



Report Number: REP-122024-01

LM-79-08 Luminaire Photometric Report

Device Under Test

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

CCT5556
06-17-2024

Examined By:
Laura Robertson

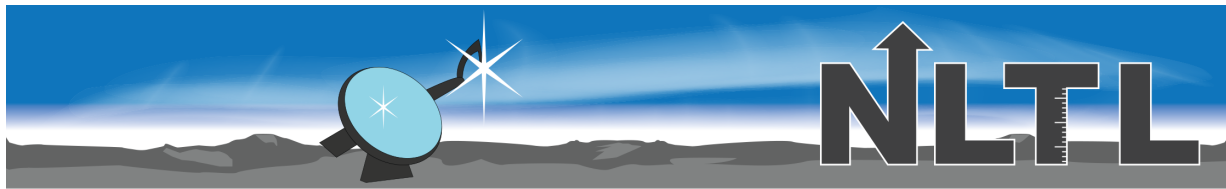
Approved By:
Joe Guarino

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





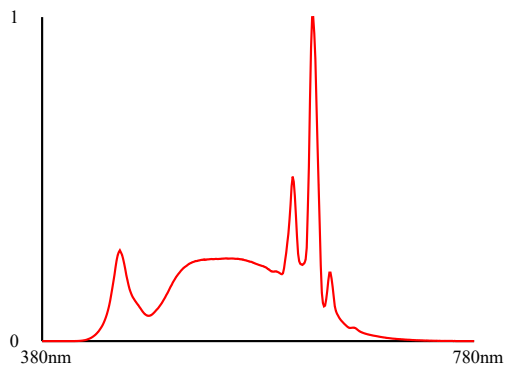
NORTHERN LIGHTS TESTING LABORATORIES

Spectral Results

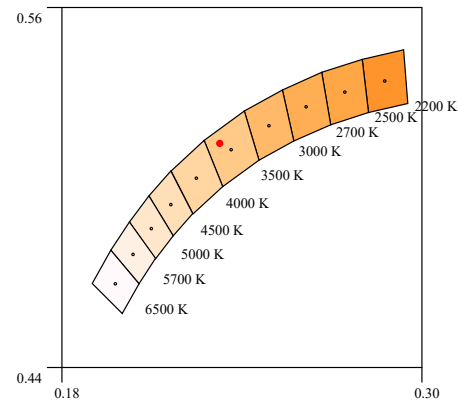
CCT: 3559 K
xy Coordinates: 0.4056 , 0.399
u'v' Coordinates: 0.2326, 0.5147
Delta u'v': +0.00351

Luminous Flux: 5766.17 lm
Radiant Flux: 11.73757 W
Electrical Power: 40.674 W
Efficacy: 141.8 lm/W
Melanopic Flux: 3812 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	91	96	98	96	93	91	94	87	78	96	92	95



NORTHERN LIGHTS TESTING LABORATORIES

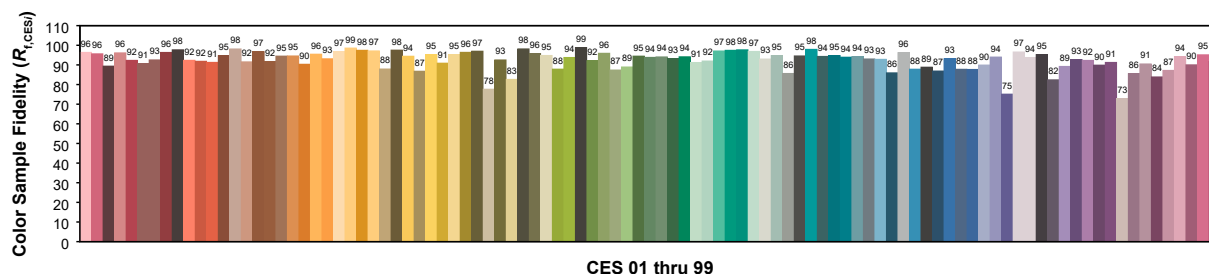
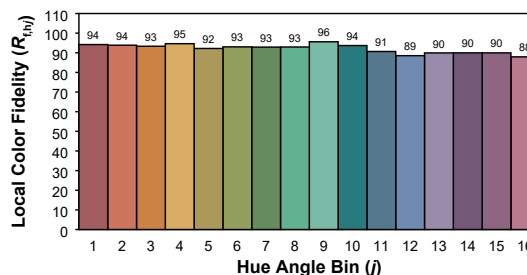
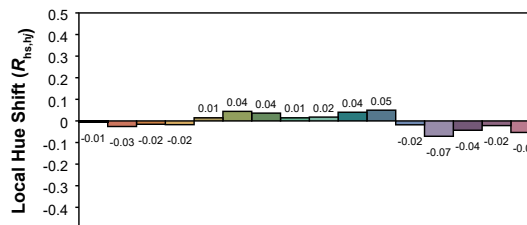
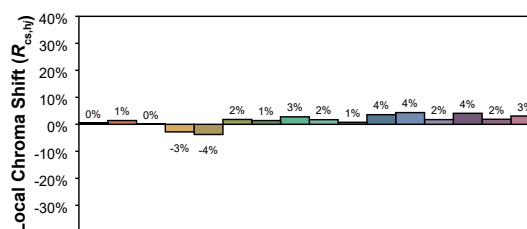
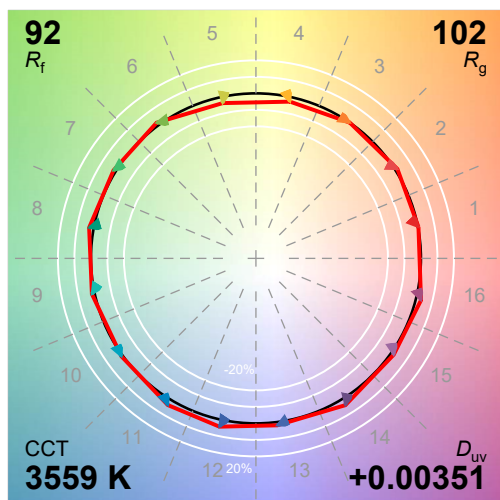
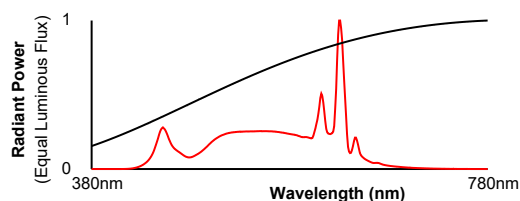
IES TM-30-18 Color Rendition Report

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

Manufacturer: Finelite, Inc.

Date: 06-17-2024

Model: HPR (REF# 22995690)



CES 01 thru 99

x: 0.4056
y: 0.399
u': 0.2326
v': 0.5147

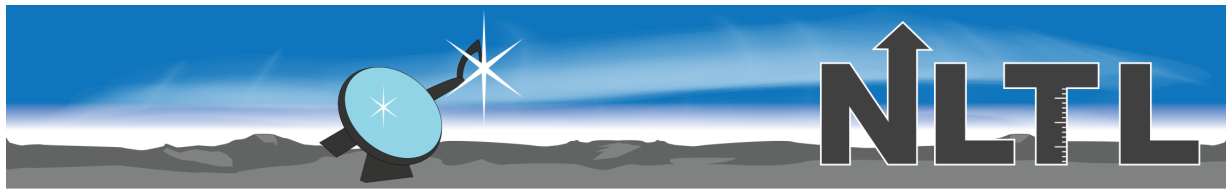
CIE 13.3 1995

CRI Ra: 95
CRI R9: 91

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

Output

Output Lumens	5766.17 lm
Efficiency	N/A %
Efficacy	141.77 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

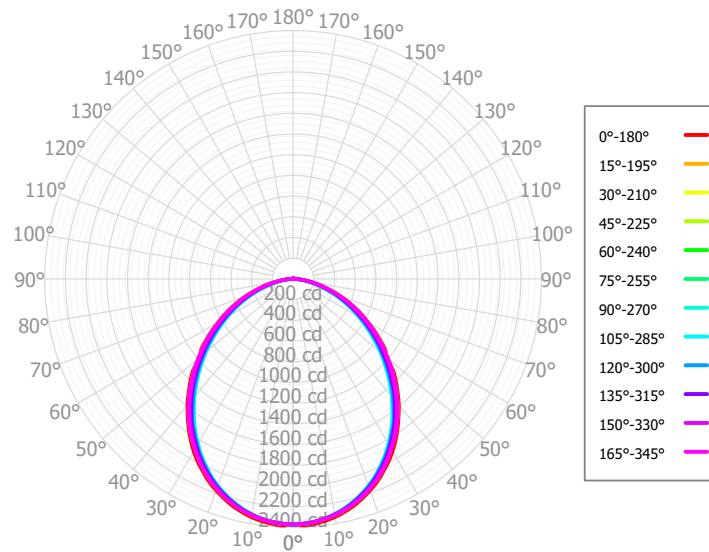
IESNA lateral classification	Type II
IESNA vertical classification	Undefined (Very Short)
Cutoff classification	Cutoff
IESNA TM-15-11 BUG Rating	B2 U2 G1
Maximum Candela	2385.17 cd 0° horizontal 2.5° vertical
Street side total	49.9%
House side total	49.9%

Luminaire Luminance

	0.00°	45.00°	90.00°
0.00°	3192	3192	3192
45.00°	2674	2543	2455
55.00°	2403	2248	2140
65.00°	2112	1920	1810
75.00°	1646	1532	1436
85.00°	1281	1120	996



Candela Polar Plot

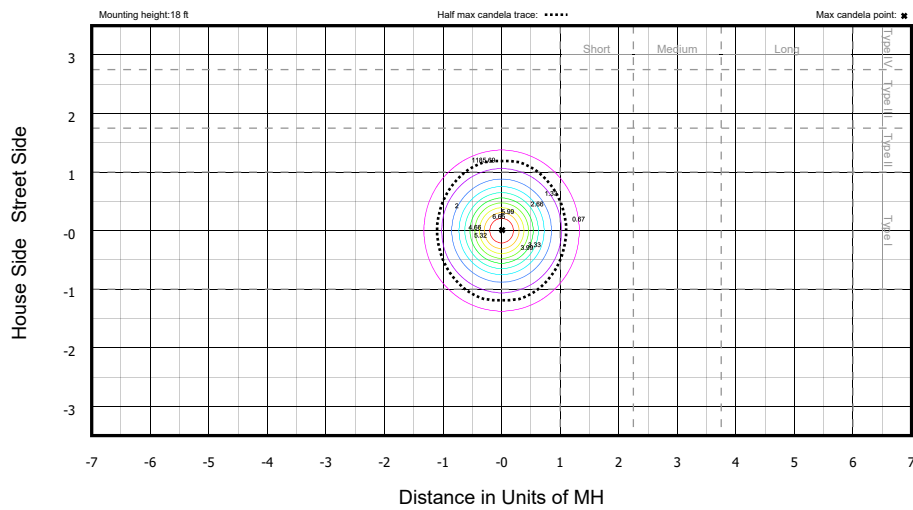


Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 20.00°	858	15%	60.00° - 80.00°	920	16%
0.00° - 30.00°	1787	31%	70.00° - 80.00°	318	6%
0.00° - 40.00°	2853	49%	80.00° - 90.00°	83	1%
0.00° - 60.00°	4746	82%	90.00° - 110.00°	4	0%
0.00° - 80.00°	5666	98%	90.00° - 120.00°	6	0%
0.00° - 90.00°	5749	100%	90.00° - 130.00°	8	0%
10.00° - 90.00°	5522	96%	90.00° - 150.00°	13	0%
20.00° - 40.00°	1995	35%	90.00° - 180.00°	17	0%
20.00° - 50.00°	3027	53%	110.00° - 180.00°	13	0%
40.00° - 70.00°	2496	43%	0.00° - 180.00°	5766	100%

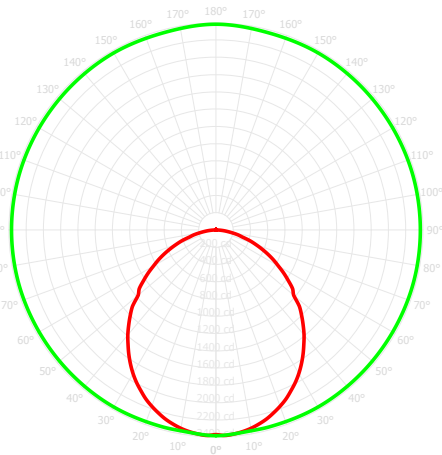


Iso-Illuminance

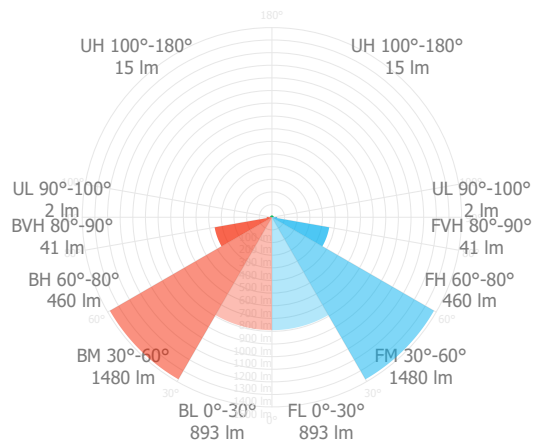


Peak Intensity Plane and Cone

Maximum Candela = 2385.17 cd
0° horizontal, 2.5° vertical



IES TM-15-11 LCS Plot





NORTHERN LIGHTS TESTING LABORATORIES

Candela Table

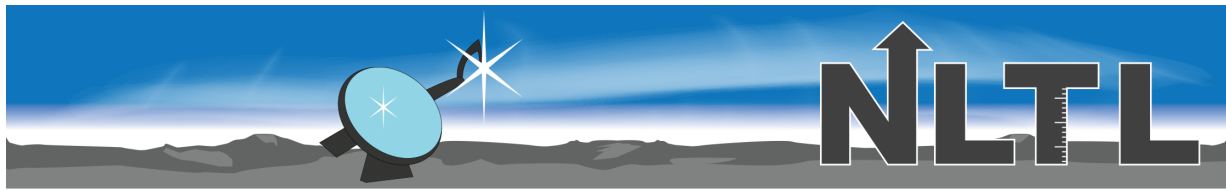
	0.00°	15.00°	30.00°	45.00°	60.00°	75.00°	90.00°	105.00°	120.00°	135.00°	150.00°	165.00°	180.00°	195.00°	210.00°	225.00°	240
0.00°	2373.13	2373.13	2373.13	2373.13	2373.13	2373.13	2373.13	2373.13	2373.13	2373.13	2373.13	2373.13	2373.13	2373.13	2373.13	2373.13	237
2.50°	2385.17	2365.61	2369.81	2366.96	2366.48	2369.89	2369.93	2369.89	2366.48	2366.96	2369.81	2365.61	2385.17	2365.61	2369.81	2366.96	236
5.00°	2375.09	2355.49	2359.34	2356.33	2354.58	2357.40	2358.27	2357.40	2354.58	2356.33	2359.34	2355.49	2375.09	2355.49	2359.34	2356.33	235
7.50°	2358.90	2338.23	2338.63	2337.48	2335.97	2337.48	2338.11	2337.48	2335.97	2337.48	2338.63	2338.23	2358.90	2338.23	2338.63	2337.48	233
10.00°	2335.89	2314.98	2318.44	2312.13	2308.83	2310.62	2309.71	2310.62	2308.83	2312.13	2318.44	2314.98	2335.89	2314.98	2318.44	2312.13	230
12.50°	2304.71	2286.42	2286.26	2280.78	2273.68	2275.83	2274.56	2275.83	2273.68	2280.78	2286.26	2286.42	2304.71	2286.42	2286.26	2280.78	227
15.00°	2268.84	2250.63	2248.81	2240.79	2232.90	2234.52	2230.28	2234.52	2232.90	2240.79	2248.81	2250.63	2268.84	2250.63	2248.81	2240.79	223
17.50°	2223.30	2207.35	2204.29	2193.74	2184.10	2186.16	2181.16	2186.16	2184.10	2193.74	2204.29	2207.35	2223.30	2207.35	2204.29	2193.74	218
20.00°	2174.81	2158.67	2151.76	2142.28	2131.81	2128.75	2125.93	2128.75	2131.81	2142.28	2151.76	2158.67	2174.81	2158.67	2151.76	2142.28	213
22.50°	2121.65	2102.68	2096.30	2082.41	2071.18	2066.82	2066.02	2066.82	2071.18	2082.41	2096.30	2102.68	2121.65	2102.68	2096.30	2082.41	207
25.00°	2057.53	2039.96	2032.98	2017.19	2004.13	1996.40	1994.13	1996.40	2004.13	2017.19	2032.98	2039.96	2057.53	2039.96	2032.98	2017.19	200
27.50°	1993.50	1972.04	1965.37	1946.41	1931.88	1922.32	1923.75	1922.32	1931.88	1946.41	1965.37	1972.04	1993.50	1972.04	1965.37	1946.41	193
30.00°	1922.16	1895.94	1891.50	1867.93	1855.51	1842.62	1839.80	1842.62	1855.51	1867.93	1891.50	1895.94	1922.16	1895.94	1891.50	1867.93	185
32.50°	1843.69	1824.33	1810.92	1788.26	1770.73	1760.93	1756.56	1760.93	1770.73	1788.26	1810.92	1824.33	1843.69	1824.33	1810.92	1788.26	177
35.00°	1760.85	1744.18	1729.11	1705.66	1694.59	1671.38	1669.20	1671.38	1694.59	1705.66	1729.11	1744.18	1760.85	1744.18	1729.11	1705.66	169
37.50°	1673.72	1658.80	1641.94	1615.80	1595.28	1583.90	1572.95	1583.90	1595.28	1615.80	1641.94	1658.80	1673.72	1658.80	1641.94	1615.80	159
40.00°	1589.37	1569.34	1553.19	1526.05	1500.90	1486.89	1482.73	1486.89	1500.90	1526.05	1553.19	1569.34	1589.37	1569.34	1553.19	1526.05	150
42.50°	1497.09	1480.11	1458.21	1434.20	1407.90	1391.47	1386.08	1391.47	1407.90	1434.20	1458.21	1480.11	1497.09	1480.11	1458.21	1434.20	140
45.00°	1405.60	1383.50	1365.84	1336.52	1312.08	1295.22	1290.54	1295.22	1312.08	1336.52	1365.84	1383.50	1405.60	1383.50	1365.84	1336.52	131
47.50°	1313.00	1294.11	1272.45	1242.46	1216.27	1197.54	1195.72	1197.54	1216.27	1242.46	1272.45	1294.11	1313.00	1294.11	1272.45	1242.46	121
50.00°	1176.28	1198.22	1177.35	1144.22	1122.08	1105.06	1101.93	1105.06	1122.08	1144.22	1177.35	1198.22	1176.28	1198.22	1177.35	1144.22	112
52.50°	1120.73	1102.56	1082.49	1052.22	1028.93	1010.91	1003.53	1010.91	1028.93	1052.22	1082.49	1102.56	1120.73	1102.56	1082.49	1052.22	102
55.00°	1024.56	1011.63	989.53	958.46	934.22	917.20	912.68	917.20	934.22	958.46	989.53	1011.63	1024.56	1011.63	989.53	958.46	934
57.50°	932.44	918.71	893.75	866.22	842.93	824.09	821.74	824.09	842.93	866.22	893.75	918.71	932.44	918.71	893.75	866.22	842
60.00°	835.71	827.02	802.34	774.65	752.75	741.76	732.48	741.76	752.75	774.65	802.34	827.02	835.71	827.02	802.34	774.65	752
62.50°	751.68	737.16	712.84	689.03	666.38	654.91	651.22	654.91	666.38	689.03	712.84	737.16	751.68	737.16	712.84	689.03	666
65.00°	663.68	649.04	625.43	603.37	583.85	573.02	568.78	573.02	583.85	603.37	625.43	649.04	663.68	649.04	625.43	603.37	583
67.50°	575.28	560.60	542.00	519.46	501.25	492.76	488.56	492.76	501.25	519.46	542.00	560.60	575.28	560.60	542.00	519.46	501
70.00°	489.75	480.10	461.70	441.54	427.10	417.97	412.22	417.97	427.10	441.54	461.70	480.10	489.75	480.10	461.70	441.54	427
72.50°	409.92	393.14	382.42	363.82	354.69	334.08	336.76	334.08	354.69	363.82	382.42	393.14	409.92	393.14	382.42	363.82	354
75.00°	316.63	317.33	307.40	294.78	285.49	278.26	276.37	278.26	285.49	294.78	307.40	317.33	316.63	317.33	307.40	294.78	285
77.50°	261.31	256.05	241.78	228.72	221.44	214.48	214.57	214.48	221.44	228.72	241.78	256.05	261.31	256.05	241.78	228.72	221
80.00°	190.76	188.88	177.34	168.47	161.75	157.28	153.97	157.28	161.75	168.47	177.34	188.88	190.76	188.88	177.34	168.47	161
82.50°	132.36	128.78	121.94	115.62	107.74	104.31	102.17	104.31	107.74	115.62	121.94	128.78	132.36	128.78	121.94	115.62	107
85.00°	83.02	81.28	77.40	72.58	65.88	65.67	64.50	65.67	65.88	72.58	77.40	81.28	83.02	81.28	77.40	72.58	65

Northern Lights Testing Laboratories

P: 262-891-9700

10200 55th Street Kenosha, Wisconsin 53144

Page 7 of 10



NORTHERN LIGHTS TESTING LABORATORIES

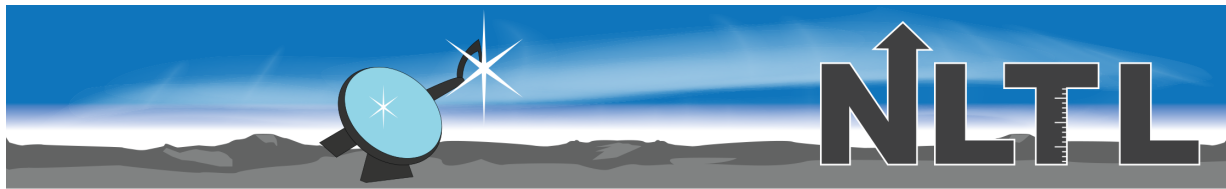
Coefficients of Utilization – Zonal Cavity Method

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	6860	6860	6860	6699	6699	6699	6397	6397	6122	6122	6122	5868	5868	5868	5749
	1.00	6306	6047	5814	6149	5915	5703	5668	5494	5441	5300	5108	5232	5119	5013	4894
	2.00	5764	5313	4940	5613	5203	4861	4998	4710	4808	4568	4262	4633	4435	4258	4136
	3.00	5278	4697	4248	5137	4606	4190	4434	4077	4274	3971	3604	4126	3871	3652	3529
	4.00	4850	4186	3699	4719	4109	3655	3964	3569	3829	3488	3092	3704	3410	3167	3045
RCR	5.00	4474	3758	3258	4353	3693	3224	3571	3157	3456	3093	2687	3350	3032	2777	2657
	6.00	4142	3398	2898	4033	3343	2871	3238	2818	3141	2767	2363	3050	2718	2459	2343
	7.00	3849	3092	2601	3750	3045	2579	2956	2536	2872	2495	2098	2794	2455	2197	2085
	8.00	3590	2830	2352	3500	2790	2334	2713	2299	2641	2265	1880	2573	2233	1978	1870
	9.00	3359	2604	2142	3278	2569	2127	2503	2098	2441	2070	1697	2382	2043	1794	1691
	10.00	3153	2408	1962	3080	2378	1950	2321	1926	2266	1902	1543	2215	1880	1638	1538

Cone of Light

Mounting Height	Beam Center Light Level	0°-180° Beam Width	90°-270° Beam Width
8 ft	37 fc	19 ft	18 ft
10 ft	24 fc	24 ft	22 ft
12 ft	16 fc	28 ft	26 ft
14 ft	12 fc	33 ft	31 ft
20 ft	6 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-S-935

24.3°C, 43RH%

119.90 Vac, 40.674W

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-S-935

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

Test Info

Model: HPR (REF# 22995690)

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

Manufacturer: Finlite, Inc.

Test Date: 06-17-2024

Temperature: 24.3° C

Humidity: 43%

Spectrum Range: 380 - 780 nm

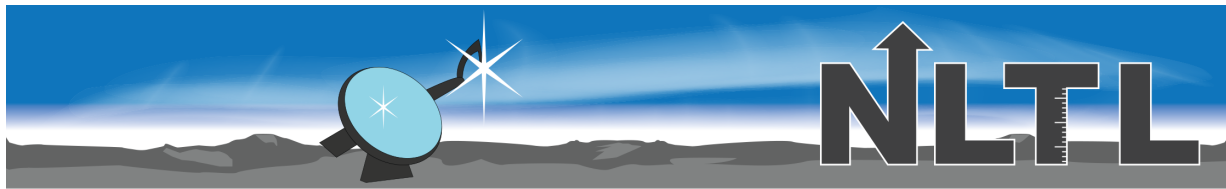
Scan Step: 1 nm

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-SIDES-H-S-935

24.5 °C, 39RH%

119.90 Vac, 40.674W

Stable per LM-79 Standard