



**Report Number: REP-122024-03**

## **LM-79-08 Luminaire Photometric Report**

### **Device Under Test**

Finelite, Inc.  
HPR-DM-ANR-2X4-DCO-SIDES-H-B-935  
HPR Series

### **Report Date**

12/20/2024

### **Goniophotometric Examination**

KPL2008-95  
6/19/2024

**Examined By:**  
Laura Robertson

**Approved By:**  
Joe Guarino

### **Spectroradiometric Examination**

CCT5554  
06-14-2024

**Examined By:**  
Laura Robertson

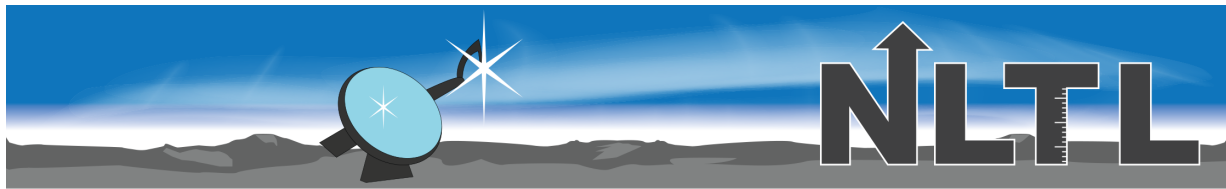
**Approved By:**  
Joe Guarino

Northern Lights Testing Laboratories certifies that the attached reports have been independently produced in accordance with IESNA LM-79-08, Approved Method: Electric and Photometric Measurement of Solid-State Lighting Products. Photometric measurements are taken using an Integrating Sphere system and Type C goniophotometer for measuring total luminous flux, luminous intensity distribution, and color spatial uniformity. Products tested are operated in the intended orientation in application. All test equipment is calibrated regularly with standards traceable to NIST, and in accordance with ISO17025-2005 procedures. Northern Lights Testing Laboratories is an Accredited Organization, accredited by the International Accreditation Service, Inc. (IAS) to ISO/IEC 17025-2005. IAS is an ILAC-MRA Signatory Testing, Calibration, Inspection. Northern Lights Testing Laboratories is an Approved Lab Partner and is on the LED Lighting Facts Approved Labs List.



IAS Accreditation No. TL-479





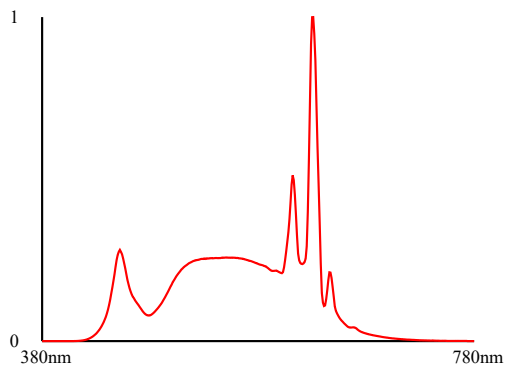
## NORTHERN LIGHTS TESTING LABORATORIES

### Spectral Results

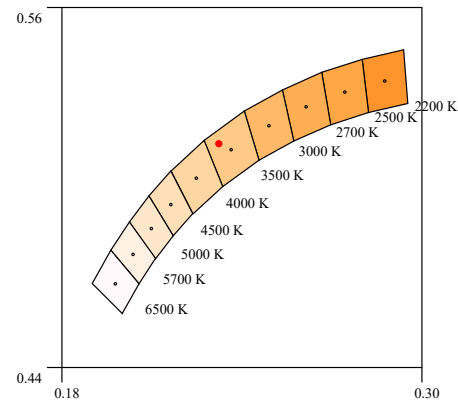
**CCT:** 3567 K  
**xy Coordinates:** 0.4052 , 0.3989  
**u'v' Coordinates:** 0.2323, 0.5146  
**Delta u'v':** +0.00358

**Luminous Flux:** 6832.36 lm  
**Radiant Flux:** 13.67883 W  
**Electrical Power:** 48.921 W  
**Efficacy:** 139.7 lm/W  
**Melanopic Flux:** 4519 mel lm  
**Melanopic Ratio:** 0.66

### Spectral Power Distribution

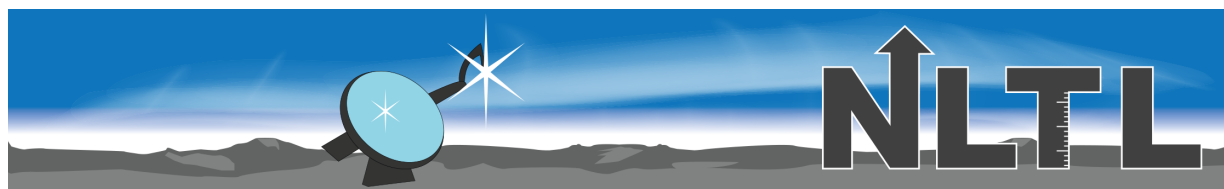


### CIE u'v' (1976)



### Color Rendering Index

Ra	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
95	94	99	89	92	97	98	96	93	92	94	88	78	96	92	95



# NORTHERN LIGHTS TESTING LABORATORIES

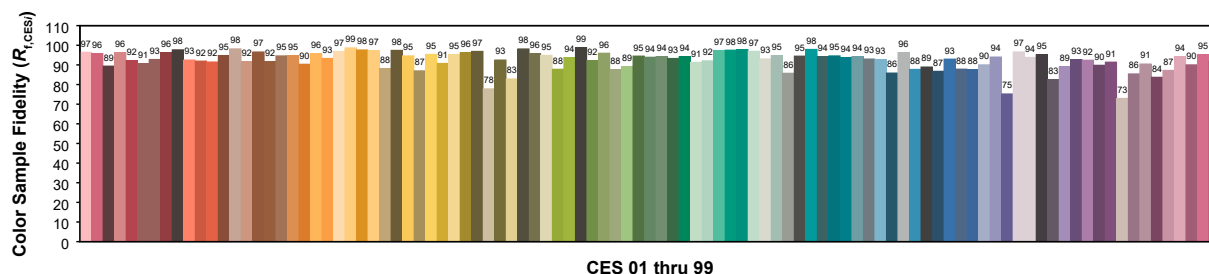
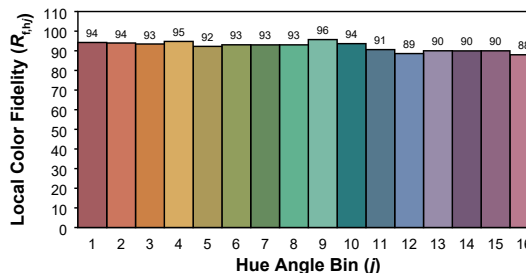
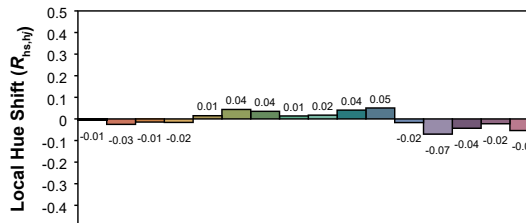
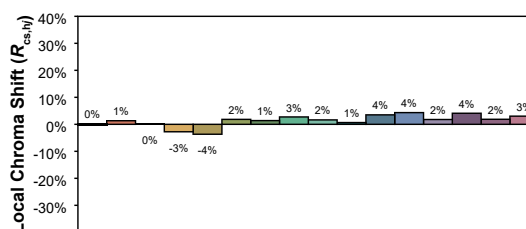
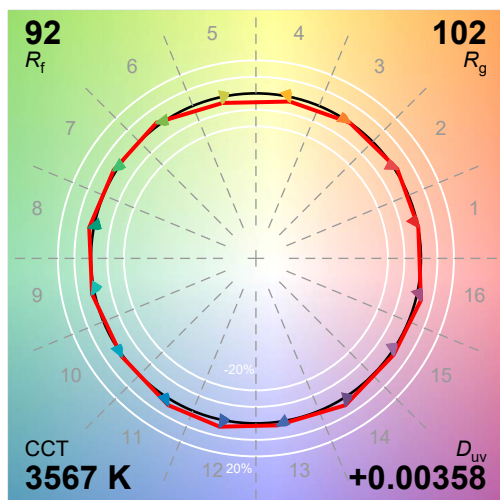
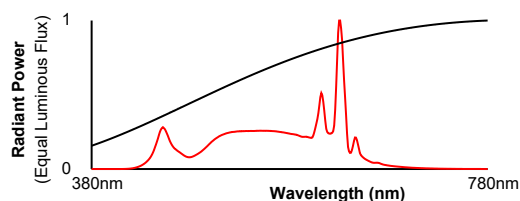
## IES TM-30-18 Color Rendition Report

Source: HPR (REF# 22995689)

Date: 06-14-2024

Manufacturer: Finelite, Inc.

Model: HPR-DM-ANR-2X4-DCO-SIDES-H-B-935



CES 01 thru 99

x: 0.4052  
y: 0.3989  
u': 0.2323  
v': 0.5146

CIE 13.3 1995

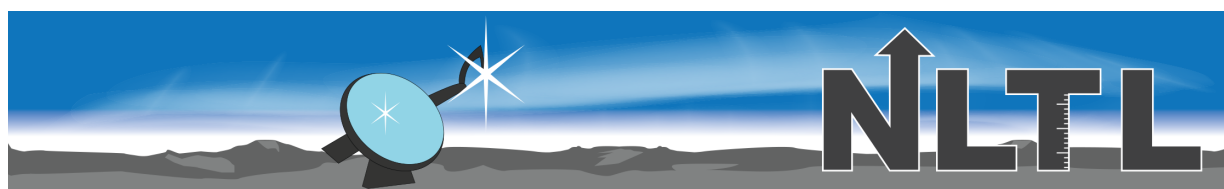
CRI Ra: 95  
CRI R9: 92

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## ***NORTHERN LIGHTS TESTING LABORATORIES***

### **Performance Summary**

#### **Input**

Watts	48.92 W
Number of Lamps	320
Lumens per Lamp	N/A
Total Lamp Lumens	N/A

#### **Output**

Output Lumens	6832.36 lm
Efficiency	N/A %
Efficacy	139.66 lm/W

#### **Luminous Dimensions**

Length	4 ft
Width	2 ft
Height	0 ft

#### **Roadway CU**

Mounting Heights	1	2	4	6	8	10
House Side CU	0.38	0.46	0.49	0.49	0.50	0.50
Street Side CU	0.38	0.46	0.49	0.49	0.50	0.50

#### **Spacing Criterion**

Two luminaires, 0°-180° plane	1.2
Two luminaires, 90°-270° plane	1.15
Four luminaires, diagonal	1.27

#### **Full Beam Angle**

0°-180° plane	99.4°
90°-270° plane	95.17°

#### **Roadway Summary**

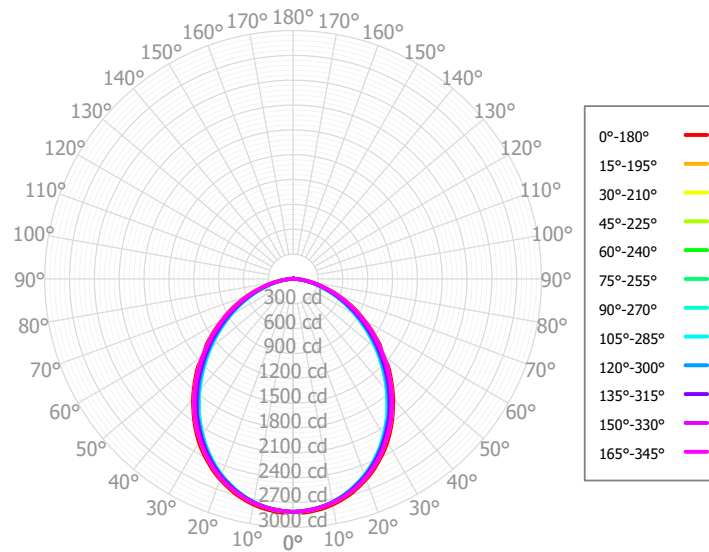
IESNA lateral classification	Type II
IESNA vertical classification	Undefined (Very Short)
Cutoff classification	Cutoff
IESNA TM-15-11 BUG Rating	B3 U2 G2
Maximum Candela	2826.2 cd 0° horizontal 2.5° vertical
Street side total	49.9%
House side total	49.9%

#### **Luminaire Luminance**

	0.00°	45.00°	90.00°
0.00°	3782	3782	3782
45.00°	3168	3013	2909
55.00°	2847	2663	2536
65.00°	2503	2276	2145
75.00°	1950	1815	1702
85.00°	1518	1327	1180



### Candela Polar Plot

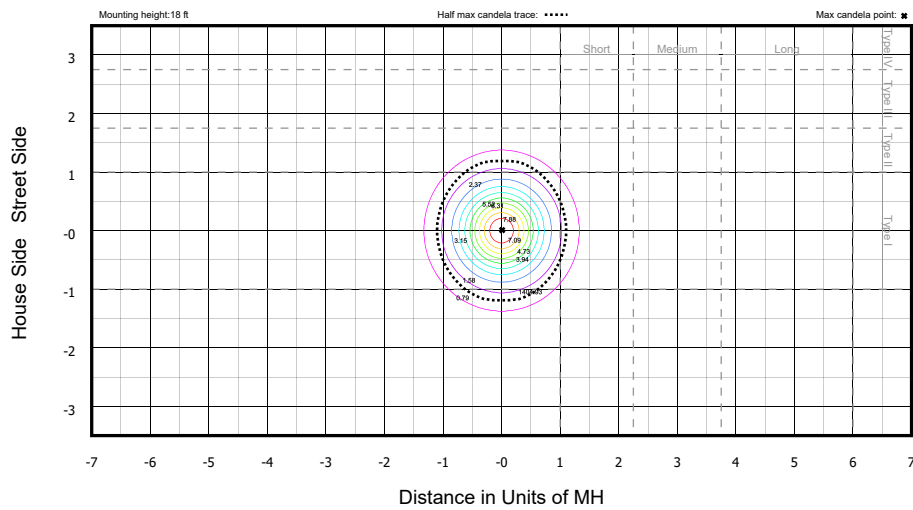


### Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 20.00°	1017	15%	60.00° - 80.00°	1091	16%
0.00° - 30.00°	2117	31%	70.00° - 80.00°	376	6%
0.00° - 40.00°	3380	49%	80.00° - 90.00°	98	1%
0.00° - 60.00°	5624	82%	90.00° - 110.00°	5	0%
0.00° - 80.00°	6714	98%	90.00° - 120.00°	7	0%
0.00° - 90.00°	6812	100%	90.00° - 130.00°	9	0%
10.00° - 90.00°	6543	96%	90.00° - 150.00°	15	0%
20.00° - 40.00°	2363	35%	90.00° - 180.00°	20	0%
20.00° - 50.00°	3587	53%	110.00° - 180.00°	15	0%
40.00° - 70.00°	2958	43%	0.00° - 180.00°	6832	100%

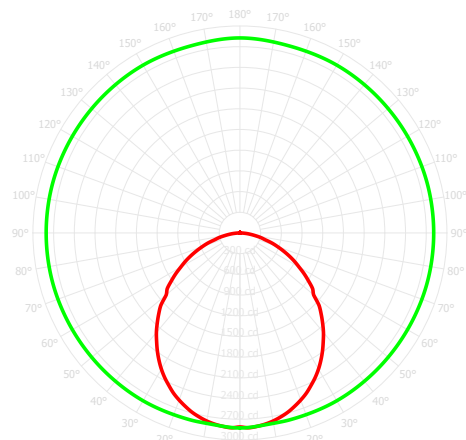


### Iso-Illuminance

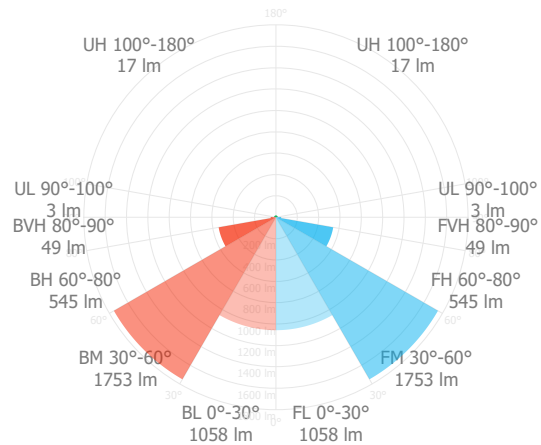


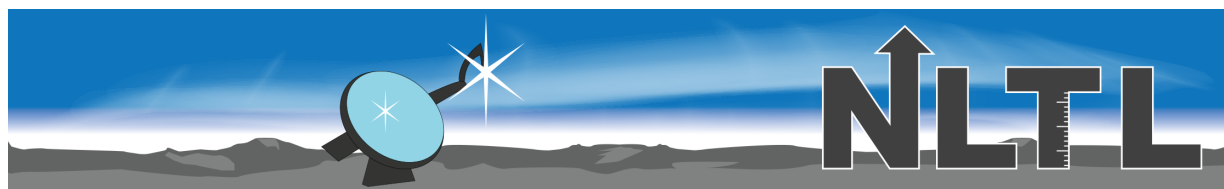
### Peak Intensity Plane and Cone

Maximum Candela = 2826.2 cd  
0° horizontal, 2.5° vertical



### IES TM-15-11 LCS Plot





## NORTHERN LIGHTS TESTING LABORATORIES

### Candela Table

	0.00°	15.00°	30.00°	45.00°	60.00°	75.00°	90.00°	105.00°	120.00°	135.00°	150.00°	165.00°	180.00°	195.00°	210.00°	225.00°	240
0.00°	2811.94	2811.94	2811.94	2811.94	2811.94	2811.94	2811.94	2811.94	2811.94	2811.94	2811.94	2811.94	2811.94	2811.94	2811.94	2811.94	281
2.50°	2826.20	2803.02	2808.00	2804.62	2804.05	2808.10	2808.14	2808.10	2804.05	2804.62	2808.00	2803.02	2826.20	2803.02	2808.00	2804.62	280
5.00°	2814.25	2791.03	2795.59	2792.02	2789.95	2793.29	2794.32	2793.29	2789.95	2792.02	2795.59	2791.03	2814.25	2791.03	2795.59	2792.02	278
7.50°	2795.07	2770.58	2771.05	2769.69	2767.90	2769.69	2770.44	2769.69	2767.90	2769.69	2771.05	2770.58	2795.07	2770.58	2771.05	2769.69	276
10.00°	2767.81	2743.03	2747.12	2739.65	2735.75	2737.86	2736.78	2737.86	2735.75	2739.65	2747.12	2743.03	2767.81	2743.03	2747.12	2739.65	273
12.50°	2730.86	2709.19	2709.00	2702.51	2694.10	2696.63	2695.13	2696.63	2694.10	2702.51	2709.00	2709.19	2730.86	2709.19	2709.00	2702.51	269
15.00°	2688.36	2666.78	2664.62	2655.12	2645.77	2647.70	2642.67	2647.70	2645.77	2655.12	2664.62	2666.78	2688.36	2666.78	2664.62	2655.12	264
17.50°	2634.39	2615.49	2611.87	2599.37	2587.95	2590.39	2584.47	2590.39	2587.95	2599.37	2611.87	2615.49	2634.39	2615.49	2611.87	2599.37	258
20.00°	2576.94	2557.81	2549.63	2538.40	2525.98	2522.36	2519.03	2522.36	2525.98	2538.40	2549.63	2557.81	2576.94	2557.81	2549.63	2538.40	252
22.50°	2513.95	2491.48	2483.91	2467.46	2454.15	2448.98	2448.04	2448.98	2454.15	2467.46	2483.91	2491.48	2513.95	2491.48	2483.91	2467.46	245
25.00°	2437.98	2417.15	2408.88	2390.17	2374.70	2365.54	2362.86	2365.54	2374.70	2390.17	2408.88	2417.15	2437.98	2417.15	2408.88	2390.17	237
27.50°	2362.11	2336.67	2328.77	2306.30	2289.10	2277.77	2279.46	2277.77	2289.10	2306.30	2328.77	2336.67	2362.11	2336.67	2328.77	2306.30	228
30.00°	2277.58	2246.51	2241.24	2213.32	2198.60	2183.32	2179.99	2183.32	2198.60	2213.32	2241.24	2246.51	2277.58	2246.51	2241.24	2213.32	219
32.50°	2184.59	2161.65	2145.76	2118.92	2098.14	2086.53	2081.36	2086.53	2098.14	2118.92	2145.76	2161.65	2184.59	2161.65	2145.76	2118.92	209
35.00°	2086.43	2066.69	2048.83	2021.04	2007.93	1980.42	1977.84	1980.42	2007.93	2021.04	2048.83	2066.69	2086.43	2066.69	2048.83	2021.04	200
37.50°	1983.20	1965.52	1945.54	1914.56	1890.26	1876.77	1863.79	1876.77	1890.26	1914.56	1945.54	1965.52	1983.20	1965.52	1945.54	1914.56	189
40.00°	1883.25	1859.51	1840.38	1808.22	1778.42	1761.82	1756.89	1761.82	1778.42	1808.22	1840.38	1859.51	1883.25	1859.51	1840.38	1808.22	177
42.50°	1773.91	1753.79	1727.83	1699.39	1668.23	1648.76	1642.37	1648.76	1668.23	1699.39	1727.83	1753.79	1773.91	1753.79	1727.83	1699.39	166
45.00°	1665.50	1639.31	1618.39	1583.65	1554.69	1534.72	1529.17	1534.72	1554.69	1583.65	1618.39	1639.31	1665.50	1639.31	1618.39	1583.65	155
47.50°	1555.78	1533.40	1507.73	1472.19	1441.16	1418.97	1416.81	1418.97	1441.16	1472.19	1507.73	1533.40	1555.78	1533.40	1507.73	1472.19	144
50.00°	1393.78	1419.77	1395.05	1355.79	1329.56	1309.39	1305.68	1309.39	1329.56	1355.79	1395.05	1419.77	1393.78	1419.77	1395.05	1355.79	132
52.50°	1327.96	1306.43	1282.64	1246.77	1219.18	1197.84	1189.09	1197.84	1219.18	1246.77	1282.64	1306.43	1327.96	1306.43	1282.64	1246.77	121
55.00°	1214.01	1198.68	1172.50	1135.69	1106.96	1086.80	1081.44	1086.80	1106.96	1135.69	1172.50	1198.68	1214.01	1198.68	1172.50	1135.69	110
57.50°	1104.85	1088.58	1059.01	1026.39	998.79	976.46	973.69	976.46	998.79	1026.39	1059.01	1088.58	1104.85	1088.58	1059.01	1026.39	998
60.00°	990.24	979.94	950.70	917.89	891.94	878.91	867.91	878.91	891.94	917.89	950.70	979.94	990.24	979.94	950.70	917.89	891
62.50°	890.67	873.46	844.64	816.44	789.59	776.01	771.64	776.01	789.59	816.44	844.64	873.46	890.67	873.46	844.64	816.44	789
65.00°	786.40	769.05	741.08	714.94	691.81	678.98	673.95	678.98	691.81	714.94	741.08	769.05	786.40	769.05	741.08	714.94	691
67.50°	681.66	664.26	642.22	615.51	593.93	583.87	578.89	583.87	593.93	615.51	642.22	664.26	681.66	664.26	642.22	615.51	593
70.00°	580.30	568.88	547.06	523.18	506.07	495.26	488.44	495.26	506.07	523.18	547.06	568.88	580.30	568.88	547.06	523.18	506
72.50°	485.72	465.83	453.14	431.09	420.28	395.86	399.03	395.86	420.28	431.09	453.14	465.83	485.72	465.83	453.14	431.09	420
75.00°	375.17	376.01	364.24	349.29	338.28	329.72	327.48	329.72	338.28	349.29	364.24	376.01	375.17	376.01	364.24	349.29	338
77.50°	309.62	303.39	286.48	271.01	262.39	254.14	254.24	254.14	262.39	271.01	286.48	303.39	309.62	303.39	286.48	271.01	262
80.00°	226.04	223.80	210.13	199.62	191.66	186.36	182.44	186.36	191.66	199.62	210.13	223.80	226.04	223.80	210.13	199.62	191
82.50°	156.83	152.59	144.49	136.99	127.66	123.60	121.06	123.60	127.66	136.99	144.49	152.59	156.83	152.59	144.49	136.99	127
85.00°	98.38	96.31	91.71	86.00	78.06	77.82	76.43	77.82	78.06	86.00	91.71	96.31	98.38	96.31	91.71	86.00	78

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### Coefficients of Utilization – Zonal Cavity Method

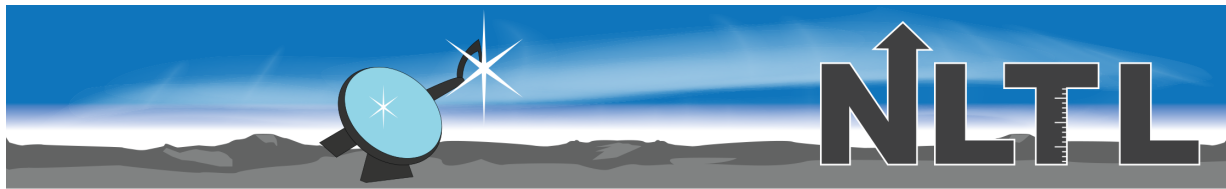
Values are lumens delivered to the workplane.

	<b>pfc</b>	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	0.00%
	<b>pcc</b>	80.00%	80.00%	80.00%	70.00%	70.00%	70.00%	50.00%	50.00%	30.00%	30.00%	30.00%	10.00%	10.00%	10.00%	0.00%
	<b>pw</b>	70.00%	50.00%	30.00%	70.00%	50.00%	30.00%	50.00%	30.00%	50.00%	30.00%	0.00%	50.00%	30.00%	10.00%	0.00%
	<b>0.00</b>	8129	8129	8129	7938	7938	7938	7580	7580	7254	7254	7254	6953	6953	6953	6812
	<b>1.00</b>	7472	7165	6889	7286	7008	6758	6716	6510	6447	6280	6052	6199	6065	5940	5799
	<b>2.00</b>	6830	6295	5853	6651	6165	5759	5922	5581	5697	5413	5050	5489	5255	5046	4901
	<b>3.00</b>	6254	5566	5034	6086	5458	4964	5254	4831	5065	4706	4271	4889	4586	4327	4181
	<b>4.00</b>	5747	4960	4383	5592	4869	4331	4697	4229	4537	4133	3664	4389	4041	3753	3608
<b>RCR</b>	<b>5.00</b>	5301	4453	3861	5158	4376	3820	4231	3741	4095	3665	3184	3969	3593	3290	3149
	<b>6.00</b>	4908	4026	3434	4778	3961	3402	3837	3339	3722	3279	2799	3614	3221	2914	2776
	<b>7.00</b>	4561	3663	3081	4443	3608	3056	3502	3005	3403	2956	2486	3311	2909	2603	2470
	<b>8.00</b>	4253	3353	2787	4147	3305	2766	3215	2724	3129	2684	2227	3049	2646	2344	2216
	<b>9.00</b>	3980	3086	2538	3884	3045	2520	2966	2486	2892	2453	2011	2823	2421	2126	2003
	<b>10.00</b>	3736	2853	2325	3649	2818	2310	2750	2282	2685	2254	1829	2624	2227	1940	1823

### Cone of Light

Mounting Height	Beam Center Light Level	0°-180° Beam Width	90°-270° Beam Width
8 ft	44 fc	19 ft	18 ft
10 ft	28 fc	24 ft	22 ft
12 ft	20 fc	28 ft	26 ft
14 ft	14 fc	33 ft	31 ft
20 ft	7 fc	47 ft	44 ft
25 ft	4 fc	59 ft	55 ft
30 ft	3 fc	71 ft	66 ft





## ***NORTHERN LIGHTS TESTING LABORATORIES***

### **Integrating Sphere Information:**

#### **Sphere Equipment:**

SL-300 Integrating Sphere

Yokogawa WT210 - Power Meter

Thermo Recorder TR-71W

Chroma 6408, AC power source

Calibration Due: 6/27/2024

#### **Sphere Test:**

Output test: HPR-DM-ANR-2X4-DCO-SIDES-H-B-935

24.6°C, 39RH%

120.08 Vac, 48.9212W

Stable per LM-79 Standard

Spectrum Range: 380-780 nm

Scan Step: 1 nm

Test Info

Manufacturer - Finlite, Inc.

Model: HPR-DM-ANR-2X4-DCO-SIDES-H-B-935

Sample: HPR-DM-ANR-2X4-DCO-SIDES-H-B-935

#### **Test Info**

**Model:** HPR-DM-ANR-2X4-DCO-SIDES-H-B-935

**Sample:** HPR (REF# 22995689)

**Manufacturer:** Finelite, Inc.

**Test Date:** 06-14-2024

**Temperature:** 24.6° C

**Humidity:** 39%

**Spectrum Range:** 380 - 780 nm

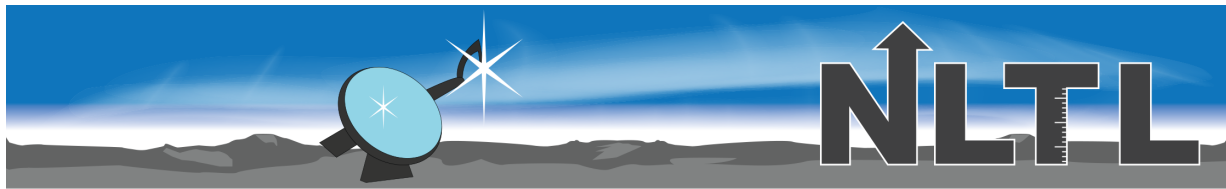
**Scan Step:** 1 nm

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## ***NORTHERN LIGHTS TESTING LABORATORIES***

### **Goniometry Information:**

#### **Goniometer Equipment:**

GMS2000 Type C Goniophotometer

Yokogawa WT210 - Power meter

(x3) J Type Thermocouples/Agilent 34970A data acquisition unit

GW Instek APS-7100E - AC power source

Calibration Due: 8/31/2024

#### **Goniometer Test:**

Distribution Test: HPR-DM-ANR-2X4-DCO-SIDES-H-B-935

24.5 °C, 39RH%

120.08 Vac, 48.921W

Stable per LM-79 Standard