



Report Number: REP-121924-05

LM-79-08 Luminaire Photometric Report

Device Under Test

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

CCT5558
06-24-2024

Examined By:
Laura Robertson

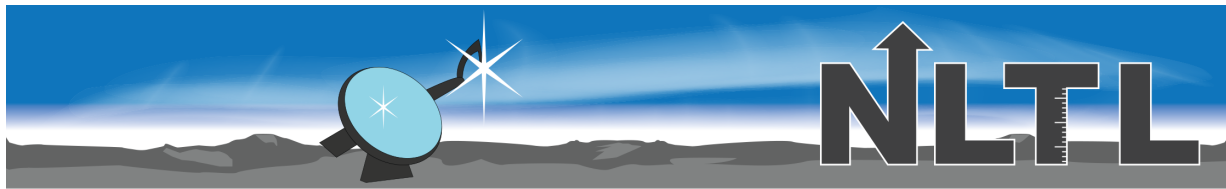
Approved By:
Joe Guarino

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





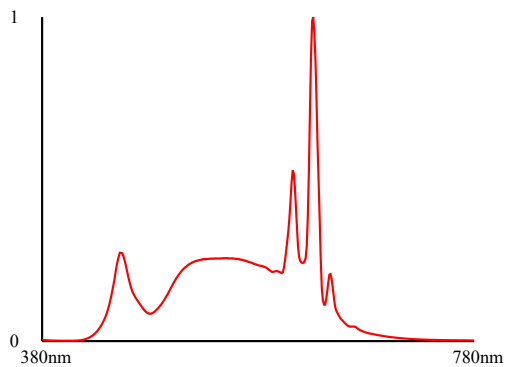
NORTHERN LIGHTS TESTING LABORATORIES

Spectral Results

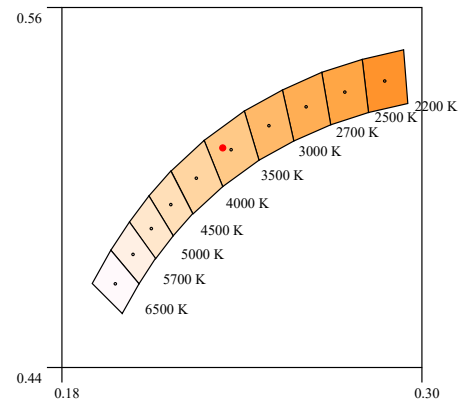
CCT: 3545 K
xy Coordinates: 0.405 , 0.3954
u'v' Coordinates: 0.2336, 0.5132
Delta u'v': +0.00212

Luminous Flux: 18344.63 lm
Radiant Flux: 37.21095 W
Electrical Power: 158.43 W
Efficacy: 115.8 lm/W
Melanopic Flux: 12230 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	93	100	90	91	95	97	97	92	89	96	87	80	95	92	94



NORTHERN LIGHTS TESTING LABORATORIES

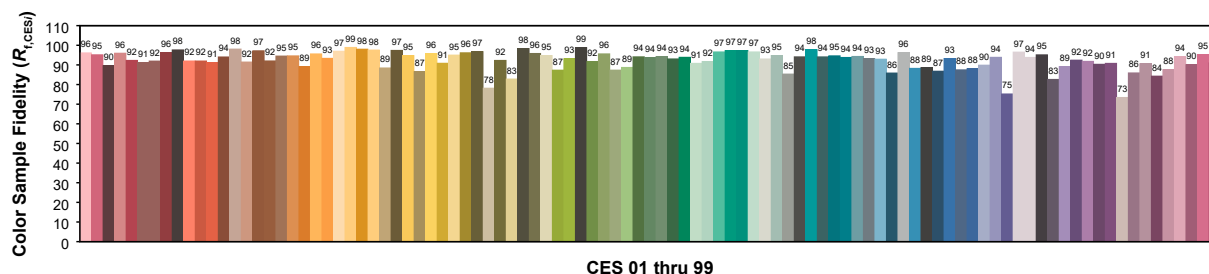
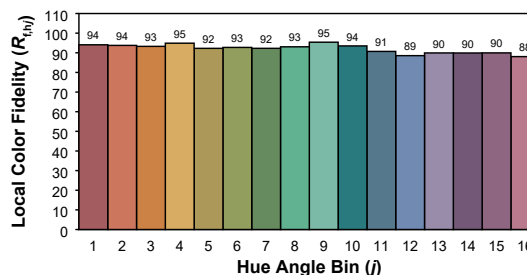
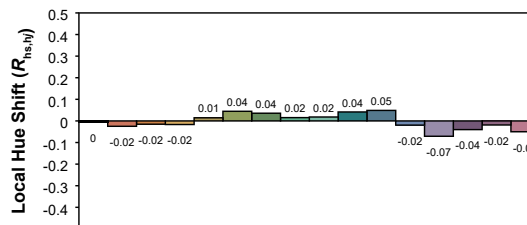
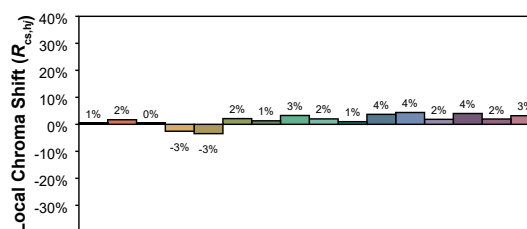
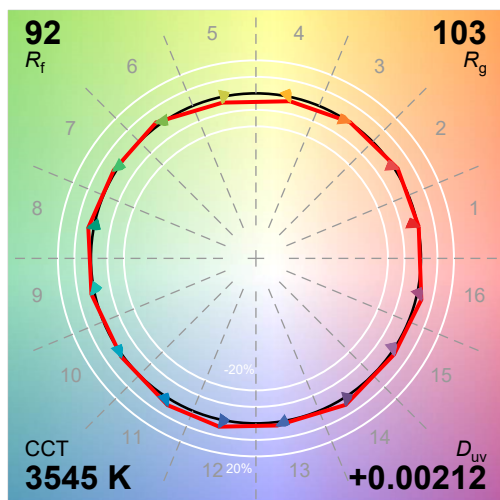
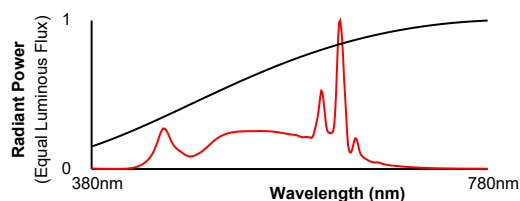
IES TM-30-18 Color Rendition Report

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

Manufacturer: Finelite, Inc.

Date: 06-24-2024

Model: HPR (REF# 22999682)



CES 01 thru 99

x: 0.405

CIE 13.3 1995

y: 0.3954

CRI Ra: 94

u': 0.2336

CRI R9: 89

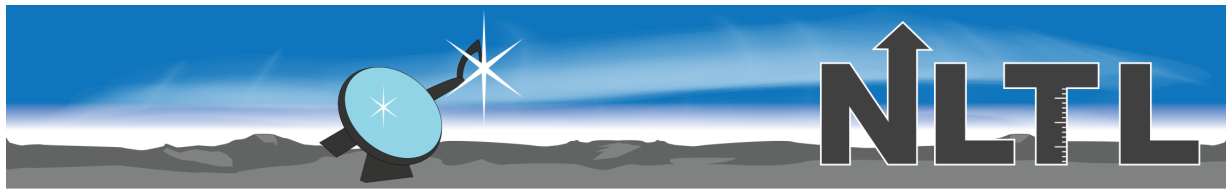
v': 0.5132

Northern Lights Testing Laboratories

P: 262-891-9700

10200 55th Street Kenosha, Wisconsin 53144

Page 3 of 10



NORTHERN LIGHTS TESTING LABORATORIES

Performance Summary

Input

Watts	158.43 W
Number of Lamps	320
Lumens per Lamp	N/A
Total Lamp Lumens	N/A

Output

Output Lumens	18344.63 lm
Efficiency	N/A %
Efficacy	115.79 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

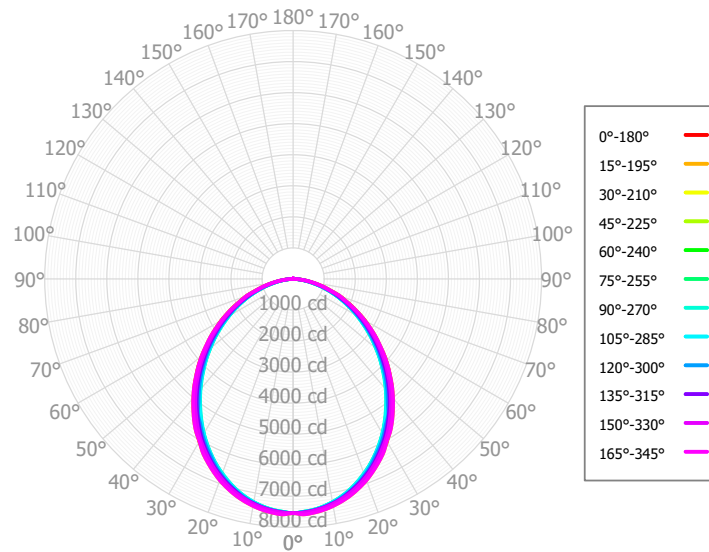
IESNA lateral classification	Type II
IESNA vertical classification	Undefined (Very Short)
Cutoff classification	Cutoff
IESNA TM-15-11 BUG Rating	B4 U2 G3
Maximum Candela	7591.99 cd 15° horizontal 2.5° vertical
Street side total	49.9%
House side total	49.9%

Luminaire Luminance

	0.00°	45.00°	90.00°
0.00°	10150	10150	10150
45.00°	8394	8051	7722
55.00°	7582	7191	6840
65.00°	6671	6291	5918
75.00°	5511	5111	4789
85.00°	3895	3358	2949



Candela Polar Plot

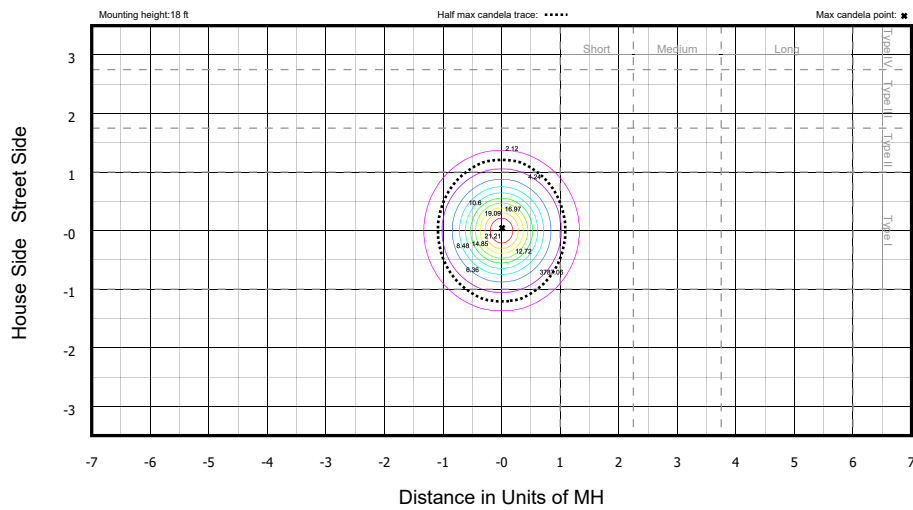


Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 20.00°	2720	15%	60.00° - 80.00°	3012	16%
0.00° - 30.00°	5645	31%	70.00° - 80.00°	1051	6%
0.00° - 40.00°	9001	49%	80.00° - 90.00°	267	1%
0.00° - 60.00°	15019	82%	90.00° - 110.00°	11	0%
0.00° - 80.00°	18031	98%	90.00° - 120.00°	16	0%
0.00° - 90.00°	18298	100%	90.00° - 130.00°	21	0%
10.00° - 90.00°	17577	96%	90.00° - 150.00°	35	0%
20.00° - 40.00°	6281	34%	90.00° - 180.00°	47	0%
20.00° - 50.00°	9547	52%	110.00° - 180.00°	35	0%
40.00° - 70.00°	7980	43%	0.00° - 180.00°	18345	100%

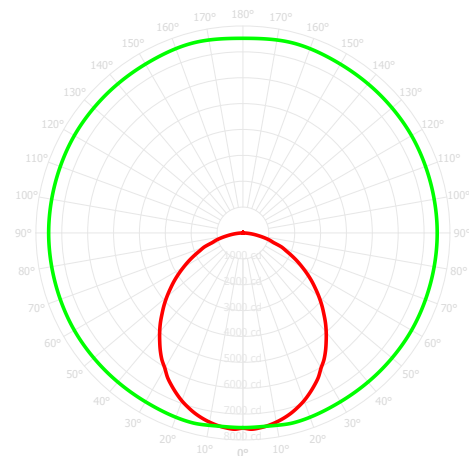


Iso-Illuminance

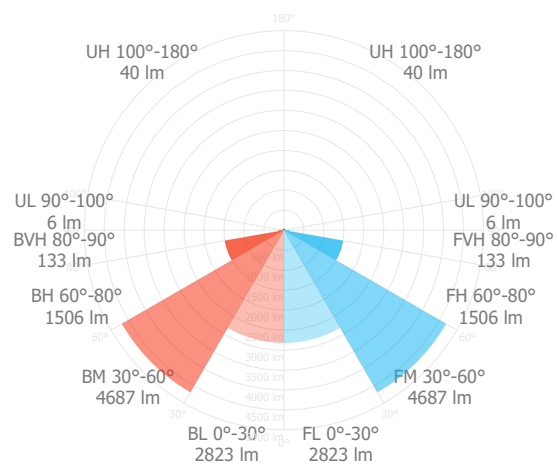


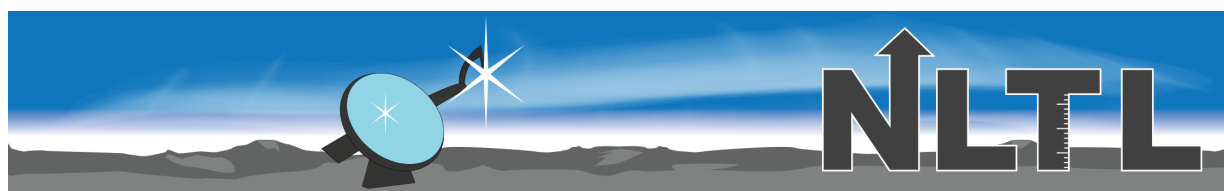
Peak Intensity Plane and Cone

Maximum Candela = 7591.99 cd
15° horizontal, 2.5° vertical



IES TM-15-11 LCS Plot





NORTHERN LIGHTS TESTING LABORATORIES

Candela Table

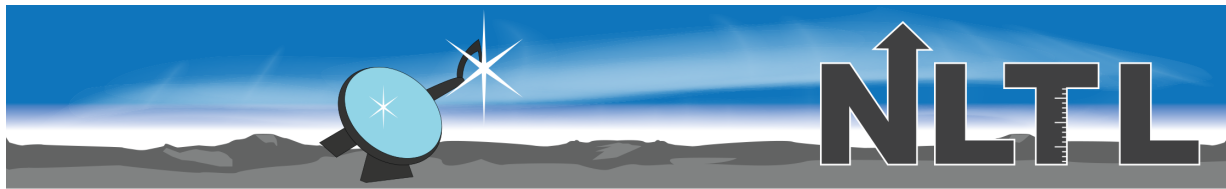
	0.00°	15.00°	30.00°	45.00°	60.00°	75.00°	90.00°	105.00°	120.00°	135.00°	150.00°	165.00°	180.00°	195.00°	210.00°	225.00°	240
0.00°	7545.69	7545.69	7545.69	7545.69	7545.69	7545.69	7545.69	7545.69	7545.69	7545.69	7545.69	7545.69	7545.69	7545.69	7545.69	7545.69	754
2.50°	7522.34	7591.99	7533.42	7520.75	7523.92	7506.50	7508.09	7506.50	7523.92	7520.75	7533.42	7591.99	7522.34	7591.99	7533.42	7520.75	752
5.00°	7489.09	7560.33	7496.22	7482.76	7485.14	7465.35	7463.77	7465.35	7485.14	7482.76	7496.22	7560.33	7489.09	7560.33	7496.22	7482.76	748
7.50°	7436.85	7505.71	7438.44	7421.82	7421.82	7394.90	7394.11	7394.90	7421.82	7421.82	7438.44	7505.71	7436.85	7505.71	7438.44	7421.82	742
10.00°	7362.45	7424.98	7357.70	7336.34	7327.63	7299.93	7295.97	7299.93	7327.63	7336.34	7357.70	7424.98	7362.45	7424.98	7357.70	7336.34	732
12.50°	7262.73	7326.05	7246.90	7240.56	7208.90	7182.79	7172.50	7182.79	7208.90	7240.56	7246.90	7326.05	7262.73	7326.05	7246.90	7240.56	720
15.00°	7145.58	7206.53	7126.59	7090.18	7071.19	7038.73	7026.86	7038.73	7071.19	7090.18	7126.59	7206.53	7145.58	7206.53	7126.59	7090.18	707
17.50°	7007.86	7061.69	6977.79	6939.01	6908.93	6868.56	6854.32	6868.56	6908.93	6939.01	6977.79	7061.69	7007.86	7061.69	6977.79	6939.01	690
20.00°	6847.98	6902.60	6807.62	6764.09	6724.51	6685.73	6661.19	6685.73	6724.51	6764.09	6807.62	6902.60	6847.98	6902.60	6807.62	6764.09	672
22.50°	6670.69	6715.01	6616.87	6575.71	6518.72	6469.65	6468.07	6469.65	6518.72	6575.71	6616.87	6715.01	6670.69	6715.01	6616.87	6575.71	651
25.00°	6474.40	6514.77	6410.45	6360.66	6282.31	6248.82	6236.64	6248.82	6282.31	6360.66	6410.45	6514.77	6474.40	6514.77	6410.45	6360.66	628
27.50°	6270.35	6303.28	6190.10	6133.35	6061.48	6010.67	5997.29	6010.67	6061.48	6133.35	6190.10	6303.28	6270.35	6303.28	6190.10	6133.35	606
30.00°	6044.46	6034.81	5962.86	5891.94	5818.17	5756.04	5745.75	5756.04	5818.17	5891.94	5962.86	6034.81	6044.46	6034.81	5962.86	5891.94	581
32.50°	5796.09	5822.77	5706.57	5631.07	5554.05	5494.06	5474.27	5494.06	5554.05	5631.07	5706.57	5822.77	5796.09	5822.77	5706.57	5631.07	555
35.00°	5535.06	5564.11	5438.89	5362.91	5336.00	5224.00	5195.03	5224.00	5336.00	5362.91	5438.89	5564.11	5535.06	5564.11	5438.89	5362.91	533
37.50°	5269.59	5283.44	5173.58	5094.67	4997.00	4942.63	4917.54	4942.63	4997.00	5094.67	5173.58	5283.44	5269.59	5283.44	5173.58	5094.67	499
40.00°	4977.85	5006.50	4891.89	4811.32	4711.75	4653.34	4635.13	4653.34	4711.75	4811.32	4891.89	5006.50	4977.85	5006.50	4891.89	4811.32	471
42.50°	4706.52	4722.67	4605.14	4519.18	4427.29	4374.34	4342.60	4374.34	4427.29	4519.18	4605.14	4722.67	4706.52	4722.67	4605.14	4519.18	442
45.00°	4412.25	4421.11	4309.36	4232.18	4132.06	4072.38	4059.09	4072.38	4132.06	4232.18	4309.36	4421.11	4412.25	4421.11	4309.36	4232.18	413
47.50°	4130.64	4133.72	4030.28	3932.05	3846.81	3792.75	3775.57	3792.75	3846.81	3932.05	4030.28	4133.72	4130.64	4133.72	4030.28	3932.05	384
50.00°	3832.88	3835.80	3728.00	3649.49	3570.74	3498.55	3485.41	3498.55	3570.74	3649.49	3728.00	3835.80	3832.88	3835.80	3728.00	3649.49	357
52.50°	3504.25	3533.14	3435.87	3359.88	3275.67	3220.10	3209.34	3220.10	3275.67	3359.88	3435.87	3533.14	3504.25	3533.14	3435.87	3359.88	327
55.00°	3232.93	3245.11	3152.35	3066.08	2994.13	2963.66	2916.80	2963.66	2994.13	3066.08	3152.35	3245.11	3232.93	3245.11	3152.35	3066.08	299
57.50°	2936.91	2947.04	2857.60	2796.73	2712.12	2663.29	2647.54	2663.29	2712.12	2796.73	2857.60	2947.04	2936.91	2947.04	2857.60	2796.73	271
60.00°	2669.86	2650.63	2585.01	2514.09	2438.51	2397.43	2374.48	2397.43	2438.51	2514.09	2585.01	2650.63	2669.86	2650.63	2585.01	2514.09	243
62.50°	2371.47	2368.14	2307.36	2237.15	2175.49	2137.26	2113.76	2137.26	2175.49	2237.15	2307.36	2368.14	2371.47	2368.14	2307.36	2237.15	217
65.00°	2095.87	2082.26	2028.35	1976.51	1914.14	1877.50	1859.21	1877.50	1914.14	1976.51	2028.35	2082.26	2095.87	2082.26	2028.35	1976.51	191
67.50°	1827.08	1808.72	1778.24	1707.41	1654.77	1632.06	1619.55	1632.06	1654.77	1707.41	1778.24	1808.72	1827.08	1808.72	1778.24	1707.41	165
70.00°	1595.65	1591.85	1554.17	1458.32	1418.67	1391.36	1362.47	1391.36	1418.67	1458.32	1554.17	1591.85	1595.65	1591.85	1554.17	1458.32	141
72.50°	1307.70	1245.73	1265.20	1220.80	1179.56	1141.57	1139.91	1141.57	1179.56	1220.80	1265.20	1245.73	1307.70	1245.73	1265.20	1220.80	117
75.00°	1060.28	1061.47	1026.33	983.35	951.93	928.34	921.45	928.34	951.93	983.35	1026.33	1061.47	1060.28	1061.47	1026.33	983.35	951
77.50°	827.27	836.37	793.79	770.36	728.33	687.56	686.86	687.56	728.33	770.36	793.79	836.37	827.27	836.37	793.79	770.36	728
80.00°	607.69	608.87	595.68	565.89	539.70	525.34	516.81	525.34	539.70	565.89	595.68	608.87	607.69	608.87	595.68	565.89	539
82.50°	434.70	426.37	412.51	381.36	362.68	352.85	350.82	352.85	362.68	381.36	412.51	426.37	434.70	426.37	412.51	381.36	362
85.00°	252.39	250.85	234.09	217.57	203.76	200.62	191.10	200.62	203.76	217.57	234.09	250.85	252.39	250.85	234.09	217.57	203

Northern Lights Testing Laboratories

P: 262-891-9700

10200 55th Street Kenosha, Wisconsin 53144

Page 7 of 10



NORTHERN LIGHTS TESTING LABORATORIES

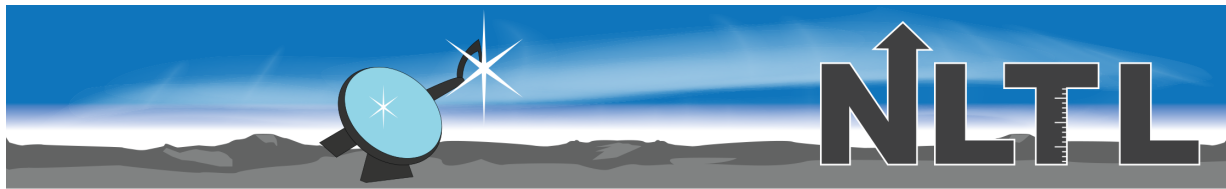
Coefficients of Utilization – Zonal Cavity Method

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	21828	21828	21828	21315	21315	21315	20357	20357	19481	19481	19481	18676	18676	18676	18298
	1.00	20050	19220	18475	19551	18800	18124	18016	17460	17295	16843	16226	16630	16268	15929	15548
	2.00	18316	16871	15678	17836	16523	15426	15870	14948	15267	14498	13517	14709	14075	13510	13121
	3.00	16765	14907	13470	16314	14617	13285	14069	12929	13562	12592	11417	13091	12272	11571	11179
	4.00	15401	13277	11723	14983	13033	11582	12572	11311	12144	11052	9786	11745	10805	10028	9639
RCR	5.00	14202	11917	10320	13819	11711	10211	11321	9999	10957	9797	8500	10618	9603	8788	8406
	6.00	13147	10772	9177	12799	10597	9091	10265	8923	9956	8762	7470	9666	8607	7779	7408
	7.00	12217	9800	8234	11901	9651	8164	9368	8029	9103	7899	6631	8854	7773	6948	6590
	8.00	11393	8970	7445	11108	8842	7389	8599	7278	8370	7172	5940	8155	7068	6256	5912
	9.00	10661	8254	6779	10403	8144	6733	7934	6641	7736	6553	5364	7549	6467	5673	5343
	10.00	10009	7633	6211	9775	7538	6172	7355	6096	7182	6022	4877	7019	5950	5178	4862

Cone of Light

Mounting Height	Beam Center Light Level	0°-180° Beam Width	90°-270° Beam Width
8 ft	118 fc	19 ft	17 ft
10 ft	75 fc	24 ft	22 ft
12 ft	52 fc	29 ft	26 ft
14 ft	38 fc	34 ft	30 ft
20 ft	19 fc	48 ft	43 ft
25 ft	12 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: 6/27/2024

Sphere Test:

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

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

Test Info

Model: HPR (REF# 22999682)

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

Manufacturer: Finelite, Inc.

Test Date: 06-24-2024

Temperature: 24.6° C

Humidity: 42%

Spectrum Range: 380 - 780 nm

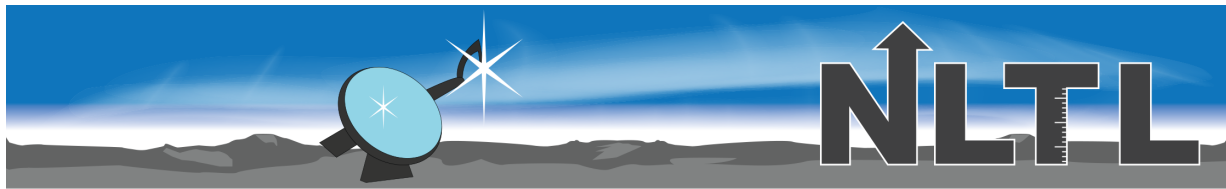
Scan Step: 1 nm

Northern Lights Testing Laboratories

P: 262-891-9700

10200 55th Street Kenosha, Wisconsin 53144

Page 9 of 10



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-B-935

24.5 °C, 41RH%

119.82 Vac, 150.5W

Stable per LM-79 Standard