



Report Number: REP-121924-01

LM-79-08 Luminaire Photometric Report

Device Under Test

Finelite, Inc.
HPR-DM-ANR-2X4-DCO-CENTER-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

CCT5550
06-12-2024

Examined By:
Laura Robertson

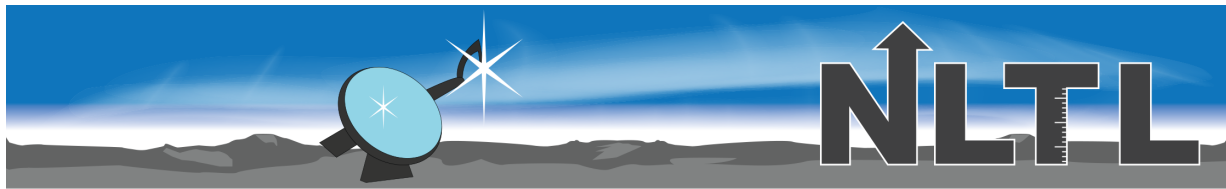
Approved By:
Joe Guarino

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





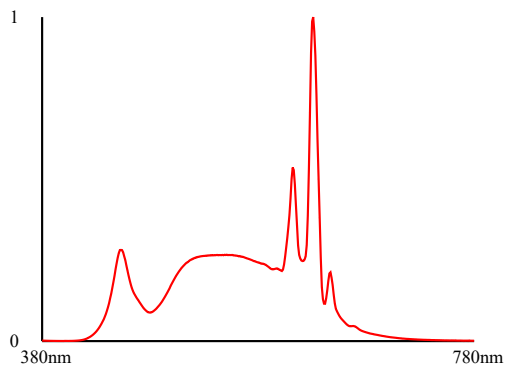
NORTHERN LIGHTS TESTING LABORATORIES

Spectral Results

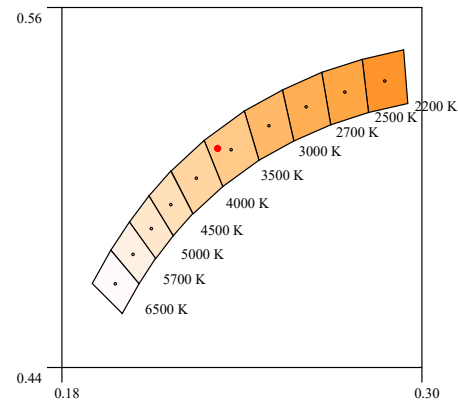
CCT: 3600 K
xy Coordinates: 0.4026 , 0.3958
u'v' Coordinates: 0.2319, 0.513
Delta u'v': +0.00283

Luminous Flux: 11914.34 lm
Radiant Flux: 23.92437 W
Electrical Power: 110.18 W
Efficacy: 108.2 lm/W
Melanopic Flux: 8006 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
95	94	99	90	91	96	98	97	93	92	94	88	78	96	92	95



NORTHERN LIGHTS TESTING LABORATORIES

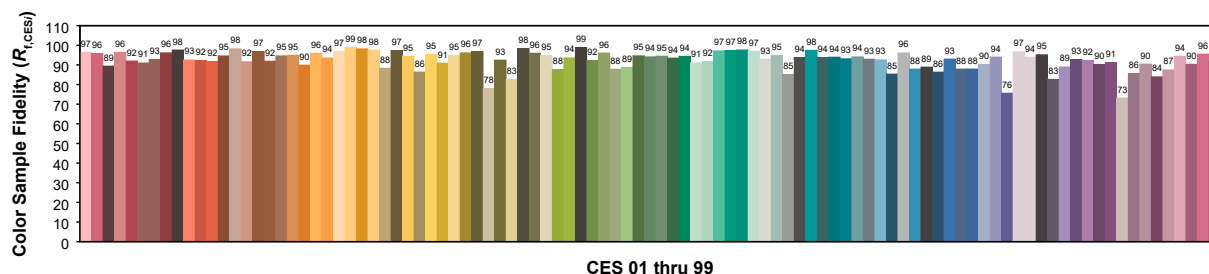
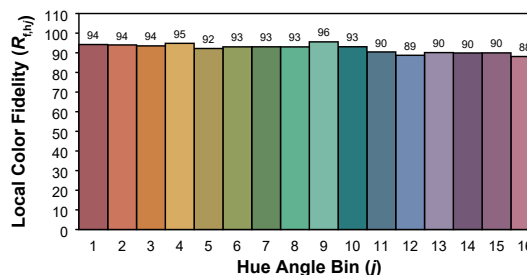
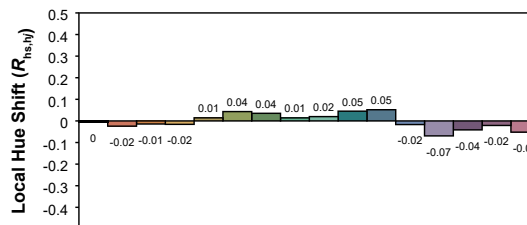
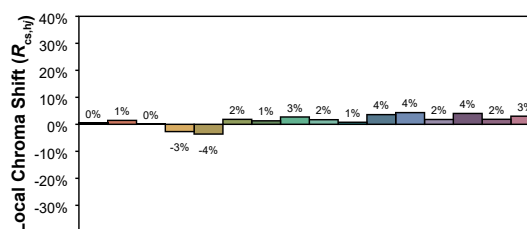
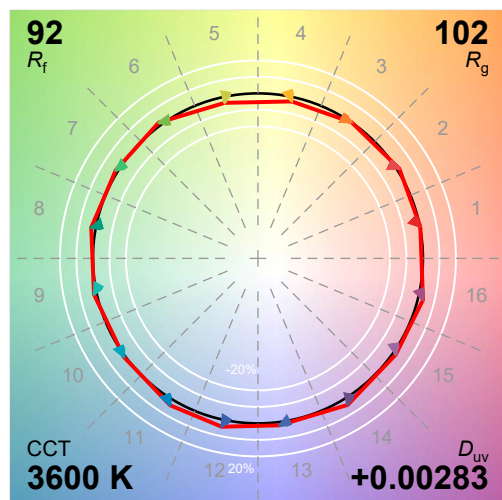
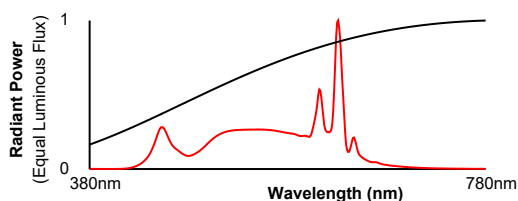
IES TM-30-18 Color Rendition Report

Source: HPR-DM-ANR-2x4-DCO-CENTER-935

Manufacturer: Finelite, Inc.

Date: 06-12-2024

Model: HPR (REF# 22995687)



CES 01 thru 99

x: 0.4026

CIE 13.3 1995

y: 0.3958

CRI Ra: 95

u': 0.2319

CRI R9: 92

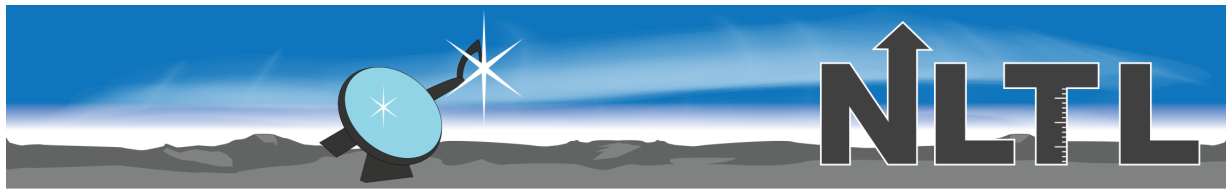
v': 0.513

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

Output

Output Lumens	11914.34 lm
Efficiency	N/A %
Efficacy	108.14 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

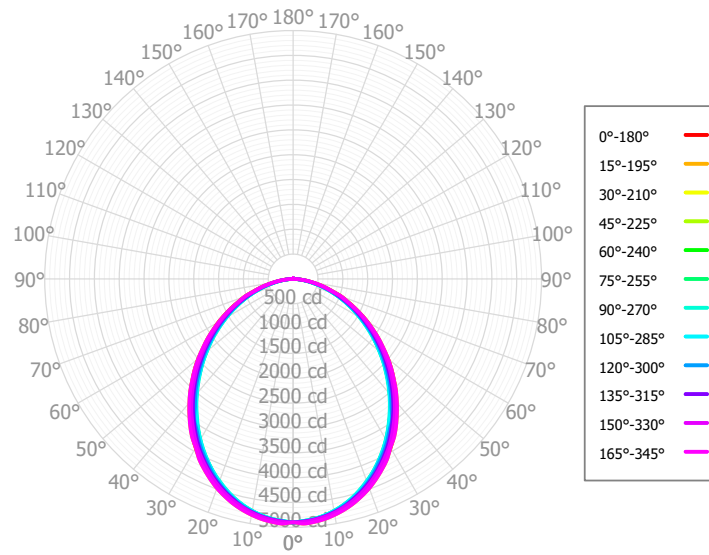
IESNA lateral classification	Type II
IESNA vertical classification	Undefined (Very Short)
Cutoff classification	Cutoff
IESNA TM-15-11 BUG Rating	B3 U2 G2
Maximum Candela	4930.79 cd 15° horizontal 2.5° vertical
Street side total	49.9%
House side total	49.9%

Luminaire Luminance

	0.00°	45.00°	90.00°
0.00°	6592	6592	6592
45.00°	5451	5229	5015
55.00°	4924	4670	4443
65.00°	4333	4086	3843
75.00°	3579	3319	3110
85.00°	2530	2181	1916



Candela Polar Plot

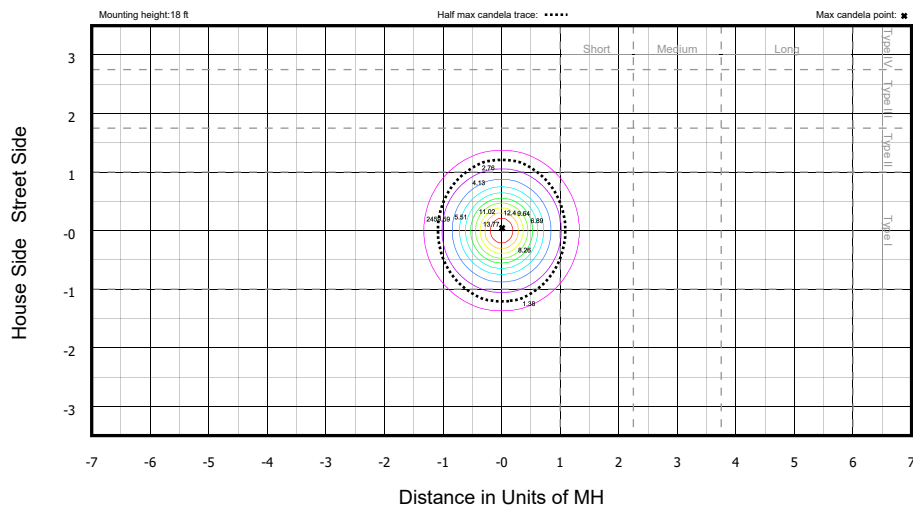


Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 20.00°	1766	15%	60.00° - 80.00°	1956	16%
0.00° - 30.00°	3666	31%	70.00° - 80.00°	682	6%
0.00° - 40.00°	5846	49%	80.00° - 90.00°	173	1%
0.00° - 60.00°	9755	82%	90.00° - 110.00°	7	0%
0.00° - 80.00°	11711	98%	90.00° - 120.00°	10	0%
0.00° - 90.00°	11884	100%	90.00° - 130.00°	13	0%
10.00° - 90.00°	11416	96%	90.00° - 150.00°	22	0%
20.00° - 40.00°	4080	34%	90.00° - 180.00°	30	0%
20.00° - 50.00°	6200	52%	110.00° - 180.00°	23	0%
40.00° - 70.00°	5183	43%	0.00° - 180.00°	11914	100%

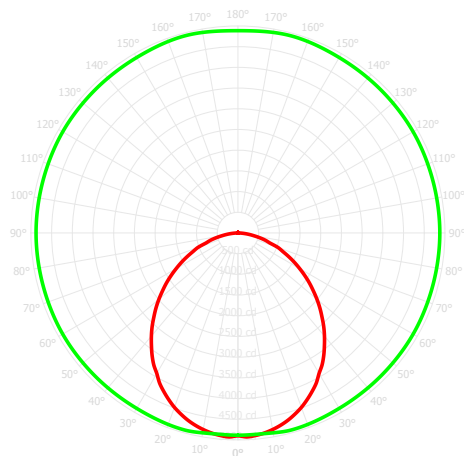


Iso-Illuminance

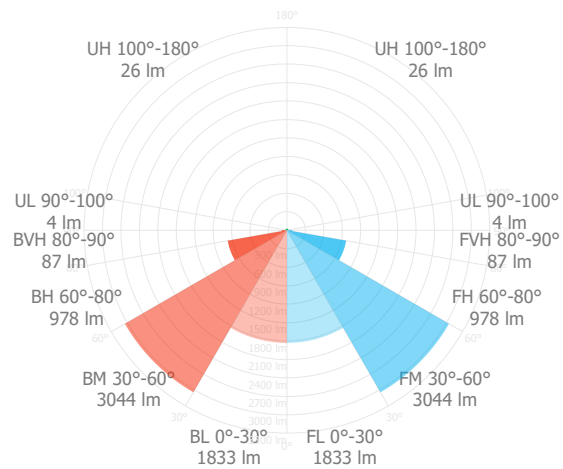


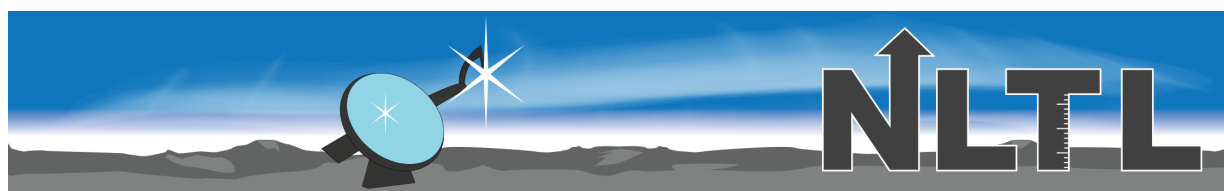
Peak Intensity Plane and Cone

Maximum Candela = 4930.79 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°	4900.72	4900.72	4900.72	4900.72	4900.72	4900.72	4900.72	4900.72	4900.72	4900.72	4900.72	4900.72	4900.72	4900.72	4900.72	4900.72	490
2.50°	4885.55	4930.79	4892.75	4884.52	4886.58	4875.27	4876.30	4875.27	4886.58	4884.52	4892.75	4930.79	4885.55	4930.79	4892.75	4884.52	488
5.00°	4863.96	4910.23	4868.59	4859.85	4861.39	4848.54	4847.51	4848.54	4861.39	4859.85	4868.59	4910.23	4863.96	4910.23	4868.59	4859.85	486
7.50°	4830.03	4874.76	4831.06	4820.27	4820.27	4802.79	4802.27	4802.79	4820.27	4820.27	4831.06	4874.76	4830.03	4874.76	4831.06	4820.27	482
10.00°	4781.71	4822.32	4778.63	4764.75	4759.09	4741.10	4738.53	4741.10	4759.09	4764.75	4778.63	4822.32	4781.71	4822.32	4778.63	4764.75	475
12.50°	4716.94	4758.07	4706.66	4702.55	4681.99	4665.02	4658.34	4665.02	4681.99	4702.55	4706.66	4758.07	4716.94	4758.07	4706.66	4702.55	468
15.00°	4640.86	4680.45	4628.53	4604.88	4592.54	4571.47	4563.75	4571.47	4592.54	4604.88	4628.53	4680.45	4640.86	4680.45	4628.53	4604.88	459
17.50°	4551.42	4586.37	4531.88	4506.69	4487.16	4460.94	4451.69	4460.94	4487.16	4506.69	4531.88	4586.37	4551.42	4586.37	4531.88	4506.69	448
20.00°	4447.58	4483.05	4421.36	4393.09	4367.39	4342.20	4326.26	4342.20	4367.39	4393.09	4421.36	4483.05	4447.58	4483.05	4421.36	4393.09	436
22.50°	4332.43	4361.22	4297.48	4270.74	4233.73	4201.86	4200.83	4201.86	4233.73	4270.74	4297.48	4361.22	4332.43	4361.22	4297.48	4270.74	423
25.00°	4204.95	4231.16	4163.41	4131.08	4080.19	4058.44	4050.53	4058.44	4080.19	4131.08	4163.41	4231.16	4204.95	4231.16	4163.41	4131.08	408
27.50°	4072.42	4093.81	4020.30	3983.44	3936.77	3903.76	3895.08	3903.76	3936.77	3983.44	4020.30	4093.81	4072.42	4093.81	4020.30	3983.44	393
30.00°	3925.71	3919.44	3872.71	3826.66	3778.75	3738.39	3731.71	3738.39	3778.75	3826.66	3872.71	3919.44	3925.71	3919.44	3872.71	3826.66	377
32.50°	3764.40	3781.73	3706.26	3657.22	3607.21	3568.24	3555.39	3568.24	3607.21	3657.22	3706.26	3781.73	3764.40	3781.73	3706.26	3657.22	360
35.00°	3594.87	3613.73	3532.41	3483.06	3465.59	3392.85	3374.03	3392.85	3465.59	3483.06	3532.41	3613.73	3594.87	3613.73	3532.41	3483.06	346
37.50°	3422.46	3431.45	3360.10	3308.85	3245.42	3210.10	3193.81	3210.10	3245.42	3308.85	3360.10	3431.45	3422.46	3431.45	3360.10	3308.85	324
40.00°	3232.98	3251.58	3177.15	3124.82	3060.15	3022.22	3010.39	3022.22	3060.15	3124.82	3177.15	3251.58	3232.98	3251.58	3177.15	3124.82	306
42.50°	3056.76	3067.25	2990.91	2935.08	2875.40	2841.01	2820.40	2841.01	2875.40	2935.08	2990.91	3067.25	3056.76	3067.25	2990.91	2935.08	287
45.00°	2865.64	2871.39	2798.81	2748.69	2683.66	2644.90	2636.27	2644.90	2683.66	2748.69	2798.81	2871.39	2865.64	2871.39	2798.81	2748.69	268
47.50°	2682.74	2684.74	2617.55	2553.76	2498.40	2463.29	2452.13	2463.29	2498.40	2553.76	2617.55	2684.74	2682.74	2684.74	2617.55	2553.76	249
50.00°	2489.35	2491.25	2421.24	2370.24	2319.09	2272.21	2263.68	2272.21	2319.09	2370.24	2421.24	2491.25	2489.35	2491.25	2421.24	2370.24	231
52.50°	2275.91	2294.68	2231.50	2182.15	2127.46	2091.37	2084.38	2091.37	2127.46	2182.15	2231.50	2294.68	2275.91	2294.68	2231.50	2182.15	212
55.00°	2099.70	2107.61	2047.37	1991.33	1944.61	1924.82	1894.38	1924.82	1944.61	1991.33	2047.37	2107.61	2099.70	2107.61	2047.37	1991.33	194
57.50°	1907.44	1914.02	1855.93	1816.40	1761.45	1729.73	1719.50	1729.73	1761.45	1816.40	1855.93	1914.02	1907.44	1914.02	1855.93	1816.40	176
60.00°	1734.00	1721.51	1678.89	1632.84	1583.74	1557.06	1542.16	1557.06	1583.74	1632.84	1678.89	1721.51	1734.00	1721.51	1678.89	1632.84	158
62.50°	1540.20	1538.04	1498.56	1452.97	1412.92	1388.09	1372.83	1388.09	1412.92	1452.97	1498.56	1538.04	1540.20	1538.04	1498.56	1452.97	141
65.00°	1361.21	1352.37	1317.36	1283.69	1243.18	1219.38	1207.51	1219.38	1243.18	1283.69	1317.36	1352.37	1361.21	1352.37	1317.36	1283.69	124
67.50°	1186.64	1174.71	1154.92	1108.91	1074.73	1059.98	1051.85	1059.98	1074.73	1108.91	1154.92	1174.71	1186.64	1174.71	1154.92	1108.91	107
70.00°	1036.33	1033.86	1009.39	947.14	921.39	903.65	884.89	903.65	921.39	947.14	1009.39	1033.86	1036.33	1033.86	1009.39	947.14	921
72.50°	849.32	809.07	821.71	792.87	766.09	741.42	740.34	741.42	766.09	792.87	821.71	809.07	849.32	809.07	821.71	792.87	766
75.00°	688.62	689.39	666.57	638.66	618.25	602.93	598.46	602.93	618.25	638.66	666.57	689.39	688.62	689.39	666.57	638.66	618
77.50°	537.29	543.20	515.54	500.33	473.03	446.55	446.09	446.55	473.03	500.33	515.54	543.20	537.29	543.20	515.54	500.33	473
80.00°	394.68	395.44	386.88	367.53	350.52	341.19	335.66	341.19	350.52	367.53	386.88	395.44	394.68	395.44	386.88	367.53	350
82.50°	282.33	276.91	267.91	247.68	235.55	229.16	227.85	229.16	235.55	247.68	267.91	276.91	282.33	276.91	267.91	247.68	235
85.00°	163.92	162.92	152.04	141.31	132.34	130.30	124.11	130.30	132.34	141.31	152.04	162.92	163.92	162.92	152.04	141.31	132

Northern Lights Testing Laboratories

P: 262-891-9700

10200 55th Street Kenosha, Wisconsin 53144

Page 7 of 10



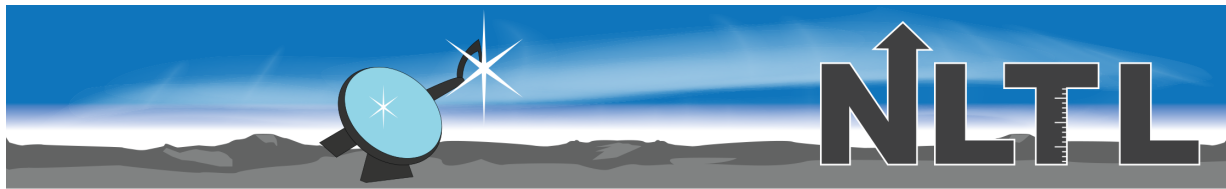
Coefficients of Utilization – Zonal Cavity Method

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	14177	14177	14177	13843	13843	13843	13221	13221	12652	12652	12652	12130	12130	12130	11884
	1.00	13022	12483	11999	12698	12210	11771	11701	11339	11232	10939	10538	10801	10566	10346	10098
	2.00	11896	10957	10182	11584	10731	10019	10307	9708	9915	9416	8779	9553	9141	8774	8521
	3.00	10888	9682	8749	10595	9493	8628	9137	8397	8808	8178	7415	8502	7970	7515	7260
	4.00	10002	8623	7614	9731	8465	7522	8165	7346	7887	7178	6356	7628	7018	6513	6260
RCR	5.00	9224	7740	6703	8975	7606	6632	7352	6494	7116	6363	5521	6896	6237	5707	5460
	6.00	8539	6996	5960	8313	6882	5904	6667	5795	6466	5691	4851	6278	5590	5052	4812
	7.00	7935	6365	5348	7730	6268	5302	6084	5215	5912	5130	4307	5750	5048	4512	4280
	8.00	7400	5826	4835	7214	5743	4799	5585	4727	5436	4658	3858	5296	4591	4063	3840
	9.00	6924	5361	4403	6756	5289	4373	5153	4313	5024	4256	3483	4903	4200	3685	3470
	10.00	6500	4958	4034	6348	4896	4009	4777	3959	4665	3911	3167	4559	3864	3363	3158

Cone of Light

Mounting Height	Beam Center Light Level	0°-180° Beam Width	90°-270° Beam Width
8 ft	77 fc	19 ft	17 ft
10 ft	49 fc	24 ft	22 ft
12 ft	34 fc	29 ft	26 ft
14 ft	25 fc	34 ft	30 ft
20 ft	12 fc	48 ft	43 ft
25 ft	8 fc	60 ft	54 ft
30 ft	5 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-CENTER-935

24.7°C, 35RH%

119.90 Vac, 110.18W

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-CENTER-935

Sample: HPR-DM-ANR-2X4-DCO-CENTER-935

Test Info

Model: HPR (REF# 22995687)

Sample: HPR-DM-ANR-2x4-DCO-CENTER-935

Manufacturer: Finelite, Inc.

Test Date: 06-12-2024

Temperature: 24.7° C

Humidity: 35%

Spectrum Range: 380 - 780 nm

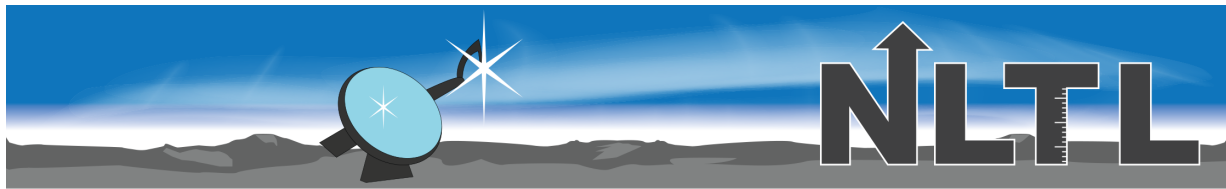
Scan Step: 1 nm

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-CENTER-935

24.5 °C, 41RH%

119.90 Vac, 110.18W

Stable per LM-79 Standard