

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: P912691

Luminaire Tested: DFN2DIP-TR3F0-080D070US850-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P912691
REPORT IS A COMBINATION OF REPORTS P901857 AND P898751
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR3F0-080D070US850-FLLONL
Description: 3 foot, Triangle Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

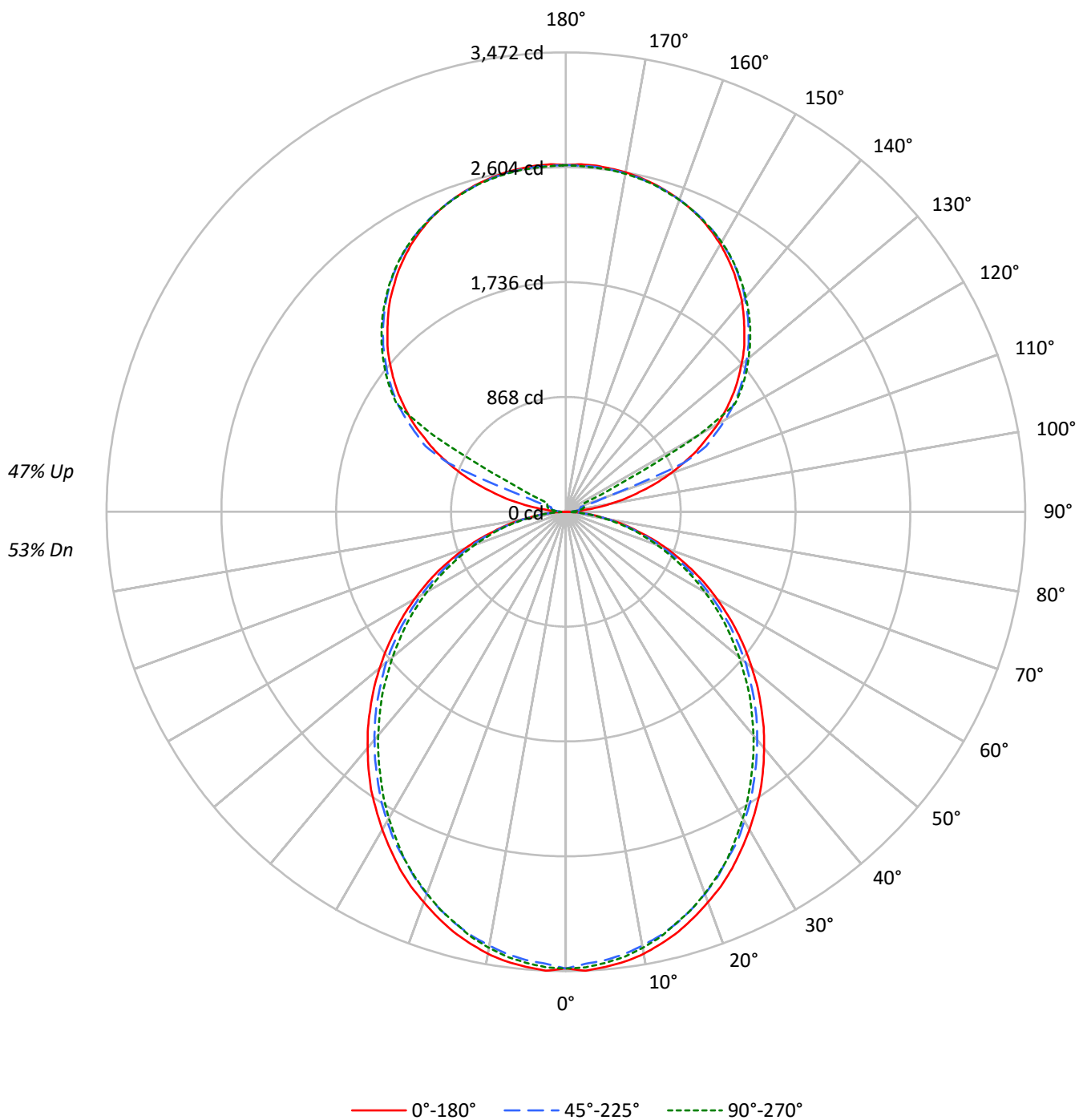
Lumens per Lamp: N/A
Luminaire Lumens: 16468.7 lumens
Efficiency: N/A
Efficacy: 122.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.74' x L: 3.16' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 134.1
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9968
Total Harmonic Distortion (THDi): 0.064
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
RCR																	
0	108	108	108	108	100	100	100	100	85	85	85		72	72	72		59
1	99	94	90	87	91	87	84	81	75	72	70		63	61	60		52
2	90	82	76	71	83	76	71	66	65	61	58		55	52	50		46
3	82	72	65	59	76	67	61	56	58	53	49		49	45	42		41
4	75	64	56	50	69	60	53	47	51	46	42		44	40	36		37
5	69	57	49	43	63	53	46	41	46	40	36		39	35	31		33
6	63	51	43	37	59	48	41	35	41	36	31		35	31	28		30
7	59	46	38	33	54	43	36	31	38	32	28		32	28	24		27
8	54	42	34	29	50	39	32	27	34	29	25		30	25	22		25
9	51	38	31	26	47	36	29	25	31	26	22		27	23	20		23
10	47	35	28	23	44	33	26	22	29	24	20		25	21	18		21

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4302	4302	4302
5°	4306	4238	4268
10°	4269	4178	4207
15°	4204	4105	4114
20°	4117	4006	4019
25°	4030	3888	3909
30°	3922	3778	3770
35°	3819	3649	3624
40°	3693	3518	3484
45°	3567	3387	3341
50°	3429	3249	3176
55°	3284	3090	3023
60°	3121	2901	2848
65°	2942	2705	2641
70°	2715	2467	2418
75°	2400	2180	2208
80°	2020	1814	1815
85°	1428	1194	1172

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3567 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	324.9	2.0
10°-20°	914.2	5.6
20°-30°	1343.5	8.2
30°-40°	1560.4	9.5
40°-50°	1558.4	9.5
50°-60°	1358.9	8.3
60°-70°	1004.5	6.1
70°-80°	568.4	3.5
80°-90°	154.6	0.9
90°-100°	86.4	0.5
100°-110°	322.1	2.0
110°-120°	854.1	5.2
120°-130°	1416.6	8.6
130°-140°	1504.8	9.1
140°-150°	1398.5	8.5
150°-160°	1124.4	6.8
160°-170°	724.5	4.4
170°-180°	249.4	1.5
0°-30°	2582.6	15.7
0°-40°	4143.0	25.2
0°-60°	7060.4	42.9
0°-90°	8787.9	53.4
90°-120°	1262.6	7.7
90°-150°	5582.5	33.9
90°-180°	7681.0	46.6
0°-180°	16468.7	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3452	3452	3452	3452	3452	
5°	3452	3439	3402	3429	3423	328
15°	3286	3267	3223	3237	3220	926
25°	2974	2948	2892	2898	2892	1369
35°	2566	2533	2480	2460	2443	1602
45°	2088	2065	2015	1979	1965	1612
55°	1580	1560	1520	1481	1464	1413
65°	1066	1046	1012	983	966	1054
75°	558	551	534	515	521	595
85°	136	133	130	119	116	152
90°	2	23	38	48	51	15
95°	123	61	74	84	82	146
105°	576	633	116	136	144	616
115°	1090	1122	1170	292	156	1073
125°	1541	1566	1602	1615	1621	1375
135°	1907	1938	1954	1974	1970	1473
145°	2212	2210	2243	2256	2246	1384
155°	2436	2419	2442	2453	2438	1123
165°	2567	2556	2561	2574	2561	725
175°	2626	2612	2616	2629	2610	250
180°	2620	2620	2620	2620	2620	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3452.1	3452.1	3452.1	3452.1	3452.1
2.5°	3472.2	3455.6	3419.0	3452.1	3445.8
5°	3452.1	3439.1	3402.5	3428.9	3422.6
7.5°	3428.9	3409.2	3372.6	3399.3	3392.7
10°	3392.7	3369.4	3329.6	3355.9	3346.2
12.5°	3342.6	3322.9	3283.1	3299.6	3293.0
15°	3286.3	3266.6	3223.2	3236.6	3220.1
17.5°	3216.5	3196.8	3153.4	3170.1	3153.4
20°	3140.1	3120.4	3073.9	3083.8	3070.7
22.5°	3064.1	3034.1	2990.8	2990.8	2984.1
25°	2974.2	2947.8	2891.5	2897.8	2891.5
27.5°	2874.5	2851.3	2808.3	2798.5	2781.9
30°	2775.3	2748.4	2698.9	2689.0	2675.6
32.5°	2668.9	2649.2	2595.9	2575.9	2562.6
35°	2566.0	2533.0	2479.7	2459.7	2443.1
37.5°	2449.8	2419.8	2366.7	2343.4	2326.9
40°	2330.5	2303.6	2250.5	2220.9	2207.5
42.5°	2214.2	2187.4	2134.6	2101.1	2081.5
45°	2088.1	2064.8	2014.8	1978.6	1965.3
47.5°	1965.3	1942.0	1888.7	1852.1	1832.4
50°	1835.6	1819.1	1772.5	1726.0	1709.5
52.5°	1709.5	1686.2	1643.3	1606.7	1583.4
55°	1580.2	1560.1	1520.4	1480.6	1464.0
57.5°	1450.7	1434.2	1390.8	1351.0	1337.6
60°	1321.0	1308.1	1261.5	1224.9	1215.0
62.5°	1194.9	1171.8	1138.6	1105.6	1092.1
65°	1065.7	1045.7	1012.5	982.6	966.0
67.5°	932.9	916.0	886.4	863.2	849.8
70°	810.0	796.6	766.8	743.5	730.4
72.5°	683.9	670.6	654.0	630.8	620.9
75°	557.5	551.2	534.3	514.6	521.2
77.5°	444.8	431.4	424.7	414.9	405.0
80°	332.1	328.6	321.9	312.1	305.3
82.5°	225.8	225.8	222.6	209.2	209.2
85°	136.0	132.7	129.6	119.4	116.2
87.5°	59.9	53.2	46.5	36.6	33.2
90°	1.8	22.7	37.8	47.5	51.1
92.5°	47.5	39.8	45.5	49.4	51.1
95°	123.1	60.6	73.9	83.5	81.5
97.5°	221.7	66.4	96.6	102.5	104.2
100°	335.7	75.9	108.0	123.1	127.0
102.5°	460.6	457.0	111.9	132.6	138.4
105°	576.3	633.2	115.7	136.4	144.1
107.5°	710.9	758.2	119.6	140.3	147.9
110°	840.0	879.5	331.8	142.3	149.7

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	961.3	995.2	963.1	145.8	151.7
115°	1090.0	1122.2	1169.7	292.0	155.6
117.5°	1201.9	1239.8	1272.1	1000.9	504.3
120°	1327.0	1355.4	1389.7	1412.4	1156.5
122.5°	1433.0	1463.4	1501.6	1512.8	1514.8
125°	1541.2	1565.9	1602.0	1615.3	1620.8
127.5°	1639.8	1666.3	1694.9	1713.8	1715.6
130°	1732.7	1763.1	1783.8	1804.8	1803.0
132.5°	1827.5	1852.3	1873.0	1890.1	1888.3
135°	1907.1	1937.5	1954.5	1973.6	1969.8
137.5°	1990.4	2013.3	2032.4	2051.3	2045.7
140°	2071.9	2087.2	2108.0	2125.1	2115.6
142.5°	2140.4	2153.7	2178.2	2193.3	2183.8
145°	2212.5	2210.5	2242.6	2255.9	2246.5
147.5°	2274.8	2269.2	2301.4	2310.8	2303.4
150°	2335.6	2322.4	2352.7	2363.9	2354.5
152.5°	2386.7	2371.6	2400.0	2411.4	2398.2
155°	2436.0	2419.1	2441.8	2453.1	2438.0
157.5°	2475.8	2460.8	2477.8	2491.1	2475.8
160°	2510.1	2498.6	2510.1	2521.3	2508.0
162.5°	2540.3	2529.0	2538.4	2551.7	2534.6
165°	2566.8	2555.6	2561.1	2574.4	2561.1
167.5°	2587.7	2576.2	2582.1	2595.4	2578.3
170°	2604.8	2593.4	2597.2	2610.5	2593.4
172.5°	2616.1	2604.8	2608.7	2621.9	2604.8
175°	2625.6	2612.2	2616.1	2629.3	2610.5
177.5°	2629.3	2616.1	2618.1	2631.4	2614.2
180°	2619.9	2619.9	2619.9	2619.9	2619.9

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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	12.60	13.49	13.52	14.43	15.66	12.17	13.06	13.09	14.00	15.23
	3H	14.25	15.05	15.19	16.00	17.25	13.78	14.58	14.72	15.54	16.78
	4H	14.83	15.59	15.78	16.55	17.80	14.36	15.12	15.32	16.08	17.33
	6H	15.23	15.92	16.19	16.89	18.16	14.76	15.45	15.72	16.42	17.69
	8H	15.33	15.99	16.30	16.97	18.24	14.86	15.52	15.83	16.51	17.77
	12H	15.37	16.01	16.35	16.98	18.27	14.90	15.53	15.88	16.51	17.80
4H	2H	13.06	13.81	14.02	14.77	16.03	12.71	13.47	13.67	14.43	15.69
	3H	14.91	15.55	15.88	16.54	17.81	14.53	15.16	15.49	16.15	17.42
	4H	15.62	16.20	16.60	17.18	18.48	15.22	15.80	16.20	16.78	18.08
	6H	16.13	16.63	17.12	17.64	18.93	15.73	16.22	16.72	17.23	18.52
	8H	16.28	16.74	17.27	17.74	19.05	15.87	16.34	16.86	17.34	18.64
	12H	16.35	16.77	17.36	17.78	19.09	15.93	16.35	16.94	17.37	18.68
8H	4H	15.82	16.28	16.81	17.28	18.59	15.46	15.93	16.45	16.93	18.23
	6H	16.44	16.82	17.46	17.87	19.17	16.08	16.47	17.10	17.51	18.81
	8H	16.65	16.99	17.68	18.02	19.34	16.29	16.63	17.32	17.66	18.98
	12H	16.78	17.08	17.81	18.10	19.47	16.40	16.70	17.43	17.72	19.09
12H	4H	15.80	16.22	16.82	17.24	18.55	15.46	15.88	16.47	16.89	18.20
	6H	16.47	16.81	17.49	17.84	19.16	16.12	16.46	17.15	17.49	18.81
	8H	16.70	17.00	17.73	18.03	19.39	16.35	16.65	17.38	17.67	19.04