

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: P911247

Luminaire Tested: DFN2DIP-PN3F0-070D030US850-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P911247
REPORT IS A COMBINATION OF REPORTS P901040 AND P897955
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN3F0-070D030US850-RLLONL
Description: 3 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

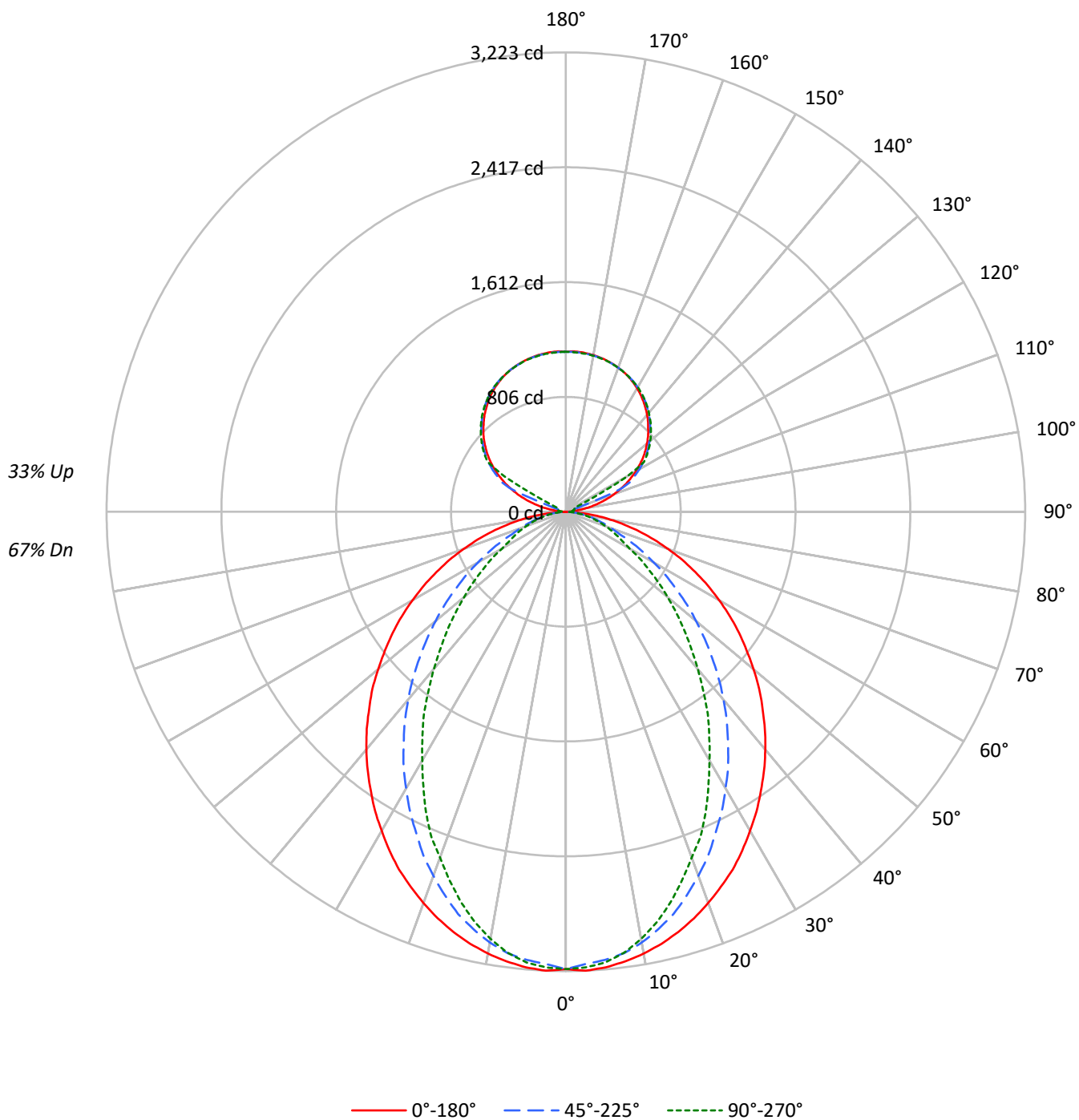
Lumens per Lamp: N/A
Luminaire Lumens: 9892.2 lumens
Efficiency: N/A
Efficacy: 106.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.96' x L: 3.11' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 92.8
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.946
Total Harmonic Distortion (THDi): 0.132
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	111	111	111	111	105	105	105	105	93	93	93	82	82	82	71	71	71
1	102	98	94	91	96	93	89	86	82	80	78	73	71	69	64	63	62
2	94	86	80	75	88	82	76	72	73	69	65	65	62	59	57	55	53
3	86	77	69	64	81	72	66	61	65	60	56	58	54	51	51	48	46
4	79	68	60	54	74	65	58	52	58	53	48	52	48	44	46	43	40
5	73	61	53	47	68	58	51	45	52	47	42	47	42	39	42	38	35
6	67	55	47	41	63	53	45	40	48	42	37	43	38	34	38	35	31
7	62	50	42	37	59	48	41	36	43	37	33	39	34	31	35	31	28
8	58	46	38	33	55	44	37	32	40	34	30	36	31	28	33	29	26
9	54	42	35	30	51	40	33	29	37	31	27	33	29	25	30	26	23
10	51	39	32	27	48	37	31	26	34	28	24	31	26	23	28	24	21

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3751	3751	3751
5°	3754	3688	3713
10°	3715	3613	3591
15°	3662	3491	3402
20°	3592	3324	3172
25°	3520	3138	2950
30°	3425	2946	2668
35°	3331	2741	2421
40°	3236	2528	2137
45°	3125	2293	1880
50°	3011	2056	1630
55°	2891	1803	1389
60°	2752	1539	1142
65°	2592	1271	1026
70°	2398	1020	926
75°	2154	893	839
80°	1802	742	723
85°	1224	482	533

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3125 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	300.7	3.0
10°-20°	825.5	8.3
20°-30°	1158.9	11.7
30°-40°	1263.3	12.8
40°-50°	1161.1	11.7
50°-60°	911.9	9.2
60°-70°	593.5	6.0
70°-80°	305.5	3.1
80°-90°	80.0	0.8
90°-100°	37.0	0.4
100°-110°	138.0	1.4
110°-120°	366.1	3.7
120°-130°	607.1	6.1
130°-140°	644.9	6.5
140°-150°	599.4	6.1
150°-160°	481.9	4.9
160°-170°	310.5	3.1
170°-180°	106.9	1.1
0°-30°	2285.1	23.1
0°-40°	3548.4	35.9
0°-60°	5621.4	56.8
0°-90°	6600.5	66.7
90°-120°	541.1	5.5
90°-150°	2392.5	24.2
90°-180°	3292.0	33.3
0°-180°	9892.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3208	3208	3208	3208	3208	
5°	3208	3194	3156	3182	3174	304
15°	3052	3020	2921	2866	2837	860
25°	2770	2677	2485	2366	2323	1274
35°	2387	2239	1983	1800	1736	1494
45°	1951	1756	1452	1246	1176	1507
55°	1484	1257	944	770	714	1326
65°	1002	766	505	407	398	993
75°	534	331	232	212	209	565
85°	125	64	55	55	55	143
90°	1	10	16	20	22	9
95°	53	26	32	36	35	63
105°	247	271	50	58	62	264
115°	467	481	501	125	67	460
125°	660	671	687	692	695	589
135°	817	830	838	846	844	631
145°	948	947	961	967	963	593
155°	1044	1037	1046	1051	1045	481
165°	1100	1095	1098	1103	1098	311
175°	1125	1120	1121	1127	1119	107
180°	1123	1123	1123	1123	1123	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3208.4	3208.4	3208.4	3208.4	3208.4
2.5°	3222.9	3208.4	3176.4	3205.7	3199.8
5°	3208.4	3193.9	3156.1	3182.3	3173.6
7.5°	3182.3	3165.0	3124.4	3135.7	3121.3
10°	3147.5	3127.2	3069.2	3060.3	3043.0
12.5°	3104.0	3077.8	2999.3	2982.0	2949.9
15°	3051.6	3019.6	2921.0	2865.9	2836.9
17.5°	2990.6	2944.2	2822.2	2758.3	2711.8
20°	2921.0	2862.8	2717.7	2645.3	2581.2
22.5°	2845.6	2778.7	2610.1	2511.6	2468.2
25°	2770.1	2677.0	2485.4	2366.5	2322.8
27.5°	2680.1	2581.2	2369.3	2232.9	2166.0
30°	2584.3	2473.7	2241.4	2093.6	2015.1
32.5°	2491.3	2357.6	2119.7	1945.4	1872.7
35°	2386.8	2238.6	1983.3	1800.4	1736.3
37.5°	2285.2	2125.3	1855.5	1654.8	1582.5
40°	2177.6	2003.6	1721.7	1515.7	1440.1
42.5°	2067.4	1881.6	1588.3	1373.3	1301.0
45°	1951.3	1756.5	1451.9	1245.5	1175.9
47.5°	1840.9	1634.9	1321.3	1114.9	1051.1
50°	1719.0	1512.9	1193.4	992.9	932.2
52.5°	1599.7	1381.9	1071.4	879.8	824.7
55°	1483.6	1257.2	943.5	769.5	714.4
57.5°	1364.7	1132.4	830.5	667.8	621.4
60°	1242.7	1010.4	711.3	563.5	516.9
62.5°	1123.7	891.5	609.6	470.4	447.3
65°	1001.8	766.4	505.3	406.7	397.7
67.5°	885.6	650.3	406.7	357.0	348.4
70°	763.7	537.2	336.7	307.7	296.0
72.5°	647.5	432.5	281.6	258.5	252.6
75°	534.2	330.8	232.2	211.9	209.2
77.5°	421.1	235.0	183.0	171.2	165.5
80°	316.4	168.5	139.3	127.9	127.9
82.5°	220.6	113.3	95.8	89.9	89.9
85°	124.8	63.8	55.1	55.1	55.1
87.5°	46.5	23.1	23.1	20.3	20.3
90°	0.8	9.8	16.2	20.4	21.8
92.5°	20.4	17.1	19.5	21.2	21.8
95°	52.8	26.0	31.6	35.8	34.9
97.5°	95.0	28.5	41.4	43.9	44.7
100°	143.8	32.5	46.4	52.8	54.5
102.5°	197.4	195.8	47.9	56.8	59.3
105°	247.0	271.4	49.6	58.4	61.8
107.5°	304.6	324.9	51.2	60.1	63.4
110°	360.0	376.9	142.2	61.0	64.2

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	412.0	426.5	412.8	62.5	65.0
115°	467.1	481.0	501.3	125.1	66.7
117.5°	515.1	531.3	545.2	429.0	216.1
120°	568.7	580.9	595.5	605.3	495.6
122.5°	614.2	627.3	643.6	648.3	649.2
125°	660.5	671.1	686.6	692.2	694.7
127.5°	702.8	714.1	726.4	734.5	735.3
130°	742.6	755.7	764.5	773.4	772.8
132.5°	783.2	793.8	802.7	810.0	809.2
135°	817.3	830.4	837.6	845.8	844.2
137.5°	853.0	862.8	871.0	879.1	876.7
140°	888.0	894.5	903.4	910.7	906.7
142.5°	917.4	923.0	933.6	940.0	936.0
145°	948.2	947.3	961.2	966.8	962.7
147.5°	974.9	972.5	986.3	990.3	987.1
150°	1001.0	995.3	1008.3	1013.1	1009.1
152.5°	1022.8	1016.4	1028.6	1033.5	1027.8
155°	1044.0	1036.8	1046.5	1051.3	1044.9
157.5°	1061.1	1054.7	1062.0	1067.6	1061.1
160°	1075.7	1070.9	1075.7	1080.6	1074.8
162.5°	1088.7	1083.8	1087.9	1093.6	1086.3
165°	1100.0	1095.2	1097.7	1103.3	1097.7
167.5°	1109.0	1104.1	1106.6	1112.3	1105.0
170°	1116.3	1111.4	1113.1	1118.8	1111.4
172.5°	1121.2	1116.3	1118.0	1123.6	1116.3
175°	1125.2	1119.5	1121.2	1126.9	1118.8
177.5°	1126.9	1121.2	1122.1	1127.7	1120.4
180°	1122.9	1122.9	1122.9	1122.9	1122.9

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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	13.14	14.12	13.94	14.95	15.96	9.10	10.09	9.91	10.91	11.93
	3H	14.82	15.70	15.64	16.54	17.58	10.30	11.18	11.12	12.01	13.06
	4H	15.43	16.26	16.27	17.11	18.16	10.75	11.58	11.59	12.42	13.48
	6H	15.86	16.62	16.70	17.47	18.54	11.07	11.84	11.92	12.69	13.76
	8H	15.98	16.71	16.84	17.58	18.65	11.17	11.90	12.02	12.76	13.83
	12H	16.05	16.74	16.91	17.60	18.70	11.21	11.91	12.07	12.77	13.86
4H	2H	13.17	14.01	14.01	14.85	15.90	9.71	10.55	10.55	11.39	12.44
	3H	15.01	15.70	15.86	16.57	17.64	11.07	11.76	11.92	12.64	13.71
	4H	15.70	16.33	16.57	17.20	18.30	11.62	12.25	12.48	13.12	14.22
	6H	16.22	16.76	17.10	17.66	18.76	12.04	12.58	12.92	13.48	14.58
	8H	16.39	16.90	17.28	17.79	18.90	12.17	12.68	13.05	13.57	14.68
	12H	16.49	16.95	17.40	17.86	18.98	12.24	12.69	13.14	13.60	14.72
8H	4H	15.68	16.19	16.56	17.08	18.19	11.91	12.41	12.79	13.30	14.42
	6H	16.24	16.66	17.15	17.60	18.71	12.42	12.84	13.33	13.77	14.89
	8H	16.46	16.83	17.38	17.75	18.88	12.61	12.98	13.53	13.91	15.04
	12H	16.60	16.93	17.52	17.84	19.02	12.73	13.06	13.65	13.97	15.16
12H	4H	15.64	16.09	16.54	17.00	18.12	11.92	12.37	12.82	13.28	14.40
	6H	16.22	16.59	17.14	17.52	18.65	12.47	12.84	13.39	13.77	14.90
	8H	16.44	16.77	17.37	17.69	18.87	12.68	13.01	13.61	13.93	15.11