

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: P911116

Luminaire Tested: DFN2DIP-PN2F0-060D030US850-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P911116
REPORT IS A COMBINATION OF REPORTS P899479 AND P896349
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN2F0-060D030US850-FLLFLL
Description: 2 foot, Pentagon Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

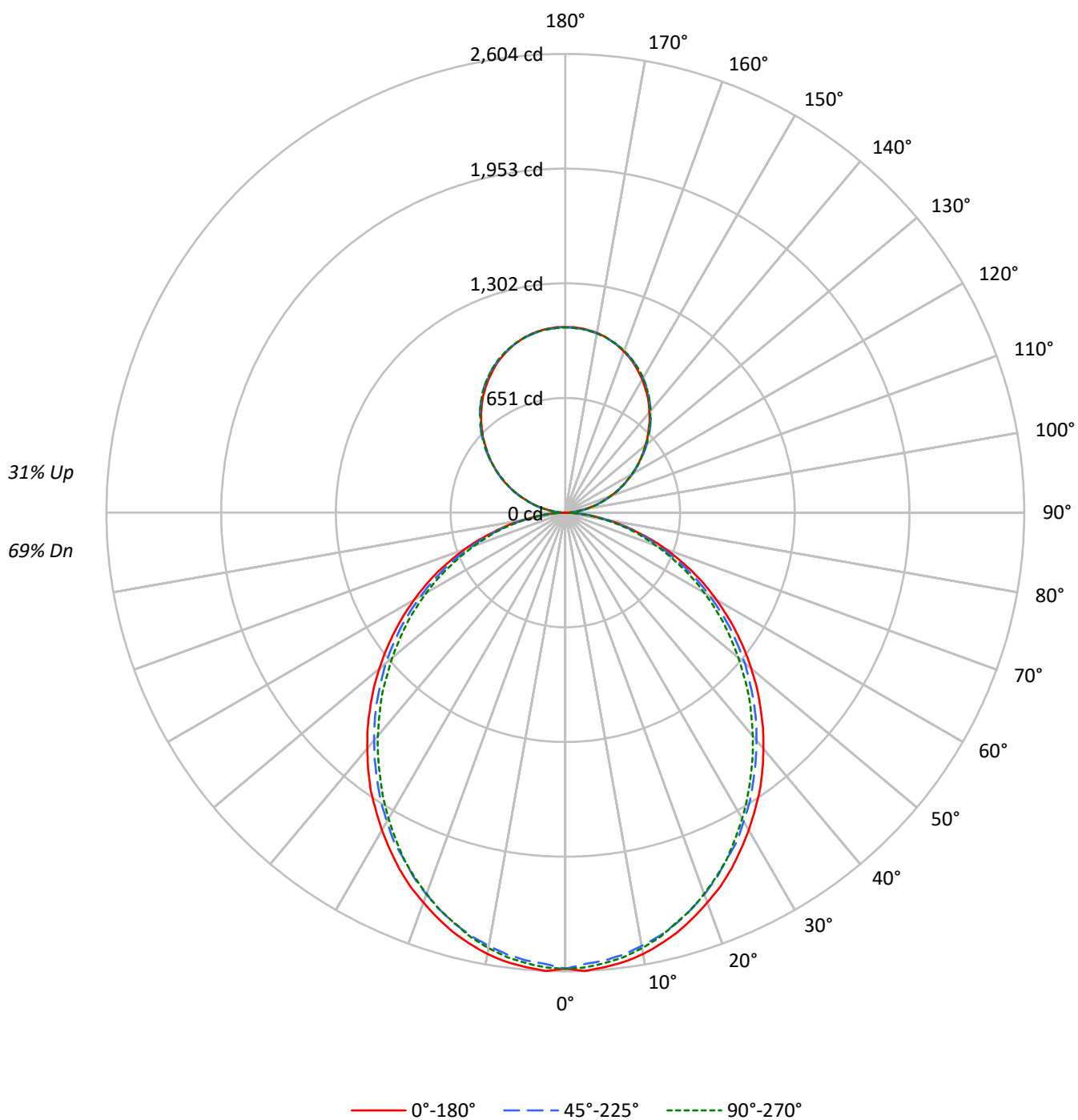
Lumens per Lamp: N/A
Luminaire Lumens: 9531.8 lumens
Efficiency: N/A
Efficacy: 114.2 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.17' x L: 2.29' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 83.5
Input Voltage (V): 120
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

TEST NUMBER: P911116

CATALOG NUMBER: DFN2DIP-PN2F0-060D030US850-FLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P911116

CATALOG NUMBER: DFN2DIP-PN2F0-060D030US850-FLLFL

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	112	112	112	112	106	106	106	106	94	94	94	83	83	83	74	74	74
1	102	98	94	90	96	92	89	86	83	80	77	74	71	70	65	64	62
2	93	85	79	74	88	81	75	70	72	68	64	65	61	58	57	55	52
3	85	75	67	61	80	71	64	59	64	58	54	57	53	49	51	48	45
4	78	67	58	52	73	63	56	50	57	51	46	51	46	42	46	42	39
5	71	59	51	45	67	56	49	43	51	45	40	46	41	37	41	37	34
6	66	53	45	39	62	51	43	38	46	40	35	41	36	32	37	33	30
7	61	48	40	34	58	46	39	33	42	36	31	38	33	29	34	30	26
8	57	44	36	31	54	42	35	30	38	32	28	35	29	26	31	27	24
9	53	40	33	27	50	39	31	26	35	29	25	32	27	23	29	25	21
10	50	37	30	25	47	36	29	24	32	27	22	30	25	21	27	23	20

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	5608	5608	5608
5°	5608	5517	5558
10°	5553	5431	5475
15°	5462	5330	5349
20°	5343	5194	5221
25°	5224	5033	5073
30°	5077	4883	4889
35°	4937	4708	4694
40°	4767	4531	4507
45°	4596	4352	4316
50°	4409	4165	4096
55°	4212	3948	3891
60°	3990	3693	3656
65°	3745	3426	3380
70°	3434	3101	3080
75°	3008	2711	2792
80°	2489	2214	2265
85°	1688	1399	1420

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 4596 cd/sqm

TEST NUMBER: P911116

CATALOG NUMBER: DFN2DIP-PN2F0-060D030US850-FLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	243.7	2.6
10°-20°	685.6	7.2
20°-30°	1007.6	10.6
30°-40°	1170.3	12.3
40°-50°	1168.8	12.3
50°-60°	1019.2	10.7
60°-70°	753.4	7.9
70°-80°	426.3	4.5
80°-90°	115.5	1.2
90°-100°	65.1	0.7
100°-110°	206.9	2.2
110°-120°	354.0	3.7
120°-130°	465.6	4.9
130°-140°	522.6	5.5
140°-150°	512.5	5.4
150°-160°	429.9	4.5
160°-170°	285.1	3.0
170°-180°	99.7	1.0
0°-30°	1937.0	20.3
0°-40°	3107.2	32.6
0°-60°	5295.3	55.6
0°-90°	6590.4	69.1
90°-120°	626.0	6.6
90°-150°	2126.7	22.3
90°-180°	2941.0	30.9
0°-180°	9531.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2589	2589	2589	2589	2589	
5°	2589	2579	2552	2572	2567	246
15°	2465	2450	2417	2428	2415	694
25°	2231	2211	2168	2173	2168	1026
35°	1925	1900	1860	1845	1832	1202
45°	1566	1549	1511	1484	1474	1209
55°	1185	1170	1140	1110	1098	1060
65°	799	784	759	737	724	790
75°	418	413	401	386	391	446
85°	102	100	97	90	87	114
90°	1	11	31	29	30	9
95°	46	55	57	57	55	52
105°	191	194	195	197	197	202
115°	355	360	359	358	355	351
125°	517	525	522	519	518	462
135°	668	678	680	679	677	517
145°	812	818	823	824	820	507
155°	928	930	933	938	935	427
165°	1009	1008	1008	1015	1010	285
175°	1050	1048	1046	1052	1047	100
180°	1052	1052	1052	1052	1052	

TEST NUMBER: P911116

CATALOG NUMBER: DFN2DIP-PN2F0-060D030US850-FLLFLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2589.1	2589.1	2589.1	2589.1	2589.1
2.5°	2604.2	2591.7	2564.2	2589.1	2584.3
5°	2589.1	2579.3	2551.8	2571.7	2566.9
7.5°	2571.7	2556.9	2529.4	2549.5	2544.5
10°	2544.5	2527.1	2497.1	2517.0	2509.6
12.5°	2507.0	2492.1	2462.3	2474.7	2469.7
15°	2464.6	2449.9	2417.4	2427.5	2415.1
17.5°	2412.4	2397.7	2365.2	2377.5	2365.2
20°	2355.1	2340.3	2305.4	2312.8	2303.1
22.5°	2298.1	2275.6	2243.1	2243.1	2238.1
25°	2230.6	2210.9	2168.5	2173.3	2168.5
27.5°	2155.9	2138.5	2106.2	2098.9	2086.5
30°	2081.5	2061.3	2024.1	2016.7	2006.6
32.5°	2001.6	1986.9	1947.0	1931.9	1921.9
35°	1924.6	1899.7	1859.8	1844.7	1832.3
37.5°	1837.4	1814.9	1775.1	1757.5	1745.1
40°	1747.8	1727.7	1687.9	1665.7	1655.6
42.5°	1660.6	1640.5	1601.0	1575.9	1561.0
45°	1566.1	1548.6	1511.1	1484.0	1473.9
47.5°	1473.9	1456.4	1416.6	1389.1	1374.3
50°	1376.7	1364.3	1329.5	1294.5	1282.1
52.5°	1282.1	1264.7	1232.4	1205.0	1187.6
55°	1185.2	1170.1	1140.3	1110.4	1098.0
57.5°	1088.0	1075.6	1043.1	1013.3	1003.2
60°	990.8	981.0	946.2	918.7	911.3
62.5°	896.2	878.8	853.9	829.1	819.1
65°	799.3	784.3	759.4	736.9	724.5
67.5°	699.7	687.0	664.8	647.4	637.3
70°	607.5	597.5	575.0	557.6	547.8
72.5°	512.9	502.9	490.5	473.1	465.7
75°	418.1	413.4	400.7	385.9	390.9
77.5°	333.6	323.6	318.5	311.2	303.8
80°	249.1	246.4	241.4	234.0	229.0
82.5°	169.3	169.3	166.9	156.9	156.9
85°	101.9	99.6	97.1	89.5	87.2
87.5°	44.9	39.9	34.8	27.5	24.8
90°	1.0	11.4	31.1	29.2	30.2
92.5°	19.6	26.6	27.6	28.5	28.5
95°	46.4	55.2	56.8	56.8	55.2
97.5°	77.1	85.3	88.8	88.8	88.8
100°	112.6	119.9	122.4	122.4	121.5
102.5°	150.0	155.5	158.9	159.9	158.9
105°	191.0	193.5	195.4	197.0	197.0
107.5°	231.6	235.3	235.3	236.0	231.6
110°	270.9	276.0	276.0	276.0	273.5

TEST NUMBER: P911116

CATALOG NUMBER: DFN2DIP-PN2F0-060D030US850-FLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	313.4	318.8	317.8	315.3	313.4
115°	355.3	360.3	358.8	357.9	355.3
117.5°	396.8	403.8	399.4	396.8	394.2
120°	438.7	445.7	438.7	438.7	435.8
122.5°	476.8	485.6	481.2	478.6	476.8
125°	516.8	524.7	522.1	519.2	518.3
127.5°	555.7	565.6	562.2	558.3	555.7
130°	592.2	603.6	602.1	600.2	596.6
132.5°	633.1	642.0	642.7	638.2	635.7
135°	668.4	678.2	680.1	679.2	676.6
137.5°	707.7	715.6	717.2	716.6	712.8
140°	742.3	750.2	754.7	754.7	751.1
142.5°	777.9	785.7	788.3	789.3	785.7
145°	811.5	817.8	822.9	823.8	820.3
147.5°	841.6	849.5	853.3	854.9	851.4
150°	872.7	878.1	881.5	884.4	881.5
152.5°	900.3	905.6	910.0	913.6	910.0
155°	927.9	930.3	933.2	937.7	934.9
157.5°	951.6	953.5	955.2	961.5	957.1
160°	972.9	974.8	975.8	981.1	977.4
162.5°	992.6	992.6	993.6	999.5	995.1
165°	1009.4	1008.4	1008.4	1014.7	1010.3
167.5°	1024.6	1021.7	1021.7	1028.0	1023.6
170°	1036.0	1033.5	1032.6	1038.9	1033.5
172.5°	1043.9	1041.5	1040.5	1046.8	1041.5
175°	1050.3	1047.8	1045.9	1052.2	1046.8
177.5°	1053.8	1051.2	1049.3	1054.8	1049.3
180°	1052.2	1052.2	1052.2	1052.2	1052.2

TEST NUMBER: P911116

CATALOG NUMBER: DFN2DIP-PN2F0-060D030US850-FLLFLL

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	14.75	15.81	15.52	16.61	17.58	14.31	15.38	15.08	16.17	17.14
	3H	16.40	17.36	17.19	18.17	19.16	15.92	16.88	16.71	17.68	18.68
	4H	16.99	17.89	17.79	18.70	19.71	16.50	17.41	17.31	18.22	19.23
	6H	17.38	18.21	18.20	19.04	20.06	16.89	17.73	17.71	18.55	19.57
	8H	17.48	18.28	18.31	19.12	20.14	17.00	17.79	17.82	18.63	19.66
	12H	17.53	18.29	18.36	19.12	20.17	17.04	17.80	17.87	18.63	19.68
4H	2H	15.22	16.13	16.03	16.94	17.95	14.87	15.78	15.68	16.59	17.60
	3H	17.08	17.84	17.90	18.69	19.71	16.68	17.44	17.50	18.29	19.31
	4H	17.79	18.48	18.62	19.32	20.38	17.38	18.06	18.21	18.91	19.96
	6H	18.30	18.89	19.15	19.76	20.82	17.88	18.47	18.73	19.34	20.40
	8H	18.44	19.00	19.30	19.86	20.93	18.02	18.57	18.87	19.44	20.51
	12H	18.52	19.02	19.39	19.90	20.98	18.08	18.58	18.96	19.47	20.54
8H	4H	17.99	18.55	18.85	19.41	20.48	17.62	18.18	18.48	19.04	20.11
	6H	18.61	19.07	19.49	19.97	21.05	18.23	18.69	19.12	19.60	20.67
	8H	18.82	19.22	19.71	20.13	21.21	18.44	18.84	19.33	19.75	20.83
	12H	18.94	19.30	19.84	20.20	21.34	18.55	18.91	19.44	19.80	20.94
12H	4H	17.98	18.49	18.86	19.37	20.45	17.62	18.12	18.50	19.01	20.09
	6H	18.63	19.04	19.53	19.94	21.03	18.27	18.68	19.16	19.58	20.67
	8H	18.87	19.23	19.77	20.12	21.26	18.50	18.86	19.40	19.75	20.90