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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-BLUE Output

Prepared for:

Vista Professional Outdoor Lighting

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Technical Report Number

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Program Description

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

Executive Summary

Sample Tested = 1052YM-X-NS-RGBW-FL-MV-DMX-With Filter-BLUE 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 Blue 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 (%)
10.60	213.00	20.10	0.9680	14.62

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-BLUE 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-BLUE Output
	Integrating Sphere
Luminous Efficacy (Lumens/Watt)	10.60
Total Luminous Flux (Lumens)	213.00
Total Radiant Flux (Watts)	3.27
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)	0.1353 / 0.0557
Chromaticity (Chroma u/Chroma v)	0.1593 / 0.0984
Chromaticity (Chroma u'/Chroma v')	0.1593 / 0.1476
Duv Value	0.1800
Stabilization Time (Light and Power)	30 minutes
Total Run Time (Integrating Sphere)	35 minutes
Scotopic/Photopic ratio $\Phi(v')/\Phi(v)$	16.57

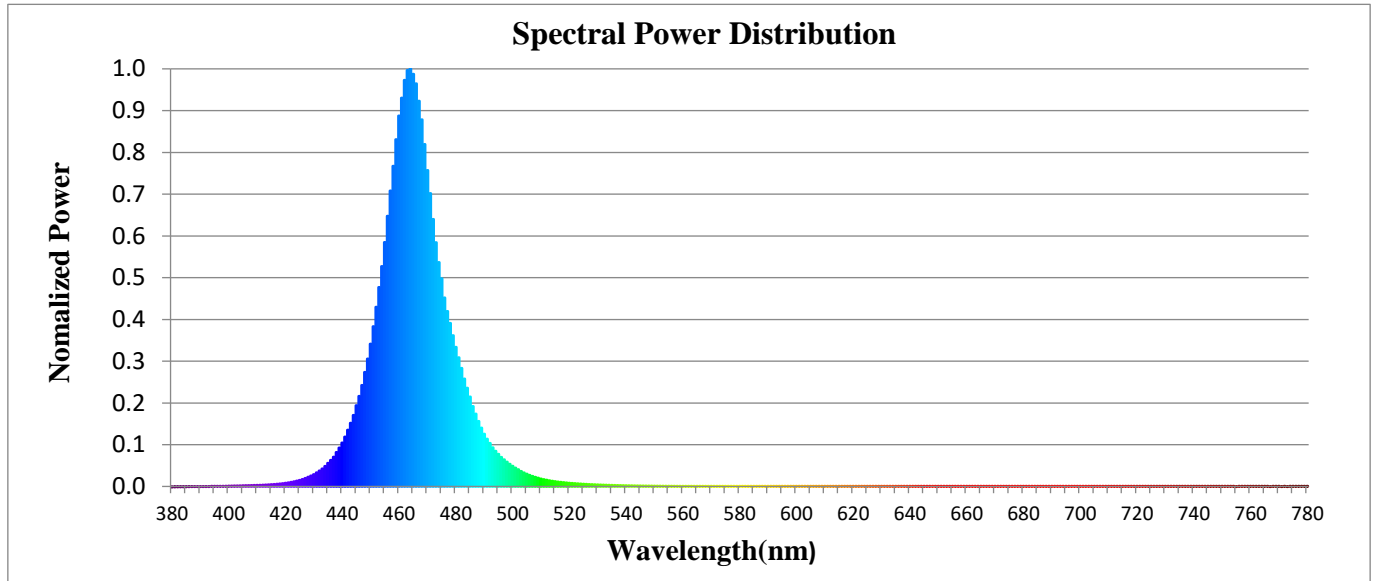
Electrical Input Results:	Sample Reference
	1052YM-X-NS-RGBW-FL-MV-DMX-With Filter-BLUE Output
Input Power (Watts)	20.10
Input Voltage (Volts AC)	120.12
Input Current (Amps)	0.17
Input Frequency (Hertz)	60.0
Power Factor	0.9680
Total Harmonic Distortion (THD V,A)%	0.11, 14.62

Additional Information	Sample Reference
	1052YM-X-NS-RGBW-FL-MV-DMX-With Filter-BLUE 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:

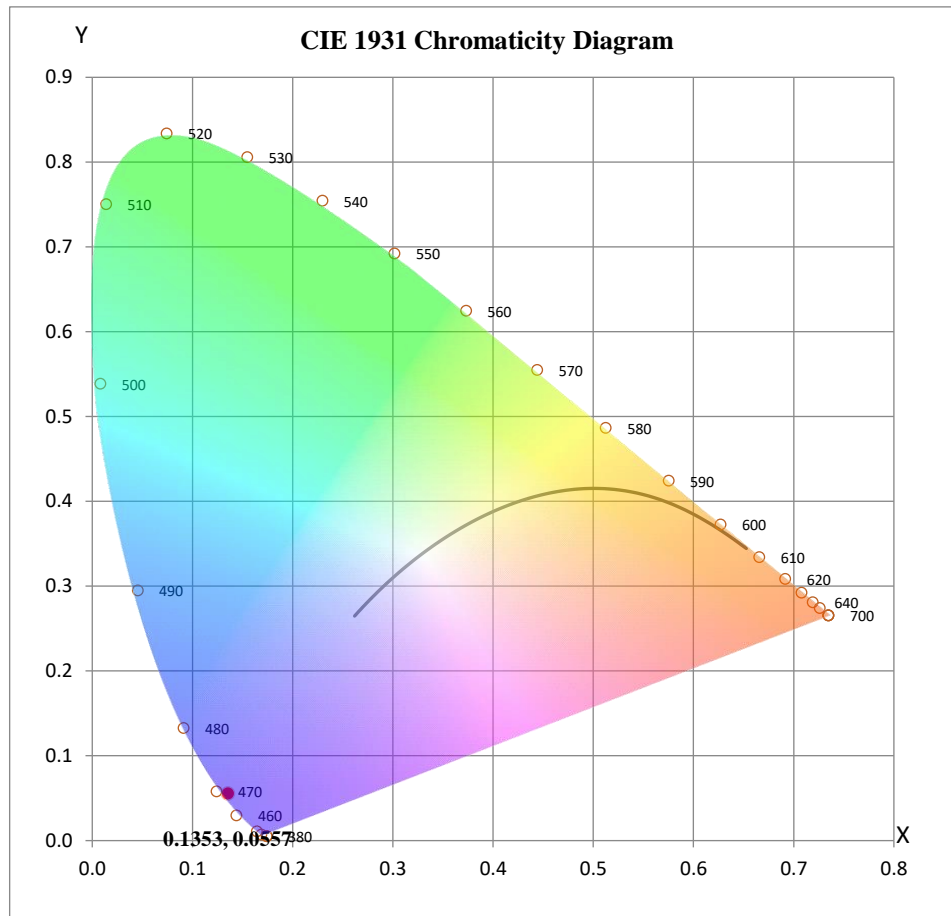


Spectral response of the Radiant Flux
 (380nm to 780nm - calibrated range of the Spectroradiometer)

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Chromaticity Diagram

The following image shows the chromaticity diagram for the sample:

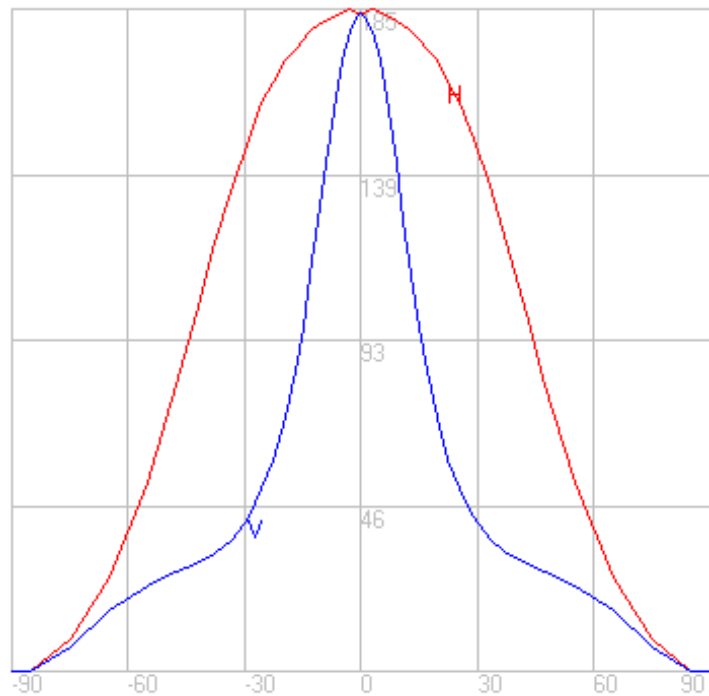
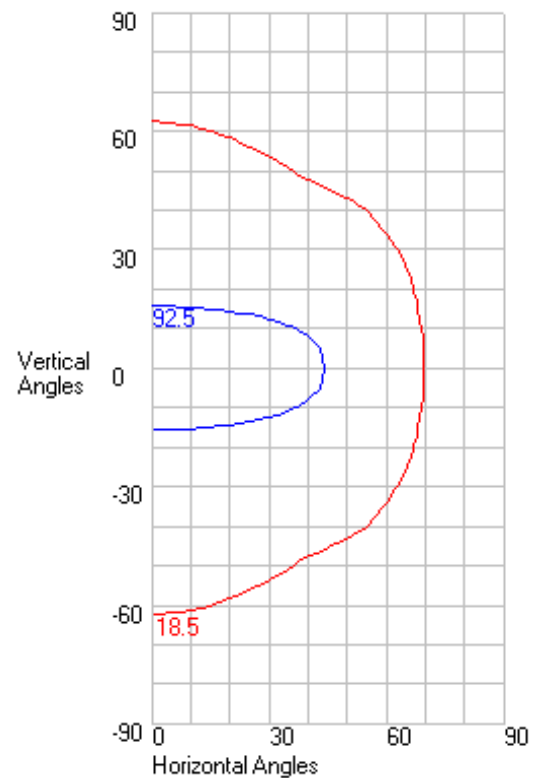


$x = 0.1353$ $y = 0.0557$

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Photometric Test Results

Characteristics	
NEMA Type	7 H x 6 V
Maximum Candela	185.00
Maximum Candela Angle	-3 H 0 V
Horizontal Beam Angle (50%)	88.80
Vertical Beam Angle (50%)	31.20
Horizontal Field Angle (10%)	138.80
Vertical Field Angle (10%)	123.80
Beam Lumens	86.00
Field Lumens	194

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	184	181	171	154	134	115	96	81	69	59	52	46	41	38	35	33	32	30	29	28	26	25	24	22	21	19	17	14	12	10	7	5	3	1	0	0	0	
	5	184	181	170	154	135	115	97	81	69	59	52	46	42	38	35	33	32	30	29	28	27	25	24	22	20	19	16	14	12	10	7	5	3	1	0	0	0	
	10	184	180	170	154	135	116	97	82	70	60	52	47	42	38	36	33	32	30	29	28	26	25	24	22	20	18	16	14	12	9	7	5	2	1	0	0	0	
	15	184	181	171	156	137	117	99	84	71	61	53	47	43	39	36	34	32	30	29	27	26	25	23	22	20	18	16	14	11	9	7	5	2	1	0	0	0	
	20	184	181	171	157	139	120	102	86	73	63	55	49	43	39	36	34	32	30	28	27	26	24	23	21	19	18	15	13	11	9	7	4	2	0	0	0	0	
	25	184	181	172	158	141	122	105	89	76	65	57	50	45	40	37	34	32	30	28	27	25	24	22	21	19	17	15	13	11	8	6	4	2	1	0	0	0	
	30	184	181	173	160	144	126	109	93	80	68	59	52	46	42	38	35	32	30	28	27	25	24	22	20	18	16	15	12	10	8	6	4	2	0	0	0	0	
	35	184	182	174	163	148	130	113	98	84	72	63	55	49	44	40	36	33	31	29	27	25	23	21	20	18	16	14	12	10	8	6	4	2	0	0	0	0	
	40	184	182	175	165	151	135	119	103	89	77	67	59	52	46	42	38	35	32	29	27	25	23	21	19	18	16	14	12	9	7	5	4	2	0	0	0	0	
	45	184	182	176	167	155	140	125	110	96	83	73	64	56	50	45	40	37	33	30	28	26	24	21	19	18	16	13	11	9	7	5	3	2	0	0	0	0	
	50	184	182	177	170	159	146	132	117	103	91	80	70	62	55	49	44	39	36	32	30	27	24	22	20	18	16	13	11	9	7	5	3	2	0	0	0	0	
	55	184	182	179	172	163	152	139	126	112	99	88	78	69	61	54	49	44	39	35	32	29	26	24	21	19	16	14	12	9	7	5	3	2	0	0	0	0	
	60	184	183	180	174	167	158	147	135	122	110	98	88	78	69	62	55	49	44	40	36	32	29	26	23	20	18	15	12	10	8	5	3	2	0	0	0	0	
	65	184	183	181	177	171	164	155	144	133	122	110	99	89	80	71	64	57	51	46	41	37	33	29	26	23	19	17	14	11	8	6	4	2	0	0	0	0	
	70	184	183	182	179	174	169	162	153	144	134	123	112	102	93	83	75	68	61	55	49	44	39	34	30	26	22	19	15	12	9	7	4	2	1	0	0	0	
	75	184	184	183	180	177	173	168	162	154	146	137	127	117	107	98	89	80	72	65	58	52	46	40	35	30	26	21	18	14	10	7	5	2	1	0	0	0	
	80	184	184	183	182	180	177	173	168	163	156	148	140	131	122	113	103	94	85	77	68	61	53	47	40	34	29	24	19	15	11	8	5	3	1	0	0	0	
	85	184	184	184	183	181	178	176	172	168	163	157	150	142	133	124	115	105	96	86	76	68	59	51	44	37	31	26	21	16	12	8	6	3	1	0	0	0	
90	184	185	184	183	182	179	177	173	170	165	160	153	146	138	129	120	110	100	89	80	70	61	53	45	38	32	26	21	16	12	9	6	3	1	0	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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