



Report Number: REP-121924-3

LM-79-08 Luminaire Photometric Report

Device Under Test

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

Report Date

12/19/2024

Goniophotometric Examination

KPL2008-96
6/19/2024

Examined By:
Laura Robertson

Approved By:
Joe Guarino

Spectroradiometric Examination

CCT5560
06-24-2024

Examined By:
Laura Robertson

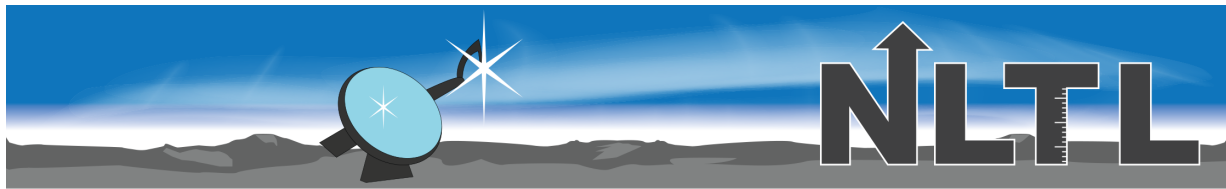
Approved By:
Joe Guarino

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





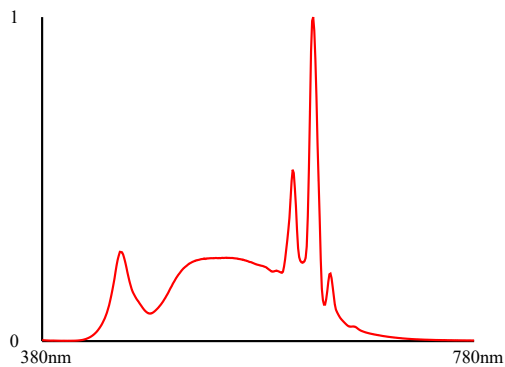
NORTHERN LIGHTS TESTING LABORATORIES

Spectral Results

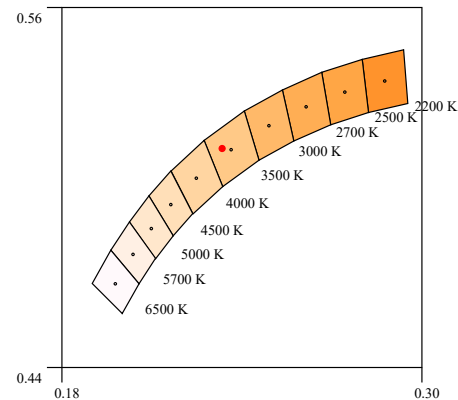
CCT: 3551 K
xy Coordinates: 0.4046 , 0.3952
u'v' Coordinates: 0.2334, 0.513
Delta u'v': +0.00212

Luminous Flux: 17312.22 lm
Radiant Flux: 34.95657 W
Electrical Power: 150.5 W
Efficacy: 115.1 lm/W
Melanopic Flux: 11568 mel lm
Melanopic Ratio: 0.67

Spectral Power Distribution

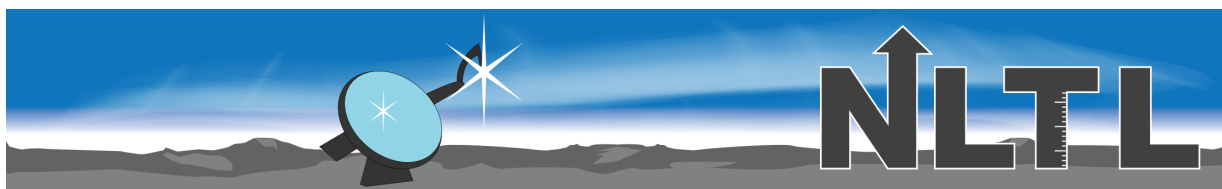


CIE u'v' (1976)



Color Rendering Index

Ra	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
94	92	100	90	91	95	97	97	92	89	96	87	80	95	92	94



NORTHERN LIGHTS TESTING LABORATORIES

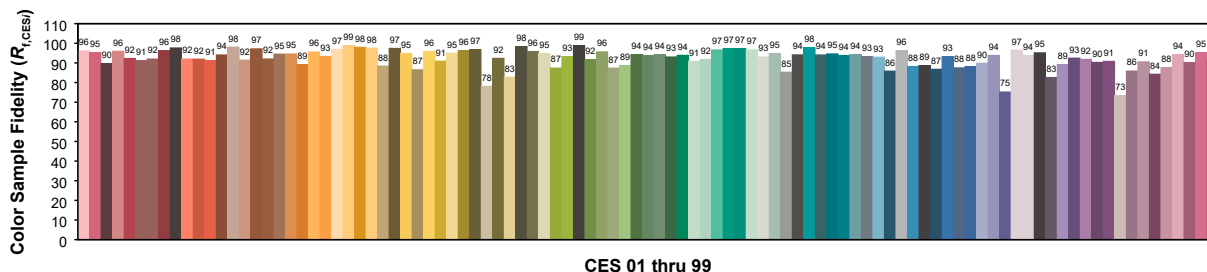
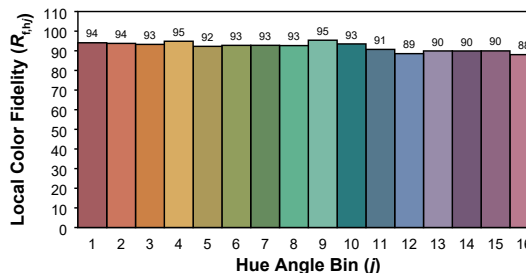
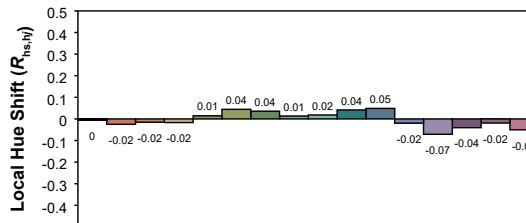
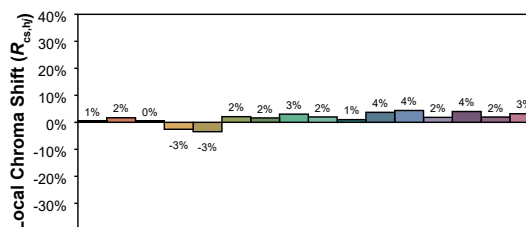
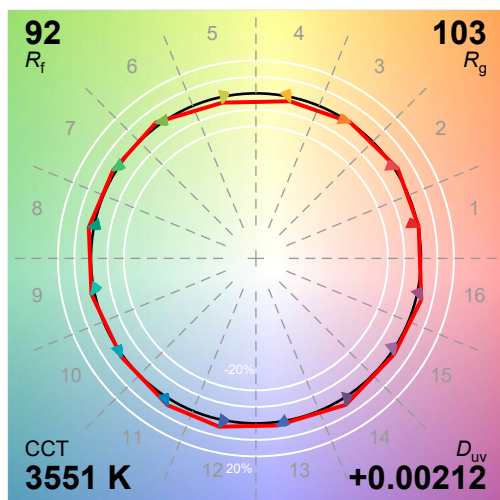
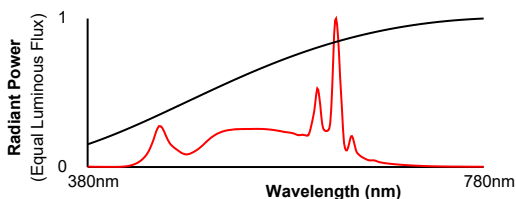
IES TM-30-18 Color Rendition Report

Source: HPR-DM-ANR-2X4-DCO-H-S-935

Date: 06-24-2024

Manufacturer: Finelite, Inc.

Model: HPR (REF# 22999683)



CES 01 thru 99

x: 0.4046
y: 0.3952
u': 0.2334
v': 0.513

CIE 13.3 1995

CRI Ra: 94

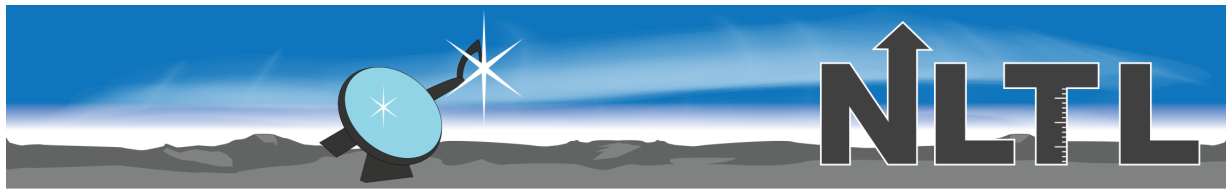
CRI R9: 89

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P: 262-891-9700

10200 55th Street Kenosha, Wisconsin 53144

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NORTHERN LIGHTS TESTING LABORATORIES

Performance Summary

Input

Watts	150.5 W
Number of Lamps	320
Lumens per Lamp	N/A
Total Lamp Lumens	N/A

Output

Output Lumens	17312.22 lm
Efficiency	N/A %
Efficacy	115.03 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	0.50	0.50	0.50
Street Side CU	0.38	0.46	0.49	0.50	0.50	0.50

Spacing Criterion

Two luminaires, 0°-180° plane	1.19
Two luminaires, 90°-270° plane	1.14
Four luminaires, diagonal	1.26

Full Beam Angle

0°-180° plane	100.56°
90°-270° plane	94.64°

Roadway Summary

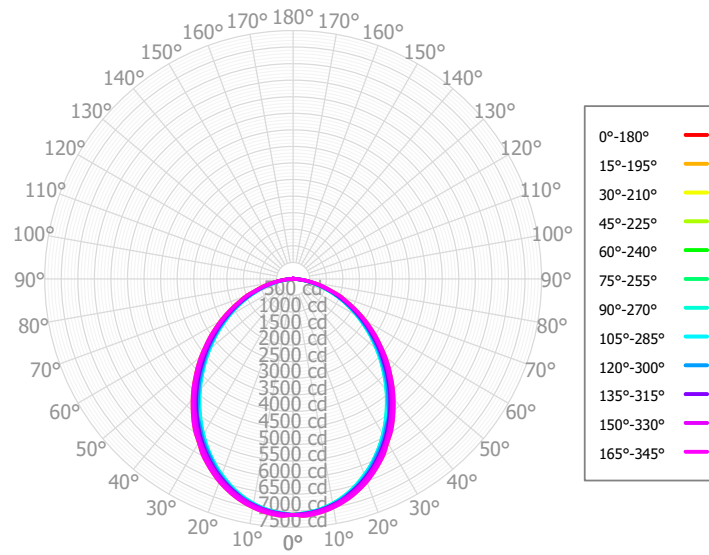
IESNA lateral classification	Type II
IESNA vertical classification	Undefined (Very Short)
Cutoff classification	Cutoff
IESNA TM-15-11 BUG Rating	B4 U2 G3
Maximum Candela	7164.72 cd 15° horizontal 2.5° vertical
Street side total	49.9%
House side total	49.9%

Luminaire Luminance

	0.00°	45.00°	90.00°
0.00°	9579	9579	9579
45.00°	7921	7598	7287
55.00°	7155	6786	6456
65.00°	6296	5937	5585
75.00°	5200	4823	4520
85.00°	3676	3169	2783



Candela Polar Plot

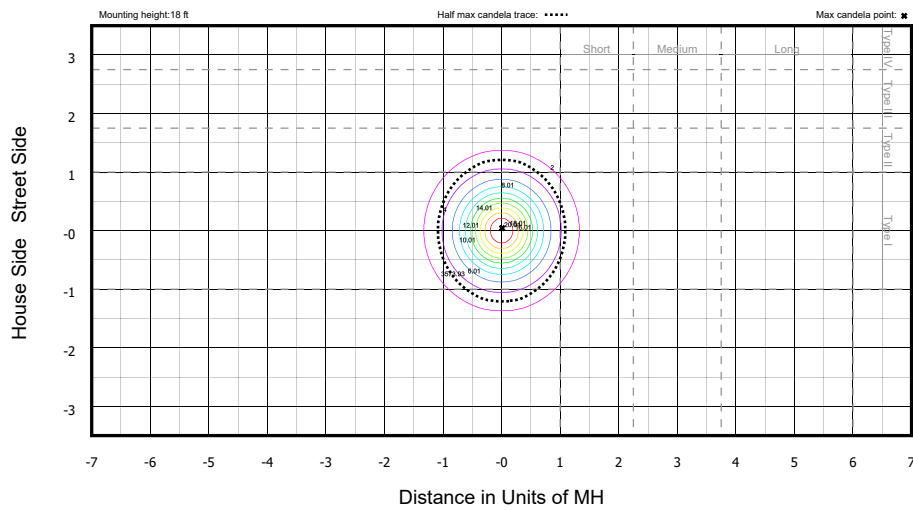


Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 20.00°	2567	15%	60.00° - 80.00°	2843	16%
0.00° - 30.00°	5328	31%	70.00° - 80.00°	992	6%
0.00° - 40.00°	8494	49%	80.00° - 90.00°	252	1%
0.00° - 60.00°	14174	82%	90.00° - 110.00°	11	0%
0.00° - 80.00°	17017	98%	90.00° - 120.00°	15	0%
0.00° - 90.00°	17268	100%	90.00° - 130.00°	20	0%
10.00° - 90.00°	16588	96%	90.00° - 150.00°	33	0%
20.00° - 40.00°	5928	34%	90.00° - 180.00°	44	0%
20.00° - 50.00°	9009	52%	110.00° - 180.00°	33	0%
40.00° - 70.00°	7531	43%	0.00° - 180.00°	17312	100%

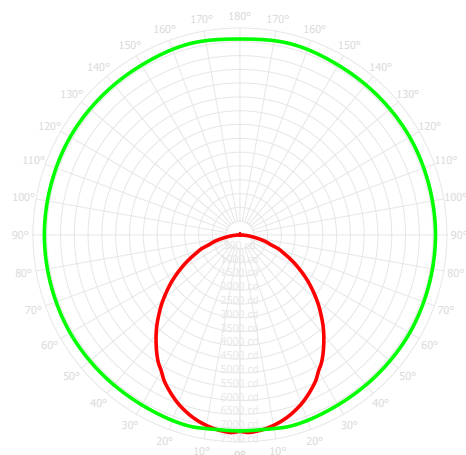


Iso-Illuminance

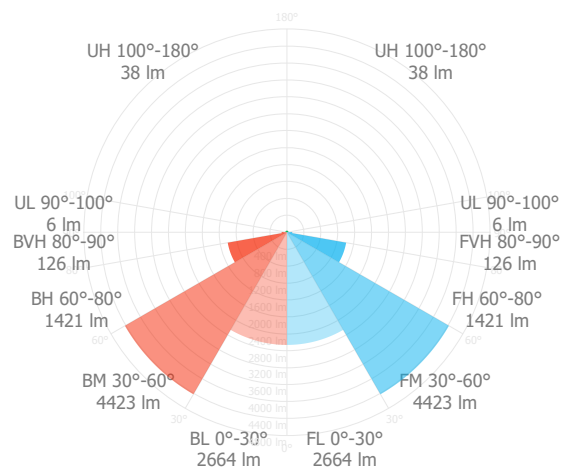


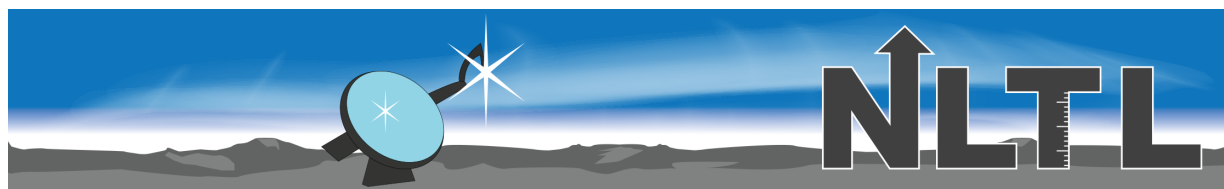
Peak Intensity Plane and Cone

Maximum Candela = 7164.72 cd
15° horizontal, 2.5° vertical



IES TM-15-11 LCS Plot





NORTHERN LIGHTS TESTING LABORATORIES

Candela Table

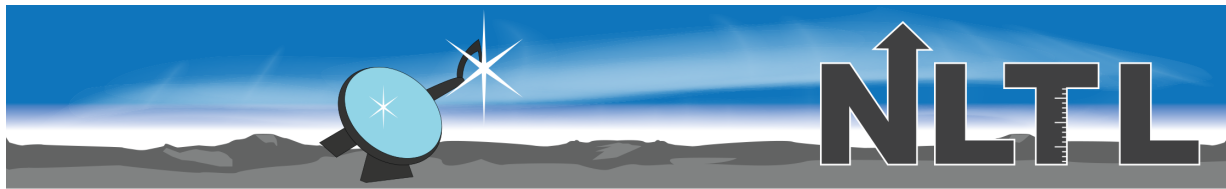
	0.00°	15.00°	30.00°	45.00°	60.00°	75.00°	90.00°	105.00°	120.00°	135.00°	150.00°	165.00°	180.00°	195.00°	210.00°	225.00°	240
0.00°	7121.02	7121.02	7121.02	7121.02	7121.02	7121.02	7121.02	7121.02	7121.02	7121.02	7121.02	7121.02	7121.02	7121.02	7121.02	7121.02	712
2.50°	7098.99	7164.72	7109.45	7097.49	7100.48	7084.05	7085.54	7084.05	7100.48	7097.49	7109.45	7164.72	7098.99	7164.72	7109.45	7097.49	710
5.00°	7067.62	7134.84	7074.34	7061.64	7063.88	7045.21	7043.71	7045.21	7063.88	7061.64	7074.34	7134.84	7067.62	7134.84	7074.34	7061.64	706
7.50°	7018.32	7083.30	7019.81	7004.12	7004.12	6978.73	6977.98	6978.73	7004.12	7004.12	7019.81	7083.30	7018.32	7083.30	7019.81	7004.12	700
10.00°	6948.10	7007.11	6943.62	6923.46	6915.24	6889.09	6885.36	6889.09	6915.24	6923.46	6943.62	7007.11	6948.10	7007.11	6943.62	6923.46	691
12.50°	6853.99	6913.74	6839.05	6833.07	6803.20	6778.55	6768.84	6778.55	6803.20	6833.07	6839.05	6913.74	6853.99	6913.74	6839.05	6833.07	680
15.00°	6743.44	6800.96	6725.51	6691.15	6673.23	6642.60	6631.40	6642.60	6673.23	6691.15	6725.51	6800.96	6743.44	6800.96	6725.51	6691.15	667
17.50°	6613.47	6664.26	6585.09	6548.49	6520.10	6482.01	6468.56	6482.01	6520.10	6548.49	6585.09	6664.26	6613.47	6664.26	6585.09	6548.49	652
20.00°	6462.59	6514.13	6424.49	6383.41	6346.06	6309.46	6286.31	6309.46	6346.06	6383.41	6424.49	6514.13	6462.59	6514.13	6424.49	6383.41	634
22.50°	6295.27	6337.10	6244.48	6205.64	6151.86	6105.55	6104.05	6105.55	6151.86	6205.64	6244.48	6337.10	6295.27	6337.10	6244.48	6205.64	615
25.00°	6110.03	6148.12	6049.68	6002.69	5928.74	5897.15	5885.65	5897.15	5928.74	6002.69	6049.68	6148.12	6110.03	6148.12	6049.68	6002.69	592
27.50°	5917.47	5948.54	5841.73	5788.17	5720.35	5672.39	5659.77	5672.39	5720.35	5788.17	5841.73	5948.54	5917.47	5948.54	5841.73	5788.17	572
30.00°	5704.29	5695.17	5627.28	5560.35	5490.73	5432.10	5422.39	5432.10	5490.73	5560.35	5627.28	5695.17	5704.29	5695.17	5627.28	5560.35	549
32.50°	5469.90	5495.07	5385.42	5314.16	5241.48	5184.86	5166.19	5184.86	5241.48	5314.16	5385.42	5495.07	5469.90	5495.07	5385.42	5314.16	524
35.00°	5223.55	5250.96	5132.80	5061.09	5035.69	4930.00	4902.66	4930.00	5035.69	5061.09	5132.80	5250.96	5223.55	5250.96	5132.80	5061.09	503
37.50°	4973.03	4986.10	4882.42	4807.95	4715.78	4664.46	4640.78	4664.46	4715.78	4807.95	4882.42	4986.10	4973.03	4986.10	4882.42	4807.95	471
40.00°	4697.70	4724.74	4616.58	4540.54	4446.58	4391.45	4374.27	4391.45	4446.58	4540.54	4616.58	4724.74	4697.70	4724.74	4616.58	4540.54	444
42.50°	4441.65	4456.88	4345.96	4264.84	4178.12	4128.15	4098.20	4128.15	4178.12	4264.84	4345.96	4456.88	4441.65	4456.88	4345.96	4264.84	417
45.00°	4163.93	4172.30	4066.83	3994.00	3899.51	3843.19	3830.65	3843.19	3899.51	3994.00	4066.83	4172.30	4163.93	4172.30	4066.83	3994.00	389
47.50°	3898.17	3901.08	3803.46	3710.76	3630.31	3579.30	3563.09	3579.30	3630.31	3710.76	3803.46	3901.08	3898.17	3901.08	3803.46	3710.76	363
50.00°	3617.17	3619.93	3518.20	3444.10	3369.78	3301.66	3289.26	3301.66	3369.78	3444.10	3518.20	3619.93	3617.17	3619.93	3518.20	3444.10	336
52.50°	3307.04	3334.30	3242.50	3170.79	3091.32	3038.88	3028.72	3038.88	3091.32	3170.79	3242.50	3334.30	3307.04	3334.30	3242.50	3170.79	309
55.00°	3050.98	3062.48	2974.94	2893.52	2825.63	2796.87	2752.65	2796.87	2825.63	2893.52	2974.94	3062.48	3050.98	3062.48	2974.94	2893.52	282
57.50°	2771.62	2781.18	2696.78	2639.34	2559.49	2513.40	2498.54	2513.40	2559.49	2639.34	2696.78	2781.18	2771.62	2781.18	2696.78	2639.34	255
60.00°	2519.60	2501.45	2439.53	2372.60	2301.27	2262.50	2240.84	2262.50	2301.27	2372.60	2439.53	2501.45	2519.60	2501.45	2439.53	2372.60	230
62.50°	2238.00	2234.87	2177.50	2111.25	2053.06	2016.98	1994.80	2016.98	2053.06	2111.25	2177.50	2234.87	2238.00	2234.87	2177.50	2111.25	205
65.00°	1977.92	1965.07	1914.20	1865.28	1806.42	1771.83	1754.58	1771.83	1806.42	1865.28	1914.20	1965.07	1977.92	1965.07	1914.20	1865.28	180
67.50°	1724.25	1706.92	1678.17	1611.31	1561.64	1540.21	1528.40	1540.21	1561.64	1611.31	1678.17	1706.92	1724.25	1706.92	1678.17	1611.31	156
70.00°	1505.85	1502.26	1466.71	1376.25	1338.83	1313.06	1285.79	1313.06	1338.83	1376.25	1466.71	1502.26	1505.85	1502.26	1466.71	1376.25	133
72.50°	1234.11	1175.62	1193.99	1152.09	1113.18	1077.32	1075.75	1077.32	1113.18	1152.09	1193.99	1175.62	1234.11	1175.62	1193.99	1152.09	111
75.00°	1000.61	1001.73	968.57	928.01	898.35	876.09	869.60	876.09	898.35	928.01	968.57	1001.73	1000.61	1001.73	968.57	928.01	89
77.50°	780.71	789.30	749.11	727.00	687.34	648.87	648.20	648.87	687.34	727.00	749.11	789.30	780.71	789.30	749.11	727.00	68
80.00°	573.49	574.60	562.15	534.04	509.33	495.77	487.73	495.77	509.33	534.04	562.15	574.60	573.49	574.60	562.15	534.04	50
82.50°	410.24	402.37	389.29	359.89	342.27	332.99	331.08	332.99	342.27	359.89	389.29	402.37	410.24	402.37	389.29	359.89	34
85.00°	238.19	236.73	220.92	205.33	192.29	189.33	180.34	189.33	192.29	205.33	220.92	236.73	238.19	236.73	220.92	205.33	19

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NORTHERN LIGHTS TESTING LABORATORIES

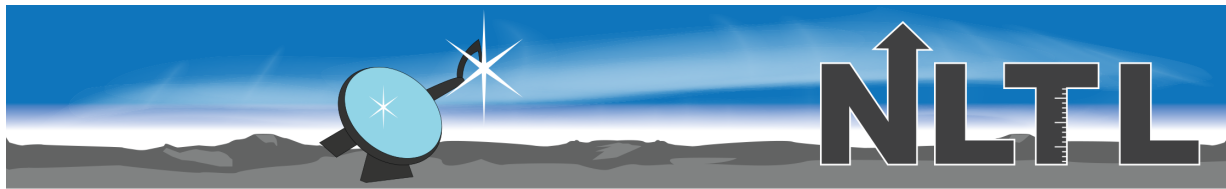
Coefficients of Utilization – Zonal Cavity Method

Values are lumens delivered to the workplane.

	pfc	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%
	pcc	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%
	pw	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%
	0.00	20599	20599	20599	20115	20115	20115	19211	19211	18384	18384	18384	17625	17625	17625	17268
	1.00	18922	18138	17436	18451	17742	17104	17002	16477	16321	15895	15313	15694	15352	15033	14673
	2.00	17285	15922	14795	16832	15593	14558	14976	14106	14408	13682	12756	13881	13283	12750	12382
	3.00	15821	14069	12712	15396	13794	12537	13277	12201	12798	11883	10774	12354	11582	10920	10550
	4.00	14534	12530	11063	14140	12300	10930	11864	10674	11460	10430	9235	11084	10197	9463	9096
RCR	5.00	13403	11246	9739	13042	11052	9636	10683	9436	10341	9245	8022	10021	9062	8293	7933
	6.00	12408	10166	8661	12079	10001	8579	9688	8421	9395	8269	7049	9122	8122	7341	6991
	7.00	11529	9249	7770	11232	9108	7705	8841	7577	8590	7454	6258	8355	7336	6557	6219
	8.00	10752	8465	7026	10482	8344	6973	8115	6869	7899	6768	5606	7696	6671	5904	5579
	9.00	10061	7790	6398	9817	7686	6354	7487	6268	7300	6184	5062	7124	6103	5354	5043
	10.00	9445	7204	5862	9224	7113	5825	6941	5753	6778	5683	4602	6624	5615	4887	4589

Cone of Light

Mounting Height	Beam Center Light Level	0°-180° Beam Width	90°-270° Beam Width
8 ft	111 fc	19 ft	17 ft
10 ft	71 fc	24 ft	22 ft
12 ft	49 fc	29 ft	26 ft
14 ft	36 fc	34 ft	30 ft
20 ft	18 fc	48 ft	43 ft
25 ft	11 fc	60 ft	54 ft
30 ft	8 fc	72 ft	65 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: 6/13/2024

Sphere Test:

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

24.6°C, 42RH%

119.82 Vac, 150.5W

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-H-S-935

Sample: HPR-DM-ANR-2X4-DCO-H-S-935

Test Info

Model: HPR (REF# 22999683)

Sample: HPR-DM-ANR-2X4-DCO-H-S-935

Manufacturer: Finelite, Inc.

Test Date: 06-24-2024

Temperature: 24.6° C

Humidity: 42%

Spectrum Range: 380 - 780 nm

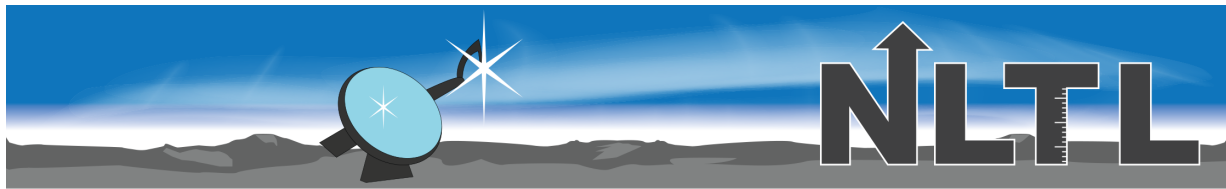
Scan Step: 1 nm

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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-H-S-935

24.5 °C, 41RH%

119.82 Vac, 150.5W

Stable per LM-79 Standard