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Project No.: 80239581
Client: Vista Professional Outdoor Lighting

PHOTOMETRIC TESTING & EVALUATION TO IES LM-79-19

Sample Tested

1052YM-X-NS-RGBW-FL-MV-DMX-With Filter-RED Output

Prepared for:

Vista Professional Outdoor Lighting

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Technical Report Number

80239581-25

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Program Description

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

Executive Summary

Sample Tested = 1052YM-X-NS-RGBW-FL-MV-DMX-With Filter-RED 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 Red 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 (%)
26.63	396.00	14.87	0.9522	16.66

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-NS-RGBW-FL-MV-DMX-With Filter-RED 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-NS-RGBW-FL-MV-DMX-With Filter-RED Output
	Integrating Sphere
Luminous Efficacy (Lumens/Watt)	26.63
Total Luminous Flux (Lumens)	396.00
Total Radiant Flux (Watts)	2.00
Correlated Color Temperature (CCT)	N.A.
Color Rendering Index (CRI)(Ra)	N.A.
R9 Value	N.A.
IES R _f / IES R _g	N.A.
Local Chroma Shift R _{cs,h1}	N.A.
Chromaticity (Chroma x/Chroma y)	0.6977 / 0.3022
Chromaticity (Chroma u/Chroma v)	0.5336 / 0.3466
Chromaticity (Chroma u'/Chroma v')	0.5336 / 0.5199
Duv Value	0.0000
Stabilization Time (Light and Power)	30 minutes
Total Run Time (Integrating Sphere)	35 minutes
Scotopic/Photopic ratio $\Phi(v')/\Phi(v)$	0.03

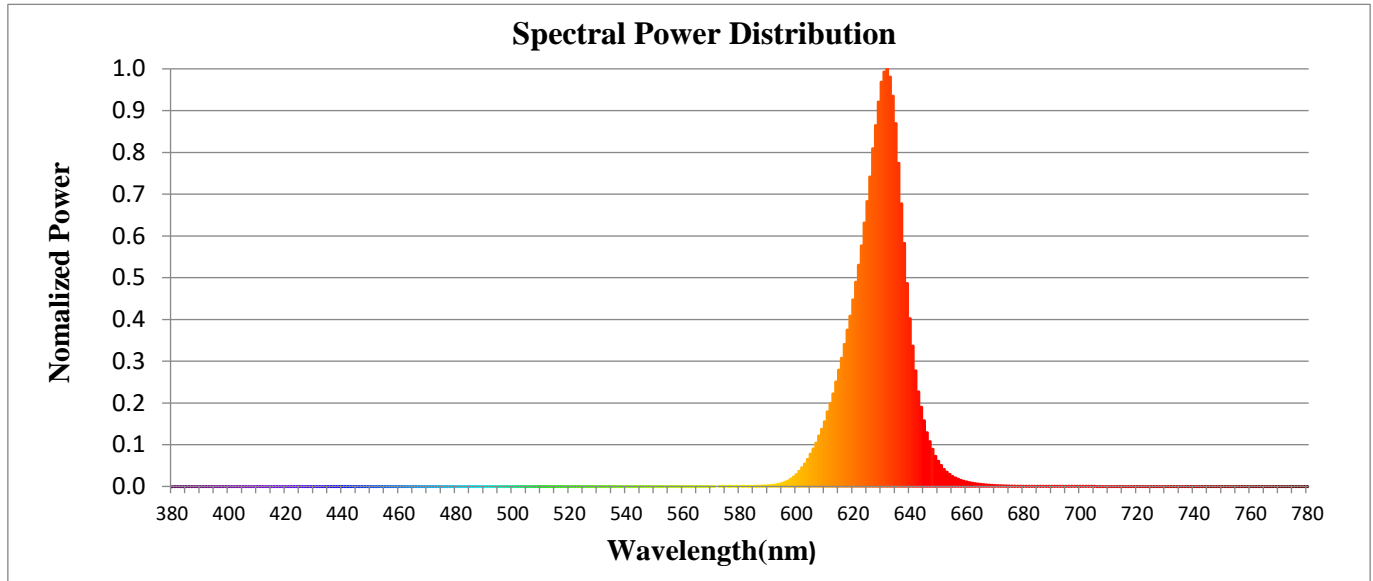
Electrical Input Results:	Sample Reference
	1052YM-X-NS-RGBW-FL-MV-DMX-With Filter-RED Output
Input Power (Watts)	14.87
Input Voltage (Volts AC)	120.00
Input Current (Amps)	0.13
Input Frequency (Hertz)	60.0
Power Factor	0.9522
Total Harmonic Distortion (THD V,A)%	0.11, 16.66

Additional Information	Sample Reference
	1052YM-X-NS-RGBW-FL-MV-DMX-With Filter-RED Output
Ambient Temperature	25°C
Integrating Sphere Detector	CDS 2600 Spectroradiometer
Absorption Correction Used?	Yes
Date Tested	2/11/2025

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Spectral Flux

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

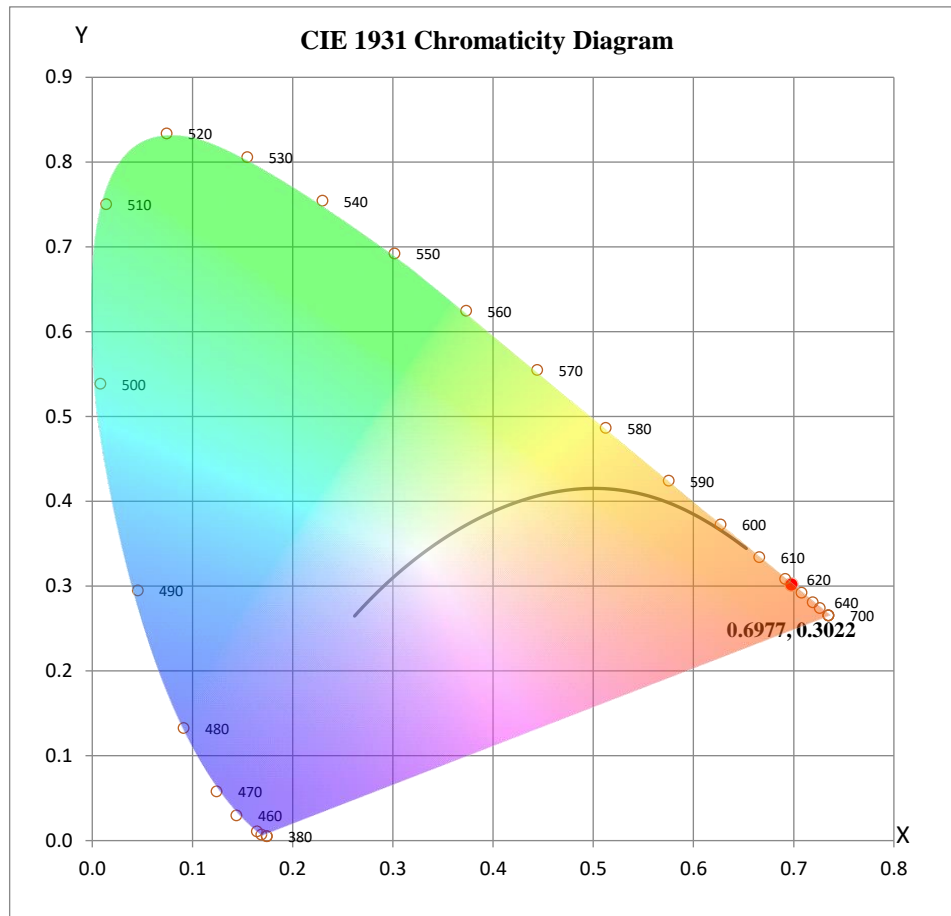


Spectral response of the Radiant Flux
 (380nm to 780nm - calibrated range of the Spectroradiometer)

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Chromaticity Diagram

The following image shows the chromaticity diagram for the sample:

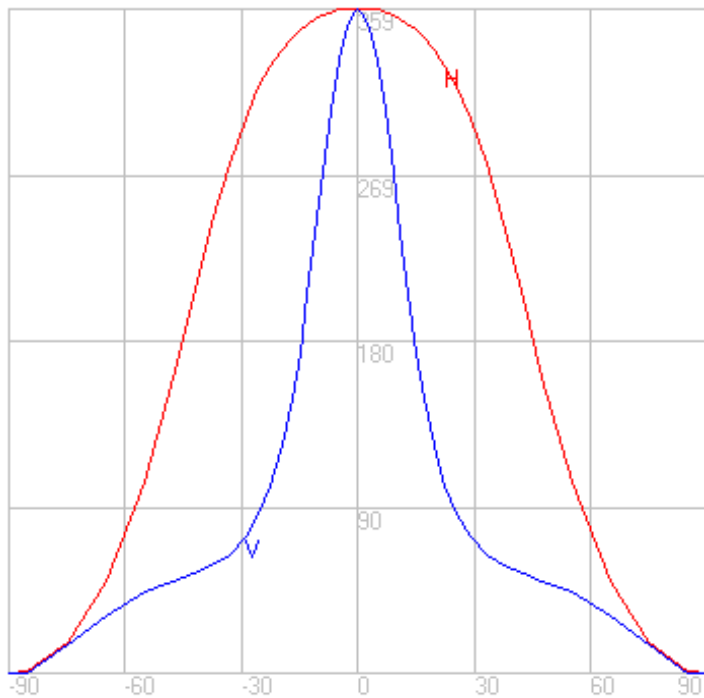
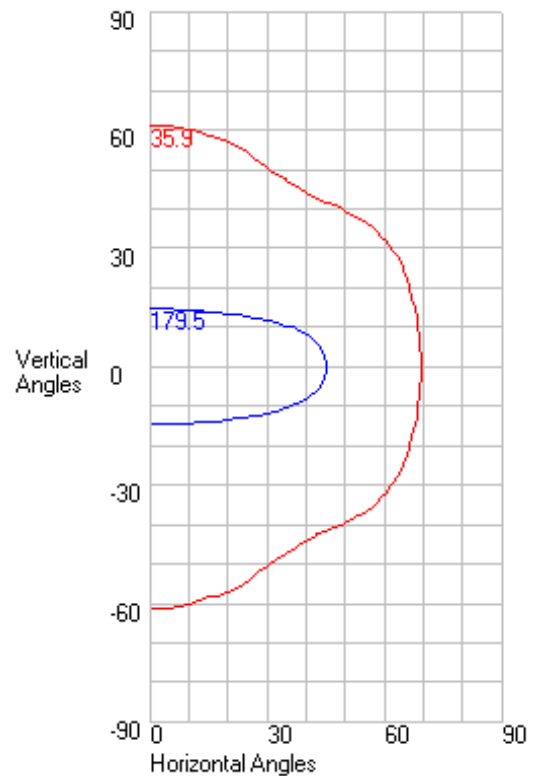


$x = 0.6977$ $y = 0.3022$

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Photometric Test Results

Characteristics	
NEMA Type	7 H x 6 V
Maximum Candela	359.00
Maximum Candela Angle	-5 H 0 V
Horizontal Beam Angle (50%)	90.50
Vertical Beam Angle (50%)	29.20
Horizontal Field Angle (10%)	138.50
Vertical Field Angle (10%)	122.50
Beam Lumens	163.00
Field Lumens	354

Axial Candela Display

Isocandela Curves


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Candela Tabulation

		Vertical Angle																																					
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	359	354	332	297	254	213	173	143	119	101	88	78	71	65	61	58	56	54	52	50	48	46	44	41	38	35	31	27	23	19	15	10	6	2	0	0	0	
	5	359	352	331	297	255	212	174	143	120	102	88	78	71	65	61	58	56	54	52	50	48	46	44	41	38	35	31	27	23	19	14	10	6	2	0	0	0	
	10	359	352	331	298	256	214	176	145	121	103	89	79	72	66	62	58	56	53	51	50	48	45	43	41	38	34	31	27	23	19	14	10	6	2	0	0	0	
	15	359	353	332	301	259	218	180	148	124	105	91	81	72	66	62	58	56	53	51	49	47	45	42	40	37	34	30	26	22	18	14	10	6	2	0	0	0	
	20	359	352	334	303	264	222	185	153	128	108	93	82	74	67	62	59	55	53	50	48	46	44	41	39	36	33	29	25	22	17	13	9	6	2	0	0	0	
	25	359	353	336	307	269	229	191	159	133	113	97	85	76	69	63	59	56	53	50	48	45	43	40	38	35	32	28	24	21	17	13	9	5	2	0	0	0	
	30	359	354	337	310	276	237	200	167	140	118	102	89	79	71	65	60	56	53	50	47	45	42	39	37	34	30	27	23	20	16	12	8	5	2	0	0	0	
	35	359	354	339	315	283	246	209	176	149	126	108	94	83	74	67	62	57	53	50	47	44	41	38	35	32	29	26	22	19	15	11	8	5	2	0	0	0	
	40	359	355	342	320	291	257	221	188	160	136	117	101	89	79	71	64	59	54	51	47	44	41	38	35	32	28	25	22	18	14	11	7	4	2	0	0	0	
	45	359	355	344	325	300	268	235	203	173	148	127	110	96	85	76	68	62	57	52	48	44	41	38	34	31	28	24	21	17	14	10	7	4	2	0	0	0	
	50	359	356	346	331	308	281	250	219	190	164	141	122	107	94	83	74	67	61	55	50	46	42	38	35	31	28	24	21	17	13	10	7	4	2	0	0	0	
	55	359	357	349	336	317	294	266	237	209	182	158	138	120	106	93	83	74	67	60	55	49	45	40	36	32	28	25	21	17	13	10	7	4	2	0	0	0	
	60	359	357	351	340	326	306	283	257	230	204	180	158	139	122	108	95	85	76	68	61	55	49	44	39	35	31	26	22	18	14	10	7	4	2	0	0	0	
	65	359	358	353	345	334	319	300	278	254	230	206	183	162	144	127	113	101	90	80	72	64	57	51	45	39	34	29	24	20	15	11	7	4	2	0	0	0	
	70	359	358	355	349	341	330	316	299	279	258	235	213	191	171	153	137	122	109	98	87	78	69	61	53	46	40	34	28	22	17	12	8	5	2	0	0	0	
	75	359	359	357	353	347	340	329	317	302	285	266	246	225	205	185	167	151	135	121	108	96	85	74	65	56	47	40	32	26	20	14	9	6	3	1	0	0	
	80	359	359	358	355	352	346	340	331	321	308	294	277	259	240	221	202	183	165	148	132	116	102	89	76	65	55	45	36	29	22	16	10	6	3	1	0	0	
	85	359	359	358	356	354	350	346	339	332	323	312	300	285	269	250	231	212	191	171	152	133	116	100	85	72	59	49	39	30	23	16	11	6	3	1	0	0	
90	359	359	359	357	355	352	348	343	337	329	320	308	295	280	262	244	224	203	181	160	140	121	104	88	74	61	50	40	31	23	17	11	6	3	1	0	0		

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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.

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