

PHOTOMETRIC TESTING & EVALUATION TO IES LM-79-19

Sample Tested

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

Prepared for:

Vista Professional Outdoor Lighting

1625 Surveyor Ave
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Technical Report Number

80239581-42

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Program Description

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

Executive Summary

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

Sample Number = 44003367

Driver = ELDOLED PW50U-M4Z0X1

LED Module = LUMILEDS LUXEON 3528 RGB

Test Condition = The sample features Red, Green, Blue, and White light settings. It was tested with only the Green light turned on. The color settings were adjusted using an ENTTEC DMX USB PRO DMX512 controller. Candela values are scaled to calculate the same output of the sphere measurement.

Luminous Efficacy (Lumens/Watt)	Luminous Flux (Lumens)	Input Power (Watts)	Power Factor	ATHD (%)
61.16	1274.24	20.84	0.9725	14.46

CCT(K)	CRI	R9	Rcs,h1	Rf / Rg
N.A.	N.A.	N.A.	N.A.	N.A.

* 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-GREEN 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-GREEN Output
	Integrating Sphere
Luminous Efficacy (Lumens/Watt)	61.16
Total Luminous Flux (Lumens)	1274.24
Total Radiant Flux (Watts)	2.83
Correlated Color Temperature (CCT)	N.A.
Color Rendering Index (CRI)(Ra)	N.A.
R9 Value	N.A.
IES Rf / IES Rg	N.A.
Local Chroma Shift Rcs,h1	N.A.
Chromaticity (Chroma x/Chroma y)	0.1362 / 0.7085
Chromaticity (Chroma u/Chroma v)	0.0485 / 0.3786
Chromaticity (Chroma u'/Chroma v')	0.0485 / 0.5678
Duv Value	0.1652
Stabilization Time (Light and Power)	30 minutes
Total Run Time (Integrating Sphere)	35 minutes
Scotopic/Photopic ratio $\Phi(v')/\Phi(v)$	3.31

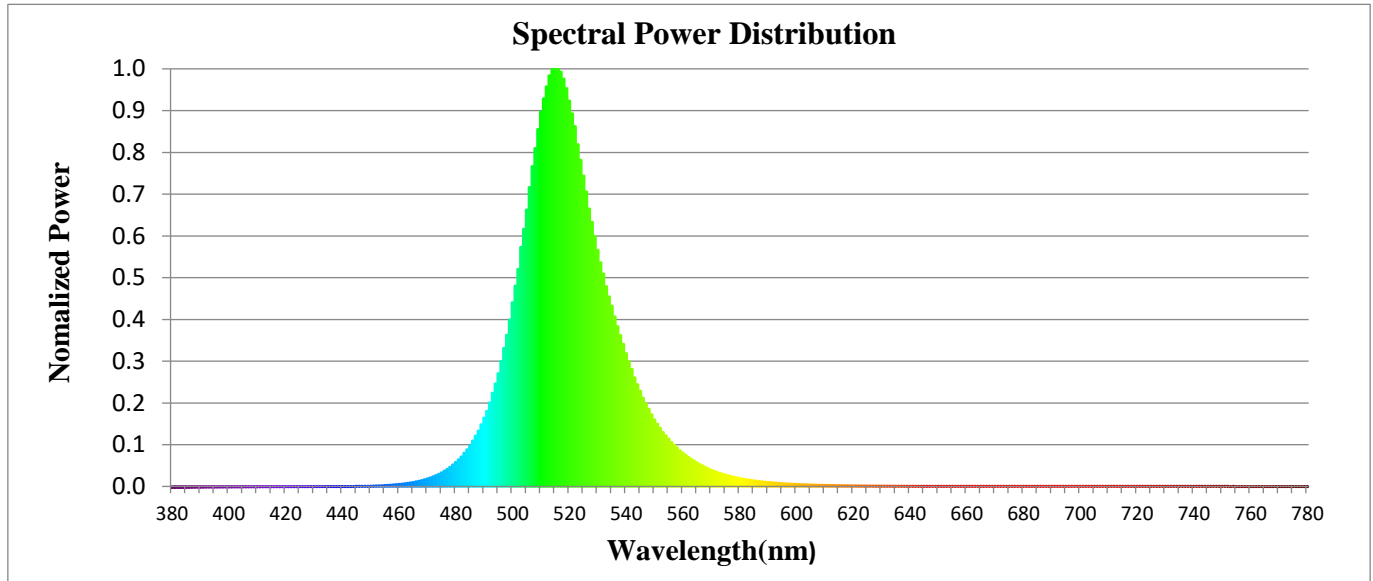
Electrical Input Results:	Sample Reference
	1052YM-X-WG-RGBW-FL-MV-DMX-With Filter-GREEN Output
Input Power (Watts)	20.84
Input Voltage (Volts AC)	120.03
Input Current (Amps)	0.18
Input Frequency (Hertz)	60.0
Power Factor	0.9725
Total Harmonic Distortion (THD V,A)%	0.1, 14.46

Additional Information	Sample Reference
	1052YM-X-WG-RGBW-FL-MV-DMX-With Filter-GREEN 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:

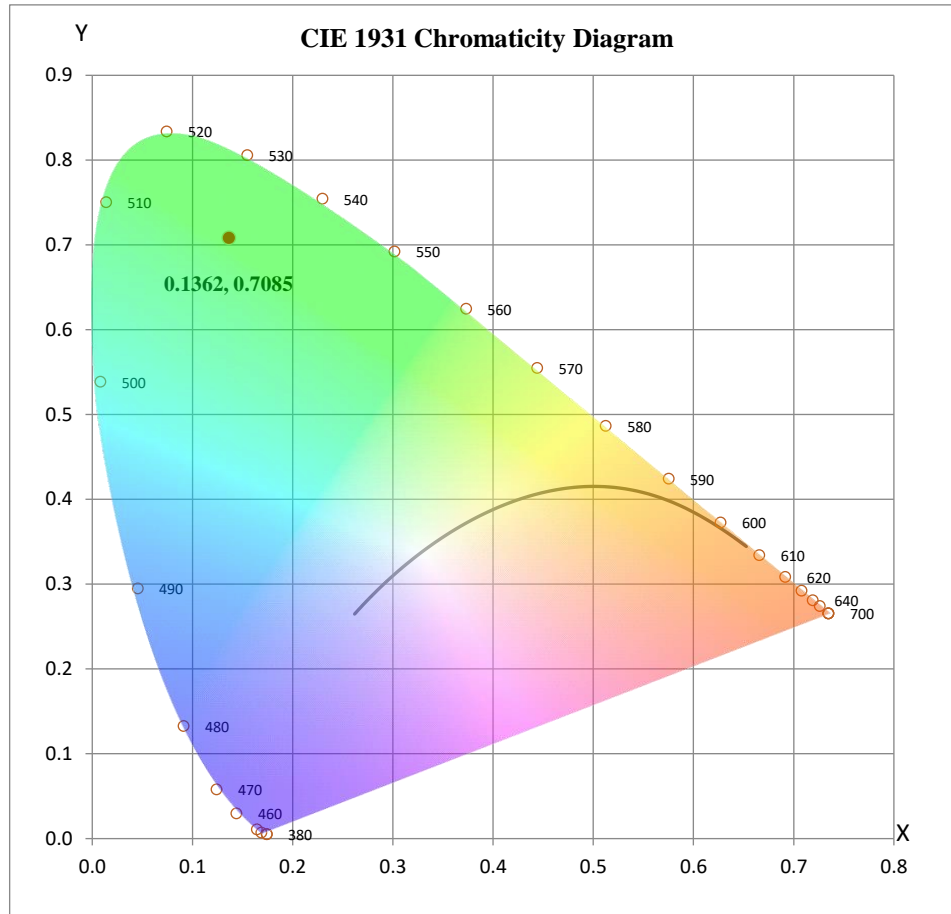


Spectral response of the Radiant Flux
 (380nm to 780nm - calibrated range of the Spectroradiometer)

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Chromaticity Diagram

The following image shows the chromaticity diagram for the sample:

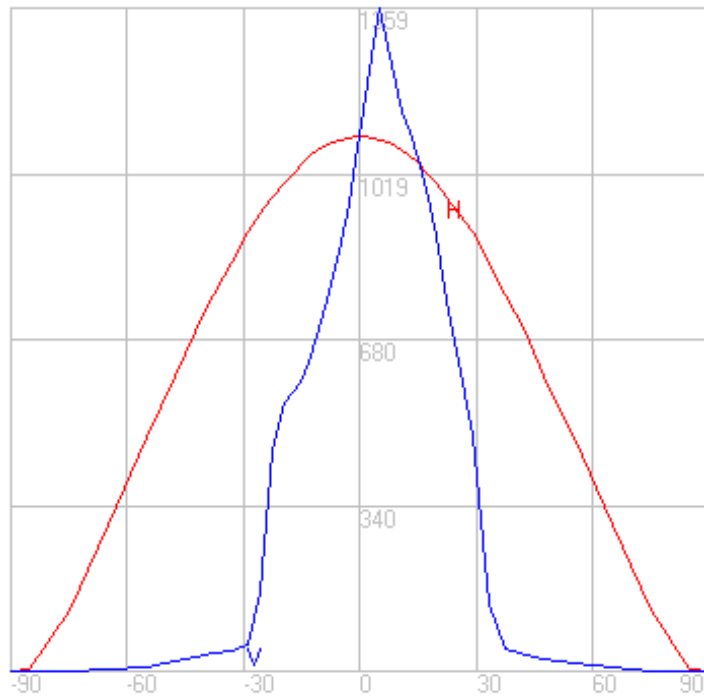
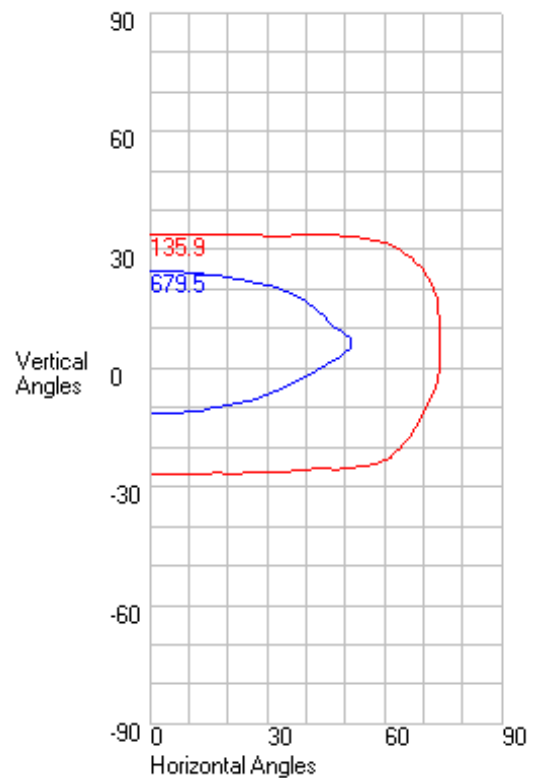


$x = 0.1362$ $y = 0.7085$

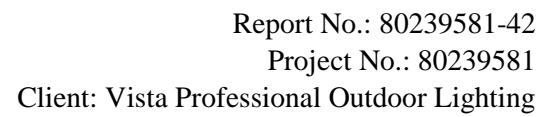
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Photometric Test Results

Characteristics	
NEMA Type	7 H x 4 V
Maximum Candela	1359.00
Maximum Candela Angle	0 H 5 V
Horizontal Beam Angle (50%)	102.70
Vertical Beam Angle (50%)	35.80
Horizontal Field Angle (10%)	148.80
Vertical Field Angle (10%)	59.50
Beam Lumens	714.00
Field Lumens	1201

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	
Vertical Angle	0	1096	1236	1359	1262	1167	1118	1053	973	873	760	648	576	425	158	58	48	40	34	29	24	21	18	15	12	10	9	7	5	4	2	1	0	0	0	0	0	0	0
	5	1096	1232	1354	1268	1166	1123	1058	976	876	766	653	579	440	169	59	48	40	34	29	25	21	18	15	12	10	9	7	5	4	2	1	0	0	0	0	0	0	0
	10	1096	1234	1352	1271	1172	1125	1060	981	883	776	663	586	475	193	64	50	41	35	29	25	21	18	15	13	10	9	7	5	4	2	1	0	0	0	0	0	0	0
	15	1096	1226	1348	1278	1169	1125	1064	991	899	787	676	597	507	229	74	51	42	35	30	26	22	18	16	13	11	9	7	5	4	2	1	0	0	0	0	0	0	0
	20	1096	1226	1343	1287	1174	1127	1071	1002	912	807	699	611	537	312	108	53	44	37	31	27	23	19	16	13	11	9	7	6	4	2	1	0	0	0	0	0	0	0
	25	1096	1221	1339	1305	1184	1133	1082	1017	931	835	726	630	559	420	165	60	47	39	33	28	24	20	17	14	11	9	7	6	4	3	1	0	0	0	0	0	0	0
	30	1096	1215	1334	1321	1196	1141	1088	1028	955	867	762	660	581	495	266	94	51	43	35	30	25	21	18	15	12	10	8	6	4	3	1	0	0	0	0	0	0	0
	35	1096	1209	1326	1335	1213	1151	1105	1047	982	897	800	694	610	541	408	182	67	46	39	33	28	23	19	16	13	10	8	6	5	3	2	0	0	0	0	0	0	0
	40	1096	1202	1312	1344	1239	1154	1116	1064	1003	925	843	741	651	572	505	338	137	54	43	36	30	25	21	17	14	11	9	7	5	3	2	1	0	0	0	0	0	0
	45	1096	1194	1297	1349	1272	1172	1125	1079	1022	957	888	798	704	623	549	475	308	122	52	41	34	28	23	19	16	13	10	7	5	4	2	1	0	0	0	0	0	0
	50	1096	1185	1281	1345	1307	1203	1139	1099	1048	991	926	854	767	682	596	530	458	311	133	53	40	32	26	22	18	14	11	9	6	4	3	1	0	0	0	0	0	0
	55	1096	1177	1263	1329	1330	1247	1162	1106	1067	1017	962	904	836	751	668	585	520	453	341	184	74	40	32	26	21	16	12	9	7	5	3	2	1	0	0	0	0	0
	60	1096	1168	1239	1307	1339	1298	1209	1136	1085	1043	996	942	881	812	739	669	588	517	458	379	262	119	50	33	26	20	15	12	8	6	4	2						

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Version 1.0

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.

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