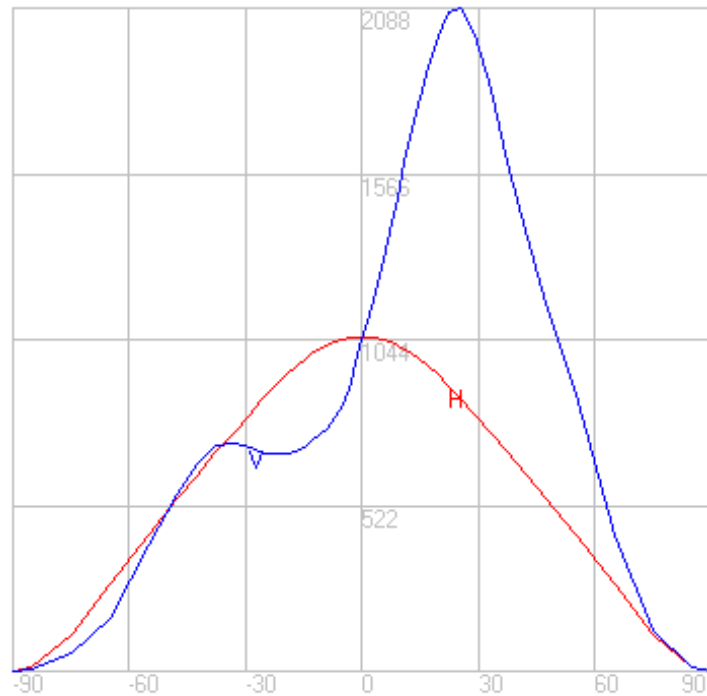
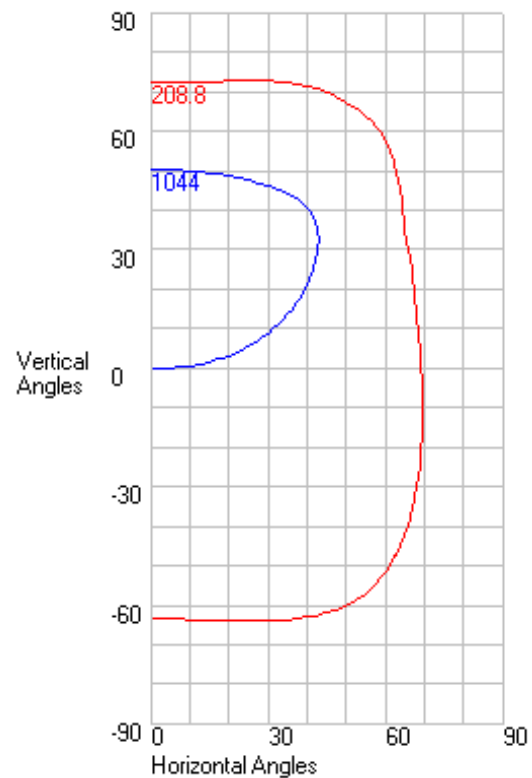
Ra	90.6
R1	90
R2	96
R3	98
R4	89
R5	90
R6	95
R7	89
R8	76
R9	46
R10	90
R11	90
R12	76
R13	92
R14	100
R15	85



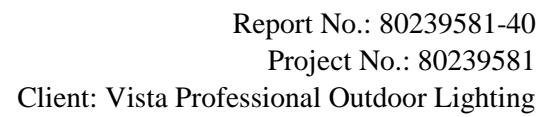
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Photometric Test Results

Characteristics	
NEMA Type	7 H x 7 V
Maximum Candela	2088.00
Maximum Candela Angle	0 H 25.5 V
Horizontal Beam Angle (50%)	83.50
Vertical Beam Angle (50%)	50.50
Horizontal Field Angle (10%)	133.30
Vertical Field Angle (10%)	135.60
Beam Lumens	1447.00
Field Lumens	3322

Axial Candela Display

Isocandela Curves


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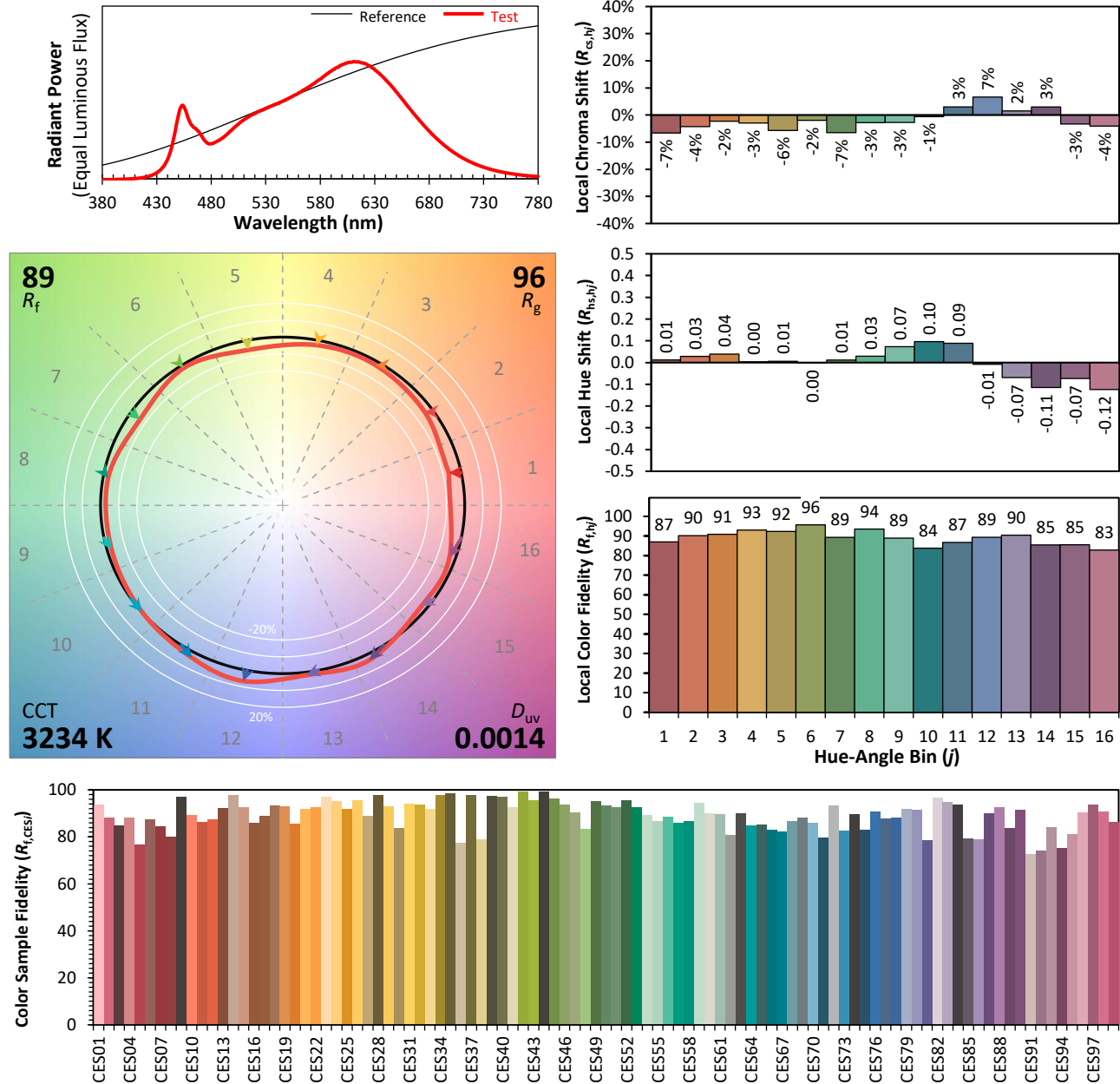
	Horizontal Angle																																				
	0.0	2.5	5.0	7.5	10.0	12.5	15.0	17.5	20.0	22.5	25.0	27.5	30.0	32.5	35.0	37.5	40.0	42.5	45.0	47.5	50.0	52.5	55.0	57.5	60.0	62.5	65.0	67.5	70.0	72.5	75.0	77.5	80.0	82.5	85.0	87.5	90.0
0	1047	1144	1273	1412	1549	1683	1810	1925	2018	2081	2096	2055	1974	1862	1733	1601	1478	1365	1259	1159	1063	971	870	764	653	537	433	335	251	182	126	82	51	29	13	4	0
5	1047	1158	1289	1428	1565	1697	1822	1935	2028	2085	2094	2054	1967	1852	1724	1594	1473	1359	1253	1154	1058	962	863	757	647	532	426	330	247	179	124	81	50	27	12	3	0
10	1047	1156	1286	1424	1558	1687	1811	1924	2016	2073	2085	2052	1976	1865	1736	1606	1484	1370	1262	1160	1063	968	869	768	660	546	441	345	260	188	131	87	53	28	12	3	0
15	1047	1154	1281	1415	1545	1672	1795	1905	1996	2058	2079	2051	1982	1878	1755	1627	1503	1387	1276	1172	1074	980	883	782	679	570	461	365	278	204	143	94	57	31	13	4	0
20	1047	1148	1271	1401	1529	1650	1766	1875	1963	2026	2054	2043	1989	1893	1778	1654	1530	1411	1298	1190	1089	991	894	796	694	589	485	389	300	224	159	107	65	34	15	5	0
25	1047	1146	1262	1387	1507	1623	1734	1837	1926	1991	2025	2025	1988	1911	1804	1686	1563	1439	1323	1211	1105	1003	904	807	710	608	508	414	326	246	178	121	75	41	17	5	0
30	1047	1143	1253	1372	1486	1595	1697	1794	1879	1946	1990	1999	1976	1917	1829	1719	1599	1475	1354	1236	1125	1020	919	821	727	631	533	437	349	268	196	135	85	46	20	6	0
35	1047	1137	1242	1350	1456	1557	1652	1741	1819	1885	1935	1959	1947	1904	1834	1740	1630	1510	1389	1271	1157	1047	943	842	743	646	547	455	367	285	210	147	94	52	22	6	0
40	1047	1131	1227	1327	1425	1517	1604	1683	1754	1814	1860	1888	1893	1867	1815	1741	1649	1545	1433	1316	1199	1084	973	863	759	660	562	467	380	296	222	156	100	56	24	7	0
45	1047	1125	1209	1299	1389	1474	1550	1619	1680	1732	1774	1801	1813	1799	1766	1717	1648	1561	1460	1352	1238	1120	1004	892	782	677	576	476	385	301	225	158	102	58	26	8	0
50	1047	1118	1192	1273	1351	1424	1490	1550	1601	1642	1673	1694	1703	1701	1684	1649	1599	1535	1454	1359	1254	1143	1030	916	805	696	588	486	393	305	226	159	103	59	26	7	0
55	1047	1110	1175	1243	1308	1371	1426	1474	1513	1543	1564	1577	1583	1577	1561	1536	1498	1445	1380	1301	1215	1120	1020	915	806	698	591	487	392	304	224	154	98	55	25	7	0
60	1047	1101	1156	1211	1265	1315	1361	1396	1423	1442	1452	1457	1451	1438	1418	1390	1355	1307	1249	1182	1107	1026	940	846	749	652	554	458	369	286	211	145	91	50	24	8	0
65	1047	1093	1137	1178	1220	1258	1290	1314	1330	1340	1339	1332	1318	1298	1270	1234	1192	1143	1086	1024	955	881	803	721	638	553	469	388	312	241	177	121	77	43	19	5	0
70	1047	1086	1119	1149	1178	1203	1222	1232	1236	1235	1223	1209	1186	1158	1122	1081	1034	981	924	862	796	728	657	584	512	441	374	309	248	192	141	97	61	33	15	5	0
75	1047	1078	1101	1120	1134	1146	1154	1156	1146	1134	1115	1091	1062	1028	987	941	891	839	784	725	665	601	538	477	418	361	306	252	203	157	116	80	49	27	12	3	0
80	1047	1066	1082	1091	1096	1099	1093	1079	1064	1042	1016	985	953	913	870	827	779	730	679	627	572	519	468	416	366	318	271	226	184	144	107	74	47	25	11	4	0
85	1047	1060	1062	1062	1056	1048	1035	1017	995	968	935	901	866	829	788	747	705	661	616	568	525	481	437	393	350	307	265	224	183	144	108	75	48	26	11	3	0
90	1047	1054	1046	1033	1020	1003	982	958	929	897	864	830	796	760	727	691	655	618	580	545	508	471	433	395	355	315	274	233	192	153	114	80	51	28	12	3	0
95	1047	1042	1025	1007	987	962	934	904	872	839	807	776	746	718	690	663	633	604	574	543	513	481	446	410	372	332	291	249	207	164	124	87	55	30	12	3	0
100	1047	1030	1008	983	953	921	888	856	823	794	766	740	717	696	674	652	627	603	578	552	525	495	464	430	393	353	312	268	223	178	135	95	60	32	13	3	0
105	1047	1024	992	958	921	885	850	818	789	764	741	720	702	686	666	648	629	609	587	565	542	515	485	452	415	375	331	284	237	190	143	100	64	35	15	4	0
110	1047	1013	973	933	891	852	817	788	762	742	726	707	694	676	662	648	632	617	601	582	560	536	507	472	433	391	345	296	246	196	148	104	66	35	15	4	0
115	1047	1003	957	908	864	825	793	768	746	730	712	697	688	675	661	650	641	631	616	603	581	555	524	487	446	400	352	301	249	198	149	104	65	35	15	4	0
120	1047	995	942	888	842	803	775	752	735	717	702	694	682	674	663	654	648	643	637	621	600	571	536	496	450	402	352	299	246	194	146	102	65	35	15	4	0
125	1047	988	927	870	824	788	761	741	725	707	697	688	681	675	670	668	667	664	655	638	613	579	539	494	446	394	342	289	237	186	139	96	61	34	15	4	0
130	1047	981	915	854	808	776	751	731	715	702	693	685	680	680	679	682	686	685	674	651	619	577	531	483	433	380	327	275	223	174	129	90	57	32	14	3	0
135	1047	974	903	843	797	765	741	723	709	698	689	682	682	684	690	697	703	698	681	651	610	565	516	465	413	360	308	256	207	161	119	82	51	28	12	3	0
140	1047	968	893	830	787	756	735	715	703	693	683	679	683	688	702	713	714	706	680	644	598	546	495	443	390	338	287	236	189	145	107	73	46	25	10	3	0
145	1047	960	883	822	779	749	728	710	698	689	680	680	686	700	714	720	722	702	669	625	575	525	473	421	368	316	266	217	172	131	95	64	39	21	9	3	0
150	1047	956	876	813	772	745	722	704	693	683	678	682	694	707	722	729	721	693	654	608	557	506	454	402	349	298	247	198	154	114	82	54	34	18	8	2	0
155	1047	952	869	804	765	739	719	701	688	681	679	688	700	713	728	730	711	681	640	590	541	490	438	386	333	280	227	178	136	100	71	48	30	17	7	2	0
160	1047	947	862	799	760	734	714	696	686	680	679	692	703	720	729	725	705	672	630	580	530	479	426	373	318	263	209	161	121	91	66	45	28	15	6	2	0
165	1047	944	858	797	759	732	712	694	685	682	684	695	706	723	730	720	698	665	621	571	521	469	416	362	304	246	192	148	113	86	62	43	27	14	6	2	0
170	1047	943	854	795	757	730	709	693	685	683	686	694	708	722	727	718	694	659	615	566	515	463	409	352	292	234	182	141	108	82	59	41	26	14	6	1	0
175	1047	942	853	794	756	729	709	692	685	684	686	693	710	720	723	714	692	656	611	562	511	458	403	345	285	226	176	136	105	79	58	40	25	13	6	1	0
180	1047	928	843	788	752	727	707	688	685	685	685	696	715	721	723	715	689	654	606	557	506	453	398	338	277	218	169	131	101	77	56	37	23	13	5	1	0

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Version 1.0

ANSI/IES TM-30-18 Color Rendition Report



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

x 0.4230
 y 0.4021
 u' 0.2424
 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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 Testing NVLAP LAB CODE 600329-0

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