

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: P911152

Luminaire Tested: DFN2DIP-PN3F0-030D080US850-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P911152
REPORT IS A COMBINATION OF REPORTS P899581 AND P896399
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN3F0-030D080US850-FLLFLL
Description: 3 foot, Pentagon Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

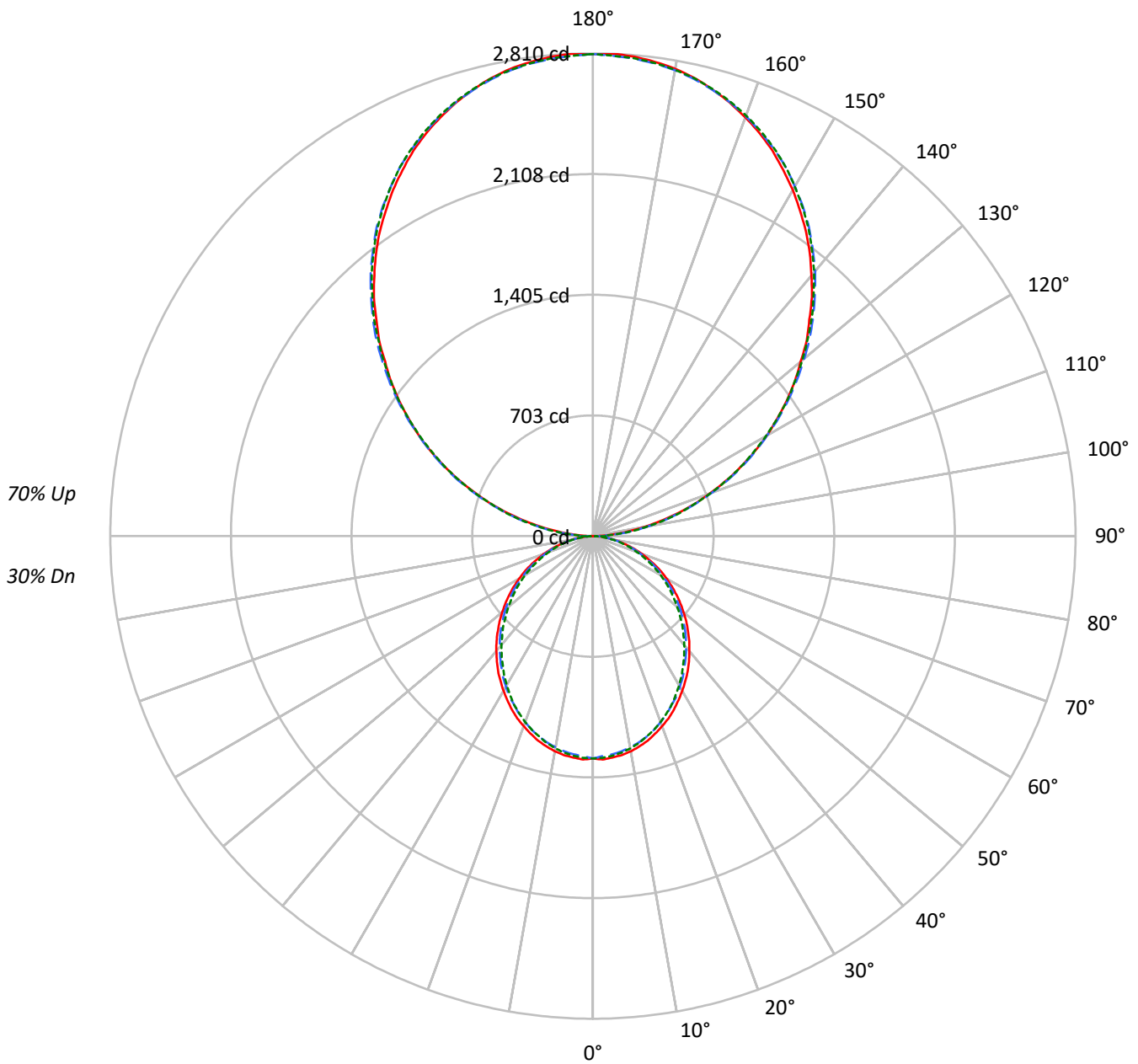
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 11145.5 lumens
Efficiency: N/A
Efficacy: 130.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.96' x L: 3.11' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 85.3
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.099
Total Harmonic Distortion (THDi): 0.979
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



— 0°-180° - - 45°-225° - - - 90°-270°



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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				20				20
RC	80				70				50				30				10				0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR																					
0	102	102	102	102	92	92	92	92	72	72	72	54	54	54	37	37	37	37	37	37	30
1	93	89	85	82	83	80	77	74	63	61	59	47	46	45	33	32	32	32	32	32	25
2	85	78	72	67	76	70	65	61	55	52	49	42	39	37	29	28	27	27	27	27	21
3	77	68	61	56	69	61	55	51	49	44	41	37	34	32	26	24	23	23	23	23	18
4	71	60	53	47	63	54	48	43	43	38	35	33	30	27	23	21	19	19	19	19	15
5	65	54	46	40	58	48	42	37	38	34	30	29	26	23	21	19	17	17	17	17	13
6	60	48	40	34	53	43	37	32	35	30	26	26	23	20	19	17	15	15	15	15	12
7	55	43	35	30	49	39	32	28	31	26	23	24	20	18	17	15	13	13	13	13	10
8	51	39	32	26	46	35	29	24	28	24	20	22	18	16	16	13	12	12	12	12	9
9	47	35	28	23	42	32	26	22	26	21	18	20	17	14	14	12	11	11	11	11	8
10	44	32	25	21	40	29	23	19	24	19	16	18	15	13	13	11	10	10	10	10	8

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1513	1513	1513
5°	1515	1491	1502
10°	1502	1470	1481
15°	1479	1445	1448
20°	1448	1410	1415
25°	1417	1369	1377
30°	1379	1330	1328
35°	1343	1285	1277
40°	1299	1239	1229
45°	1254	1194	1178
50°	1206	1145	1121
55°	1155	1089	1068
60°	1097	1023	1006
65°	1034	955	934
70°	954	871	857
75°	843	771	784
80°	709	643	647
85°	500	425	422

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°
 Vertical Angle: 90°
 Luminance: 2781 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	121.8	1.1
10°-20°	342.8	3.1
20°-30°	503.8	4.5
30°-40°	585.2	5.3
40°-50°	584.4	5.2
50°-60°	509.6	4.6
60°-70°	376.7	3.4
70°-80°	213.1	1.9
80°-90°	64.2	0.6
90°-100°	173.6	1.6
100°-110°	551.7	4.9
110°-120°	944.1	8.5
120°-130°	1241.6	11.1
130°-140°	1393.7	12.5
140°-150°	1366.6	12.3
150°-160°	1146.4	10.3
160°-170°	760.3	6.8
170°-180°	265.7	2.4
0°-30°	968.5	8.7
0°-40°	1553.6	13.9
0°-60°	2647.7	23.8
0°-90°	3301.7	29.6
90°-120°	1669.4	15.0
90°-150°	5671.3	50.9
90°-180°	7844.0	70.4
0°-180°	11145.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1294	1294	1294	1294	1294	
5°	1294	1290	1276	1286	1283	123
15°	1232	1225	1209	1214	1208	347
25°	1115	1106	1084	1087	1084	513
35°	962	950	930	922	916	601
45°	783	774	756	742	737	604
55°	593	585	570	555	549	530
65°	400	392	380	368	362	395
75°	209	207	200	193	196	223
85°	51	50	49	45	44	57
90°	3	30	83	78	80	11
95°	124	147	151	151	147	137
105°	509	516	521	525	525	537
115°	947	961	957	954	947	937
125°	1378	1399	1392	1385	1382	1231
135°	1782	1809	1814	1811	1804	1378
145°	2164	2181	2194	2197	2188	1352
155°	2474	2481	2489	2500	2493	1139
165°	2692	2689	2689	2706	2694	759
175°	2801	2794	2789	2806	2792	266
180°	2806	2806	2806	2806	2806	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1294.5	1294.5	1294.5	1294.5	1294.5
2.5°	1302.1	1295.9	1282.1	1294.5	1292.2
5°	1294.5	1289.7	1275.9	1285.9	1283.4
7.5°	1285.9	1278.5	1264.7	1274.8	1272.2
10°	1272.2	1263.5	1248.6	1258.5	1254.8
12.5°	1253.5	1246.1	1231.2	1237.3	1234.9
15°	1232.3	1225.0	1208.7	1213.7	1207.5
17.5°	1206.1	1198.8	1182.5	1188.7	1182.5
20°	1177.5	1170.1	1152.7	1156.4	1151.5
22.5°	1149.0	1137.8	1121.5	1121.5	1119.0
25°	1115.3	1105.5	1084.3	1086.7	1084.3
27.5°	1077.9	1069.2	1053.1	1049.4	1043.2
30°	1040.7	1030.7	1012.1	1008.3	1003.3
32.5°	1000.9	993.4	973.5	965.9	960.9
35°	962.3	949.9	929.9	922.4	916.1
37.5°	918.7	907.5	887.5	878.8	872.6
40°	873.9	863.9	843.9	832.9	827.9
42.5°	830.3	820.3	800.5	787.9	780.5
45°	783.1	774.3	755.6	741.9	736.9
47.5°	736.9	728.3	708.3	694.6	687.1
50°	688.4	682.1	664.7	647.3	641.1
52.5°	641.1	632.4	616.3	602.5	593.8
55°	592.6	585.1	570.1	555.3	549.1
57.5°	544.0	537.8	521.6	506.6	501.6
60°	495.4	490.5	473.1	459.3	455.7
62.5°	448.1	439.4	427.0	414.5	409.6
65°	399.7	392.1	379.7	368.5	362.3
67.5°	349.9	343.6	332.4	323.7	318.7
70°	303.8	298.8	287.6	278.8	273.9
72.5°	256.5	251.4	245.2	236.5	232.9
75°	209.0	206.7	200.4	193.0	195.5
77.5°	166.8	161.8	159.3	155.6	151.9
80°	124.5	123.2	120.7	117.0	114.6
82.5°	84.6	84.6	83.5	78.4	78.4
85°	51.0	49.8	48.6	44.8	43.6
87.5°	22.4	20.0	17.4	13.8	12.4
90°	2.6	30.5	83.0	77.9	80.4
92.5°	52.5	71.1	73.6	76.1	76.1
95°	123.5	147.2	151.4	151.4	147.2
97.5°	205.6	227.6	236.9	236.9	236.9
100°	300.3	319.7	326.5	326.5	323.9
102.5°	400.1	414.5	423.7	426.3	423.7
105°	509.3	516.0	521.1	525.3	525.3
107.5°	617.5	627.7	627.7	629.4	617.5
110°	722.4	735.9	735.9	735.9	729.2



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	835.7	850.2	847.6	840.8	835.7
115°	947.4	960.9	956.7	954.2	947.4
117.5°	1058.2	1076.8	1065.0	1058.2	1051.4
120°	1169.9	1188.5	1169.9	1169.9	1162.2
122.5°	1271.4	1295.1	1283.2	1276.5	1271.4
125°	1377.9	1399.1	1392.3	1384.7	1382.3
127.5°	1482.1	1508.2	1498.9	1488.8	1482.1
130°	1579.3	1609.7	1605.5	1600.5	1591.2
132.5°	1688.5	1712.1	1713.8	1702.0	1695.2
135°	1782.3	1808.6	1813.7	1811.1	1804.3
137.5°	1887.2	1908.4	1912.6	1910.9	1900.7
140°	1979.5	2000.5	2012.4	2012.4	2003.1
142.5°	2074.2	2095.3	2102.1	2104.7	2095.3
145°	2163.9	2180.7	2194.3	2196.8	2187.5
147.5°	2244.2	2265.4	2275.4	2279.8	2270.5
150°	2327.1	2341.4	2350.7	2358.4	2350.7
152.5°	2400.7	2415.1	2426.9	2436.3	2426.9
155°	2474.3	2481.1	2488.7	2500.5	2492.9
157.5°	2537.7	2542.8	2547.0	2563.9	2552.1
160°	2594.4	2599.5	2602.0	2616.4	2606.3
162.5°	2646.9	2646.9	2649.4	2665.5	2653.6
165°	2691.7	2689.1	2689.1	2706.1	2694.2
167.5°	2732.2	2724.7	2724.7	2741.6	2729.7
170°	2762.7	2756.0	2753.4	2770.4	2756.0
172.5°	2783.9	2777.2	2774.6	2791.5	2777.2
175°	2800.8	2794.0	2788.9	2805.9	2791.5
177.5°	2810.1	2803.3	2798.2	2812.6	2798.2
180°	2805.9	2805.9	2805.9	2805.9	2805.9



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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	6.40	7.11	7.52	8.22	9.75	5.96	6.67	7.08	7.78	9.31
	3H	8.05	8.68	9.17	9.79	11.35	7.56	8.19	8.69	9.31	10.86
	4H	8.62	9.22	9.75	10.34	11.90	8.14	8.74	9.27	9.85	11.41
	6H	9.01	9.56	10.15	10.68	12.25	8.52	9.07	9.66	10.19	11.76
	8H	9.11	9.63	10.25	10.77	12.33	8.62	9.14	9.76	10.28	11.84
	12H	9.15	9.65	10.30	10.77	12.36	8.65	9.15	9.80	10.28	11.86
4H	2H	6.84	7.44	7.98	8.56	10.12	6.49	7.09	7.63	8.21	9.76
	3H	8.69	9.19	9.83	10.33	11.90	8.28	8.78	9.43	9.93	11.50
	4H	9.39	9.85	10.54	10.98	12.57	8.97	9.43	10.12	10.57	12.15
	6H	9.89	10.28	11.04	11.44	13.02	9.47	9.86	10.62	11.02	12.60
	8H	10.03	10.40	11.19	11.55	13.14	9.61	9.97	10.76	11.12	12.72
	12H	10.09	10.43	11.26	11.59	13.19	9.66	9.99	10.83	11.15	12.75
8H	4H	9.57	9.94	10.72	11.08	12.68	9.20	9.57	10.35	10.71	12.31
	6H	10.19	10.49	11.36	11.68	13.27	9.81	10.11	10.98	11.30	12.90
	8H	10.40	10.67	11.58	11.83	13.45	10.02	10.28	11.20	11.45	13.06
	12H	10.52	10.75	11.70	11.92	13.57	10.12	10.35	11.30	11.52	13.17
12H	4H	9.55	9.88	10.72	11.04	12.64	9.18	9.52	10.35	10.68	12.28
	6H	10.21	10.48	11.39	11.65	13.26	9.85	10.11	11.03	11.28	12.90
	8H	10.44	10.67	11.63	11.84	13.49	10.07	10.30	11.25	11.47	13.12