



Report Number: REP-020325-04

LM-79-08 Luminaire Photometric Report

Device Under Test

Finelite, Inc.
HP3-P-ID-4'-V-V-835-F-DSO
HP3 Series

Report Date

2/3/2025

Goniophotometric Examination

1/23/2025

Examined By:
Laura Robertson

Approved By:
Joe Guarino

Spectroradiometric Examination

CCT5863
01-29-2025

Examined By:
Laura Robertson

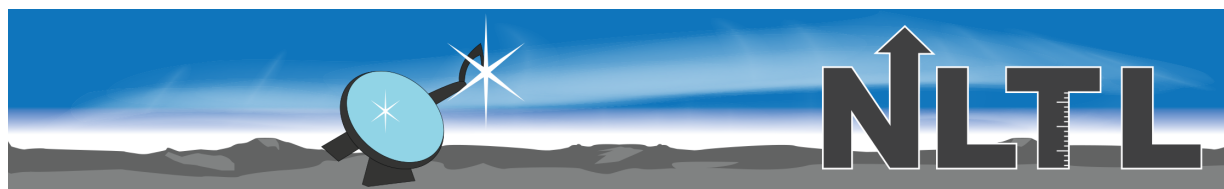
Approved By:
Joe Guarino

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





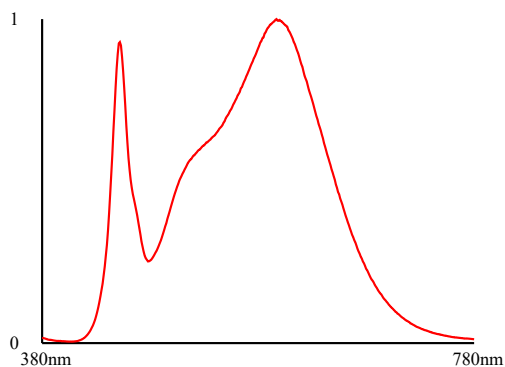
NORTHERN LIGHTS TESTING LABORATORIES

Spectral Results

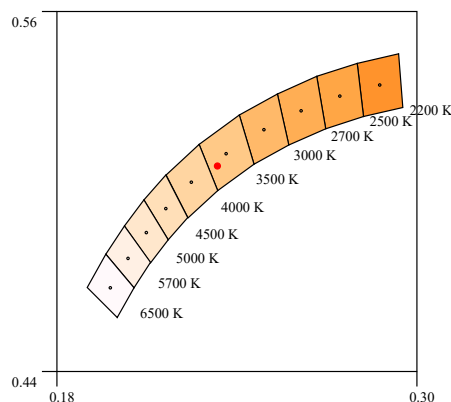
CCT: 3601 K
xy Coordinates: 0.3992 , 0.3864
u'v' Coordinates: 0.2335, 0.5085
Delta u'v': -0.00055

Luminous Flux: 4353.17 lm
Radiant Flux: 10.11542 W
Electrical Power: 34.399 W
Efficacy: 126.6 lm/W
Melanopic Flux: 2773 mel lm
Melanopic Ratio: 0.64

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
84	82	92	96	82	83	89	84	62	8	80	82	67	86	98	75



NORTHERN LIGHTS TESTING LABORATORIES

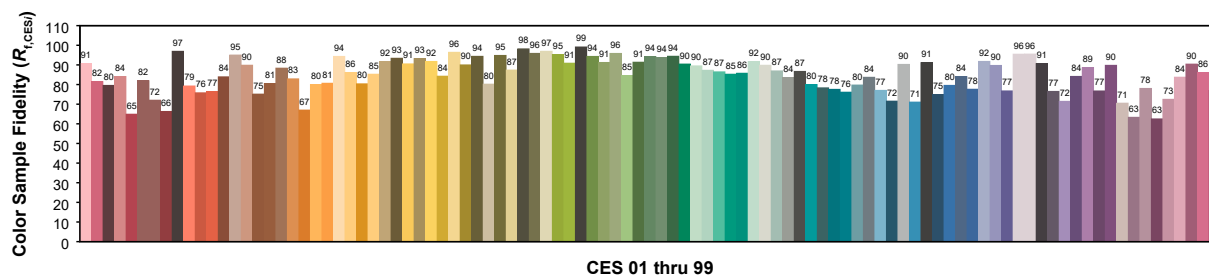
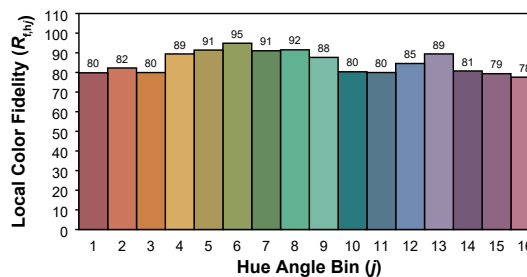
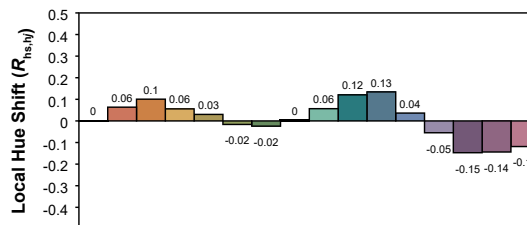
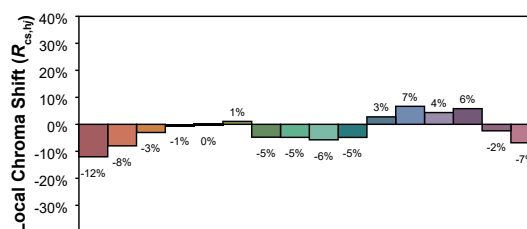
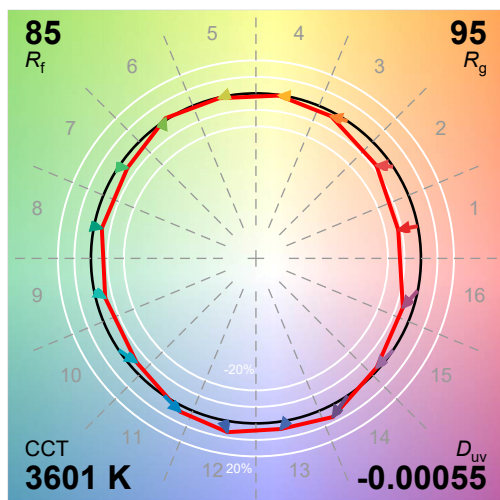
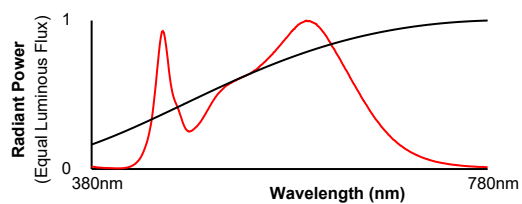
IES TM-30-18 Color Rendition Report

Source: HP3-P-ID-4'-V-V-835-F-DSO

Date: 01-29-2025

Manufacturer: Kenall Manufacturing

Model: HP3 (REF# 23178238)



CES 01 thru 99

x: 0.3992

y: 0.3864

u': 0.2335

v': 0.5085

CIE 13.3 1995

CRI Ra: 84

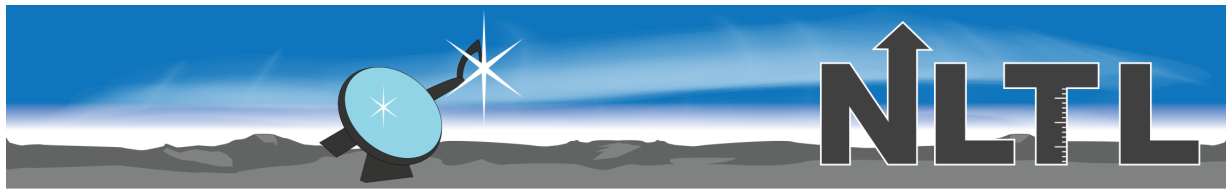
CRI R9: 8

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10200 55th Street Kenosha, Wisconsin 53144

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NORTHERN LIGHTS TESTING LABORATORIES

Performance Summary

Input

Watts	34.4 W
Number of Lamps	160
Lumens per Lamp	N/A
Total Lamp Lumens	N/A

Output

Output Lumens	4353.17 lm
Efficiency	N/A %
Efficacy	126.55 lm/W

Luminous Dimensions

Length	1.22 ft
Width	0.1 ft
Height	0 ft

Roadway CU

Mounting Heights	1	2	4	6	8	10
House Side CU	0.37	0.46	0.49	0.49	0.50	0.50
Street Side CU	0.37	0.46	0.49	0.49	0.50	0.50

Spacing Criterion

Two luminaires, 0°-180° plane	1.41
Two luminaires, 90°-270° plane	1.15
Four luminaires, diagonal	1.41

Full Beam Angle

0°-180° plane	112.26°
90°-270° plane	94.78°

Roadway Summary

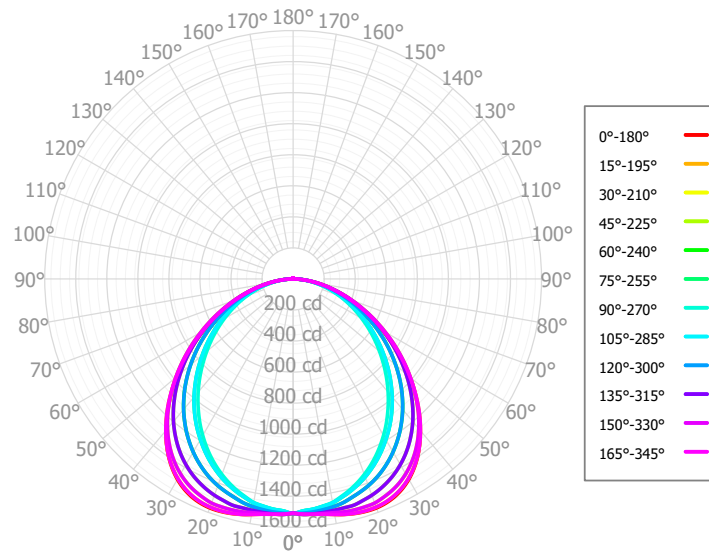
IESNA lateral classification	Type II
IESNA vertical classification	Undefined (Very Short)
Cutoff classification	Cutoff
IESNA TM-15-11 BUG Rating	B2 U2 G1
Maximum Candela	1569.7 cd 0° horizontal 20° vertical
Street side total	49.8%
House side total	49.8%

Luminaire Luminance

	0.00°	45.00°	90.00°
0.00°	12146	12146	12146
45.00°	12856	12284	9542
55.00°	11494	11371	8664
65.00°	9919	10114	7810
75.00°	8310	8626	6984
85.00°	6276	6744	6216



Candela Polar Plot

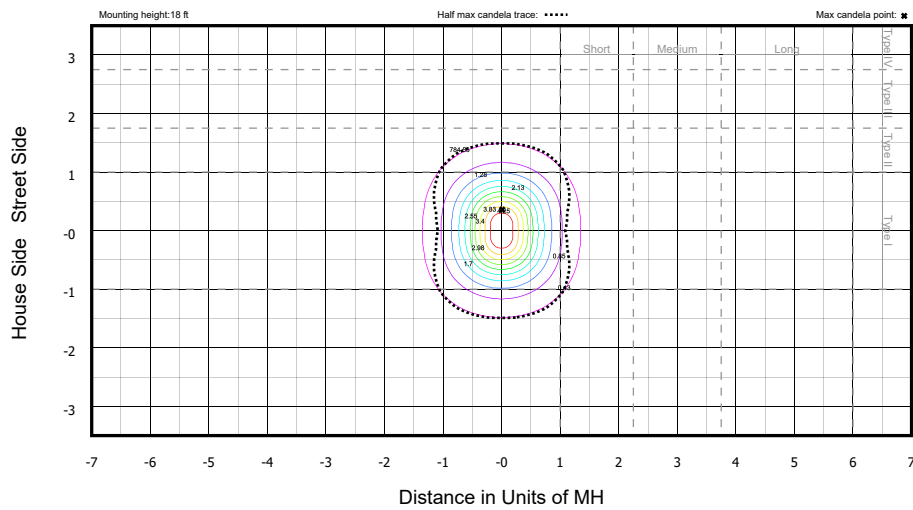


Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 20.00°	568	13%	60.00° - 80.00°	769	18%
0.00° - 30.00°	1223	28%	70.00° - 80.00°	277	6%
0.00° - 40.00°	2012	46%	80.00° - 90.00°	80	2%
0.00° - 60.00°	3489	80%	90.00° - 110.00°	3	0%
0.00° - 80.00°	4258	98%	90.00° - 120.00°	5	0%
0.00° - 90.00°	4338	100%	90.00° - 130.00°	7	0%
10.00° - 90.00°	4192	96%	90.00° - 150.00°	11	0%
20.00° - 40.00°	1444	33%	90.00° - 180.00°	15	0%
20.00° - 50.00°	2238	51%	110.00° - 180.00°	12	0%
40.00° - 70.00°	1969	45%	0.00° - 180.00°	4353	100%

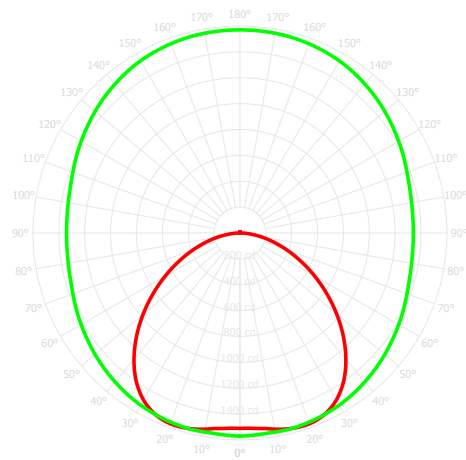


Iso-Illuminance

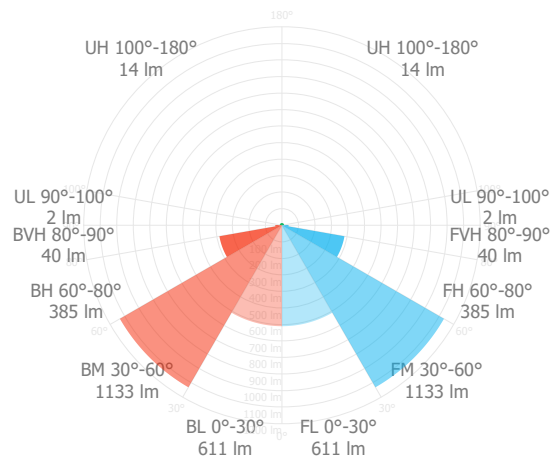


Peak Intensity Plane and Cone

Maximum Candela = 1569.7 cd
0° horizontal, 20° 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°	1510.21	1510.21	1510.21	1510.21	1510.21	1510.21	1510.21	1510.21	1510.21	1510.21	1510.21	1510.21	1510.21	1510.21	1510.21	1510.21	1510.21
2.50°	1510.59	1516.20	1517.34	1519.12	1509.59	1495.22	1495.90	1495.22	1509.59	1519.12	1517.34	1516.20	1510.59	1516.20	1517.34	1519.12	1509.59
5.00°	1517.07	1521.67	1520.58	1518.57	1505.62	1488.56	1487.97	1488.56	1505.62	1518.57	1520.58	1521.67	1517.07	1521.67	1520.58	1518.57	1505.62
7.50°	1525.18	1528.70	1523.86	1516.70	1498.59	1477.20	1475.38	1477.20	1498.59	1516.70	1523.86	1528.70	1525.18	1528.70	1523.86	1516.70	1498.59
10.00°	1539.59	1540.73	1528.42	1513.28	1489.84	1465.21	1461.61	1465.21	1489.84	1513.28	1528.42	1540.73	1539.59	1540.73	1528.42	1513.28	1489.84
12.50°	1553.37	1552.82	1535.85	1510.54	1477.43	1441.91	1435.06	1441.91	1477.43	1510.54	1535.85	1552.82	1553.37	1552.82	1535.85	1510.54	1477.43
15.00°	1563.31	1561.03	1538.82	1508.81	1457.73	1417.64	1407.52	1417.64	1457.73	1508.81	1538.82	1561.03	1563.31	1561.03	1538.82	1508.81	1457.73
17.50°	1569.06	1564.82	1539.09	1496.09	1438.44	1389.50	1375.87	1389.50	1438.44	1496.09	1539.09	1564.82	1569.06	1564.82	1539.09	1496.09	1438.44
20.00°	1569.70	1563.45	1536.22	1482.54	1416.96	1357.62	1340.20	1357.62	1416.96	1482.54	1536.22	1563.45	1569.70	1563.45	1536.22	1482.54	1416.96
22.50°	1562.76	1555.97	1522.04	1464.30	1391.24	1321.69	1301.16	1321.69	1391.24	1464.30	1522.04	1555.97	1562.76	1555.97	1522.04	1464.30	1391.24
25.00°	1547.80	1540.46	1504.66	1441.54	1360.54	1282.69	1258.66	1282.69	1360.54	1441.54	1504.66	1540.46	1547.80	1540.46	1504.66	1441.54	1360.54
27.50°	1523.72	1517.02	1481.04	1414.27	1325.84	1240.14	1212.78	1240.14	1325.84	1414.27	1481.04	1517.02	1523.72	1517.02	1481.04	1414.27	1325.84
30.00°	1490.61	1484.73	1450.25	1381.16	1287.16	1194.94	1164.25	1194.94	1287.16	1381.16	1450.25	1484.73	1490.61	1484.73	1450.25	1381.16	1287.16
32.50°	1448.47	1444.37	1412.26	1343.21	1244.43	1148.29	1113.90	1148.29	1244.43	1343.21	1412.26	1444.37	1448.47	1444.37	1412.26	1343.21	1244.43
35.00°	1398.03	1396.12	1367.57	1299.89	1198.77	1098.76	1060.63	1098.76	1198.77	1299.89	1367.57	1396.12	1398.03	1396.12	1367.57	1299.89	1198.77
37.50°	1339.20	1339.56	1316.30	1251.54	1149.34	1046.49	1006.72	1046.49	1149.34	1251.54	1316.30	1339.56	1339.20	1339.56	1316.30	1251.54	1149.34
40.00°	1273.62	1276.08	1258.70	1198.87	1097.39	992.54	951.54	992.54	1097.39	1198.87	1258.70	1276.08	1273.62	1276.08	1258.70	1198.87	1097.39
42.50°	1203.75	1207.99	1196.40	1141.49	1042.02	936.22	895.54	936.22	1042.02	1141.49	1196.40	1207.99	1203.75	1207.99	1196.40	1141.49	1042.02
45.00°	1130.32	1135.61	1128.77	1080.01	984.47	879.80	838.89	879.80	984.47	1080.01	1128.77	1135.61	1130.32	1135.61	1128.77	1080.01	984.47
47.50°	1054.16	1059.77	1058.44	1015.89	924.13	822.02	782.34	822.02	924.13	1015.89	1058.44	1059.77	1054.16	1059.77	1058.44	1015.89	924.13
50.00°	976.53	983.28	985.88	948.80	862.61	764.37	726.70	764.37	862.61	948.80	985.88	983.28	976.53	983.28	985.88	948.80	862.61
52.50°	898.27	906.12	911.86	880.39	799.58	706.91	672.06	706.91	799.58	880.39	911.86	906.12	898.27	906.12	911.86	880.39	799.58
55.00°	819.74	828.63	837.07	810.93	735.91	649.99	617.88	649.99	735.91	810.93	837.07	828.63	819.74	828.63	837.07	810.93	735.91
57.50°	742.48	751.60	761.59	740.43	671.38	593.39	564.34	593.39	671.38	740.43	761.59	751.60	742.48	751.60	761.59	740.43	671.38
60.00°	666.95	674.84	686.02	670.15	607.76	537.02	511.65	537.02	607.76	670.15	686.02	674.84	666.95	674.84	686.02	670.15	607.76
62.50°	593.62	600.55	613.09	600.64	543.83	482.66	460.39	482.66	543.83	600.64	613.09	600.55	593.62	600.55	613.09	600.64	543.83
65.00°	521.20	529.11	541.43	531.46	482.92	429.71	410.41	429.71	482.92	531.46	541.43	529.11	521.20	529.11	541.43	531.46	482.92
67.50°	453.40	459.77	471.19	463.81	422.70	378.14	362.10	378.14	422.70	463.81	471.19	459.77	453.40	459.77	471.19	463.81	422.70
70.00°	387.79	393.77	404.71	399.37	365.00	327.68	314.47	327.68	365.00	399.37	404.71	393.77	387.79	393.77	404.71	399.37	365.00
72.50°	325.49	331.15	340.73	336.87	309.13	278.79	268.40	278.79	309.13	336.87	340.73	331.15	325.49	331.15	340.73	336.87	309.13
75.00°	267.42	271.78	278.73	277.58	255.50	231.95	224.74	231.95	255.50	277.58	278.73	271.78	267.42	271.78	278.73	277.58	255.50
77.50°	212.87	216.11	221.93	221.41	204.83	187.27	182.47	187.27	204.83	221.41	221.93	216.11	212.87	216.11	221.93	221.41	204.83
80.00°	160.45	163.79	168.24	168.17	156.82	144.38	142.15	144.38	156.82	168.17	168.24	163.79	160.45	163.79	168.24	168.17	156.82
82.50°	112.73	114.05	118.11	118.85	112.02	104.74	104.30	104.74	112.02	118.85	118.11	114.05	112.73	114.05	118.11	118.85	112.02
85.00°	68.01	69.06	72.25	73.08	70.23	66.65	67.36	66.65	70.23	73.08	72.25	69.06	68.01	69.06	72.25	73.08	70.23

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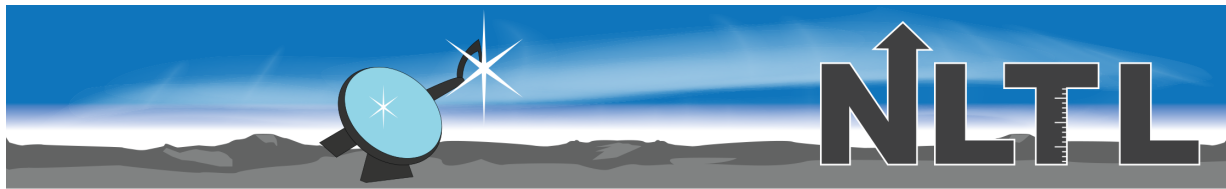
Coefficients of Utilization – Zonal Cavity Method

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	5179	5179	5179	5056	5056	5056	4828	4828	4620	4620	4620	4428	4428	4428	4338
	1.00	4739	4534	4350	4619	4433	4266	4246	4108	4073	3961	3808	3914	3824	3740	3648
	2.00	4315	3961	3668	4199	3877	3608	3720	3494	3576	3387	3146	3442	3286	3147	3052
	3.00	3939	3485	3134	3830	3415	3089	3283	3004	3161	2924	2636	3048	2847	2676	2580
	4.00	3609	3092	2713	3508	3033	2679	2922	2614	2819	2552	2244	2723	2493	2304	2209
RCR	5.00	3321	2765	2377	3228	2716	2351	2621	2300	2534	2251	1936	2452	2205	2007	1914
	6.00	3068	2491	2104	2984	2449	2084	2369	2043	2295	2005	1691	2225	1967	1766	1676
	7.00	2846	2260	1880	2769	2224	1864	2156	1831	2092	1800	1492	2031	1769	1569	1483
	8.00	2649	2063	1694	2580	2032	1680	1973	1653	1918	1628	1330	1866	1603	1406	1323
	9.00	2475	1893	1537	2413	1867	1525	1816	1503	1768	1482	1195	1723	1461	1269	1190
	10.00	2320	1747	1403	2264	1724	1394	1679	1375	1638	1358	1081	1598	1340	1154	1077

Cone of Light

Mounting Height	Beam Center Light Level	0°-180° Beam Width	90°-270° Beam Width
8 m	24 lx	24 m	17 m
10 m	15 lx	30 m	22 m
12 m	10 lx	36 m	26 m
14 m	8 lx	42 m	30 m
20 m	4 lx	60 m	43 m
25 m	2 lx	74 m	54 m
30 m	2 lx	89 m	65 m



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: 2/3/2025

Sphere Test:

Output test: HP3-P-ID-4'-V-V-835-F-DSO-120

24.6°C, 22RH%

119.92 Vac, 34.399W

Stable per LM-79 Standard

Spectrum Range: 380-780 nm

Scan Step: 1 nm

Test Info

Manufacturer - Kenall Manufacturing

Model: HP3-P-ID-4'-V-V-835-F-DSO-120

Sample: HP3-P-ID-4'-V-V-835-F-DSO-120

Test Info

Model: HP3 (REF# 23178238)

Sample: HP3-P-ID-4'-V-V-835-F-DSO

Manufacturer: Kenall Manufacturing

Test Date: 01-29-2025

Temperature: 24.6° C

Humidity: 22%

Spectrum Range: 380 - 780 nm

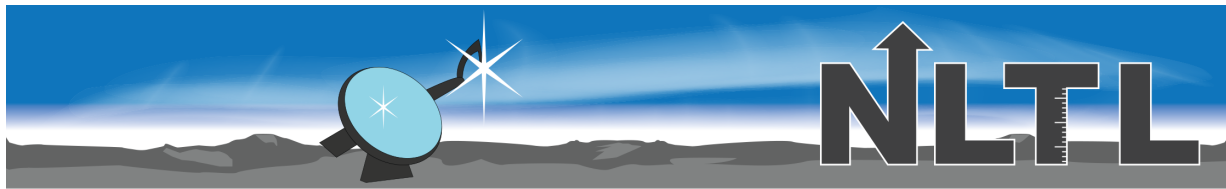
Scan Step: 1 nm

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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 Check Due: 3/5/2025

Goniometer Test:

Distribution Test: HP3-P-ID-4'-V-V-835-F-DSO-120

24.2 °C, 22RH%

119.92 Vac, 34.399W

Stable per LM-79 Standard