

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269



Scaled data based on original data using
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Test Report Prepared for
Cooper Lighting Solutions

Brand: NEO-RAY

Report Number: P910889

Luminaire Tested: DFN2DIP-HX4F0-050D040US850-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P910889
REPORT IS A COMBINATION OF REPORTS P899302 AND P896188
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX4F0-050D040US850-RLLFLL
Description: 4 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

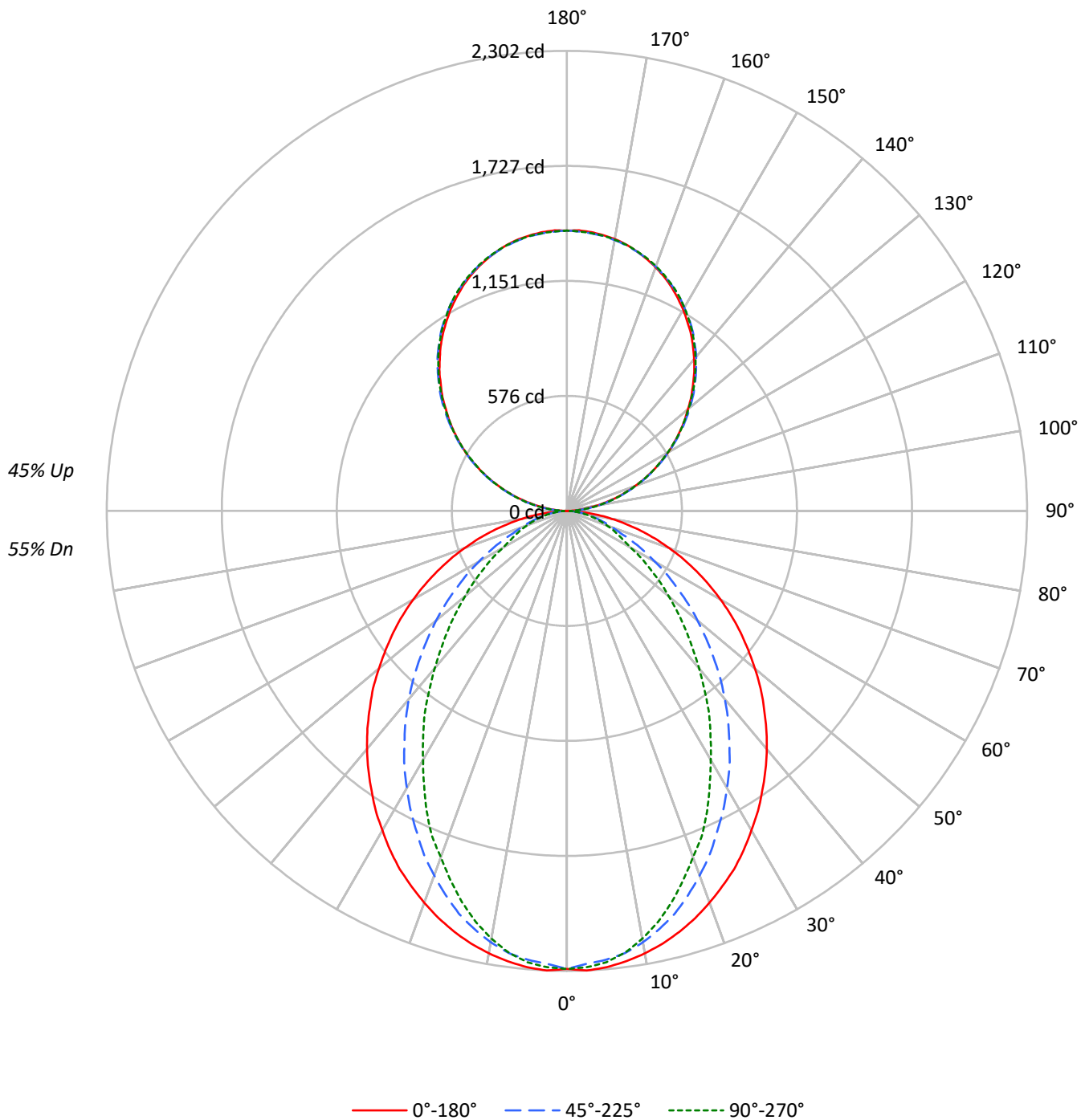
Lumens per Lamp: N/A
Luminaire Lumens: 8639.1 lumens
Efficiency: N/A
Efficacy: 128.2 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.54' x L: 4.09' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 67.4
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9957
Total Harmonic Distortion (THDi): 0.049
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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Luminous Intensity Polar Plot



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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				20
RC	80				70				50				30				10
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10
RCR																	
0	108	108	108	108	100	100	100	100	86	86	86	73	73	73	60	60	60
1	99	95	91	88	92	89	85	82	76	74	72	65	63	62	54	53	52
2	91	84	78	73	84	78	73	69	67	63	60	57	55	52	48	46	45
3	83	74	67	61	77	69	63	58	60	55	51	51	48	45	43	41	39
4	76	66	58	52	71	62	55	50	54	48	44	46	42	39	39	36	34
5	70	59	51	45	65	55	48	43	48	43	38	42	37	34	35	32	30
6	65	53	45	40	60	50	43	38	44	38	34	38	33	30	32	29	26
7	60	48	40	35	56	45	38	33	40	34	30	35	30	27	30	26	24
8	56	44	36	31	52	41	34	30	36	31	27	32	27	24	27	24	21
9	52	40	33	28	49	38	31	27	34	28	24	29	25	22	25	22	19
10	49	37	30	25	46	35	28	24	31	26	22	27	23	20	24	20	18

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1704	1704	1704
5°	1707	1677	1688
10°	1690	1644	1633
15°	1667	1590	1548
20°	1636	1515	1444
25°	1605	1432	1343
30°	1563	1346	1216
35°	1522	1253	1104
40°	1479	1158	975
45°	1431	1051	859
50°	1380	944	745
55°	1328	829	636
60°	1266	710	523
65°	1196	588	471
70°	1111	474	427
75°	1005	418	388
80°	850	352	337
85°	595	236	254

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1431 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	214.8	2.5
10°-20°	589.6	6.8
20°-30°	827.8	9.6
30°-40°	902.4	10.4
40°-50°	829.4	9.6
50°-60°	651.3	7.5
60°-70°	424.0	4.9
70°-80°	218.2	2.5
80°-90°	59.7	0.7
90°-100°	86.8	1.0
100°-110°	275.8	3.2
110°-120°	472.0	5.5
120°-130°	620.8	7.2
130°-140°	696.8	8.1
140°-150°	683.3	7.9
150°-160°	573.2	6.6
160°-170°	380.1	4.4
170°-180°	132.9	1.5
0°-30°	1632.2	18.9
0°-40°	2534.6	29.3
0°-60°	4015.3	46.5
0°-90°	4717.3	54.6
90°-120°	834.7	9.7
90°-150°	2835.6	32.8
90°-180°	3922.0	45.4
0°-180°	8639.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2292	2292	2292	2292	2292	
5°	2292	2281	2254	2273	2267	217
15°	2180	2157	2086	2047	2026	614
25°	1979	1912	1775	1690	1659	910
35°	1705	1599	1417	1286	1240	1067
45°	1394	1255	1037	890	840	1076
55°	1060	898	674	550	510	947
65°	716	548	361	290	284	709
75°	382	236	166	151	149	404
85°	89	46	39	39	39	102
90°	1	15	42	39	40	8
95°	62	74	76	76	74	69
105°	255	258	260	263	263	269
115°	474	480	478	477	474	469
125°	689	700	696	692	691	616
135°	891	904	907	906	902	689
145°	1082	1090	1097	1098	1094	676
155°	1237	1240	1244	1250	1246	569
165°	1346	1345	1345	1353	1347	380
175°	1400	1397	1394	1403	1396	133
180°	1403	1403	1403	1403	1403	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2291.7	2291.7	2291.7	2291.7	2291.7
2.5°	2302.1	2291.7	2268.9	2289.8	2285.5
5°	2291.7	2281.4	2254.4	2273.0	2266.9
7.5°	2273.0	2260.7	2231.6	2239.8	2229.4
10°	2248.2	2233.6	2192.3	2185.9	2173.5
12.5°	2217.1	2198.5	2142.4	2130.1	2107.1
15°	2179.7	2156.9	2086.5	2047.1	2026.4
17.5°	2136.2	2103.0	2015.8	1970.2	1937.0
20°	2086.5	2044.9	1941.2	1889.5	1843.7
22.5°	2032.6	1984.8	1864.5	1794.0	1763.0
25°	1978.6	1912.1	1775.3	1690.3	1659.1
27.5°	1914.4	1843.7	1692.3	1594.9	1547.2
30°	1845.9	1767.0	1601.1	1495.4	1439.3
32.5°	1779.5	1684.0	1514.1	1389.6	1337.7
35°	1704.9	1599.1	1416.6	1285.9	1240.2
37.5°	1632.2	1518.1	1325.4	1182.1	1130.4
40°	1555.5	1431.2	1229.8	1082.6	1028.7
42.5°	1476.7	1344.0	1134.5	980.9	929.2
45°	1393.8	1254.7	1037.0	889.6	839.8
47.5°	1314.9	1167.8	943.8	796.4	750.8
50°	1227.9	1080.6	852.5	709.2	665.8
52.5°	1142.7	987.1	765.3	628.5	589.1
55°	1059.8	898.0	673.9	549.6	510.3
57.5°	974.8	808.9	593.2	477.1	443.8
60°	887.6	721.7	508.0	402.5	369.2
62.5°	802.7	636.8	435.5	336.0	319.5
65°	715.5	547.5	360.9	290.4	284.1
67.5°	632.6	464.6	290.4	255.1	248.9
70°	545.5	383.7	240.5	219.8	211.5
72.5°	462.6	309.0	201.2	184.6	180.4
75°	381.6	236.3	165.9	151.4	149.4
77.5°	300.8	167.9	130.8	122.3	118.1
80°	226.0	120.3	99.5	91.3	91.3
82.5°	157.6	81.0	68.4	64.2	64.2
85°	89.2	45.6	39.4	39.4	39.4
87.5°	33.3	16.5	16.5	14.5	14.5
90°	1.2	15.2	41.5	38.9	40.1
92.5°	26.2	35.5	36.8	38.0	38.0
95°	61.8	73.6	75.7	75.7	73.6
97.5°	102.8	113.8	118.4	118.4	118.4
100°	150.2	159.9	163.2	163.2	162.0
102.5°	200.1	207.3	211.9	213.1	211.9
105°	254.6	258.0	260.5	262.6	262.6
107.5°	308.7	313.8	313.8	314.6	308.7
110°	361.2	368.0	368.0	368.0	364.6

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	417.9	425.1	423.7	420.4	417.9
115°	473.7	480.5	478.3	477.1	473.7
117.5°	529.1	538.4	532.5	529.1	525.8
120°	585.0	594.2	585.0	585.0	581.1
122.5°	635.7	647.5	641.7	638.2	635.7
125°	689.0	699.6	696.2	692.3	691.1
127.5°	741.0	754.1	749.5	744.4	741.0
130°	789.6	804.9	802.8	800.3	795.6
132.5°	844.2	856.0	856.9	850.9	847.6
135°	891.2	904.3	906.8	905.5	902.2
137.5°	943.6	954.2	956.3	955.4	950.4
140°	989.7	1000.3	1006.2	1006.2	1001.5
142.5°	1037.1	1047.7	1051.0	1052.3	1047.7
145°	1081.9	1090.4	1097.1	1098.5	1093.8
147.5°	1122.1	1132.6	1137.7	1139.8	1135.2
150°	1163.6	1170.8	1175.4	1179.2	1175.4
152.5°	1200.4	1207.5	1213.5	1218.1	1213.5
155°	1237.1	1240.5	1244.3	1250.3	1246.4
157.5°	1268.9	1271.4	1273.5	1282.0	1276.0
160°	1297.2	1299.7	1301.0	1308.2	1303.1
162.5°	1323.4	1323.4	1324.7	1332.7	1326.8
165°	1345.9	1344.6	1344.6	1353.0	1347.1
167.5°	1366.2	1362.3	1362.3	1370.8	1364.8
170°	1381.4	1377.9	1376.7	1385.1	1377.9
172.5°	1391.9	1388.6	1387.2	1395.8	1388.6
175°	1400.4	1397.0	1394.5	1402.9	1395.8
177.5°	1405.1	1401.7	1399.1	1406.3	1399.1
180°	1402.9	1402.9	1402.9	1402.9	1402.9

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CIE UGR TABLE:

Reflectances:											
Ceiling		0.7	0.7	0.5	0.5	0.3	0.7	0.7	0.5	0.5	0.3
Wall		0.5	0.3	0.5	0.3	0.3	0.5	0.3	0.5	0.3	0.3
Reference plane		0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Room dimensions		Viewed crosswise					Viewed endwise				
X=2H	Y=2H	9.42	10.29	10.34	11.22	12.43	5.39	6.26	6.32	7.20	8.40
	3H	11.10	11.88	12.04	12.82	14.05	6.59	7.36	7.52	8.31	9.54
	4H	11.71	12.45	12.66	13.40	14.64	7.04	7.77	7.99	8.72	9.96
	6H	12.14	12.81	13.10	13.77	15.02	7.36	8.04	8.32	9.00	10.25
	8H	12.26	12.91	13.23	13.88	15.13	7.46	8.10	8.42	9.07	10.32
	12H	12.33	12.94	13.30	13.91	15.18	7.50	8.11	8.47	9.08	10.35
4H	2H	9.44	10.18	10.40	11.13	12.37	5.99	6.73	6.95	7.68	8.92
	3H	11.28	11.89	12.24	12.87	14.12	7.35	7.96	8.31	8.94	10.19
	4H	11.97	12.53	12.94	13.50	14.78	7.90	8.46	8.87	9.43	10.71
	6H	12.49	12.97	13.48	13.97	15.24	8.32	8.80	9.31	9.80	11.08
	8H	12.67	13.11	13.65	14.10	15.40	8.45	8.90	9.44	9.89	11.18
	12H	12.76	13.17	13.77	14.17	15.47	8.52	8.92	9.53	9.93	11.23
8H	4H	11.94	12.39	12.93	13.38	14.67	8.18	8.63	9.17	9.62	10.91
	6H	12.51	12.88	13.52	13.91	15.20	8.70	9.07	9.72	10.11	11.40
	8H	12.73	13.05	13.75	14.07	15.38	8.90	9.22	9.92	10.24	11.55
	12H	12.87	13.16	13.89	14.17	15.52	9.02	9.31	10.04	10.32	11.67
12H	4H	11.90	12.30	12.90	13.31	14.60	8.19	8.59	9.20	9.60	10.90
	6H	12.49	12.81	13.51	13.83	15.14	8.75	9.08	9.78	10.10	11.41
	8H	12.71	13.00	13.73	14.01	15.36	8.97	9.25	9.99	10.27	11.62