

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: P911750

Luminaire Tested: DFN2DIP-SQ2F0-070D030US850-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P911750
REPORT IS A COMBINATION OF REPORTS P899780 AND P896659
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ2F0-070D030US850-RLFL
Description: 2 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

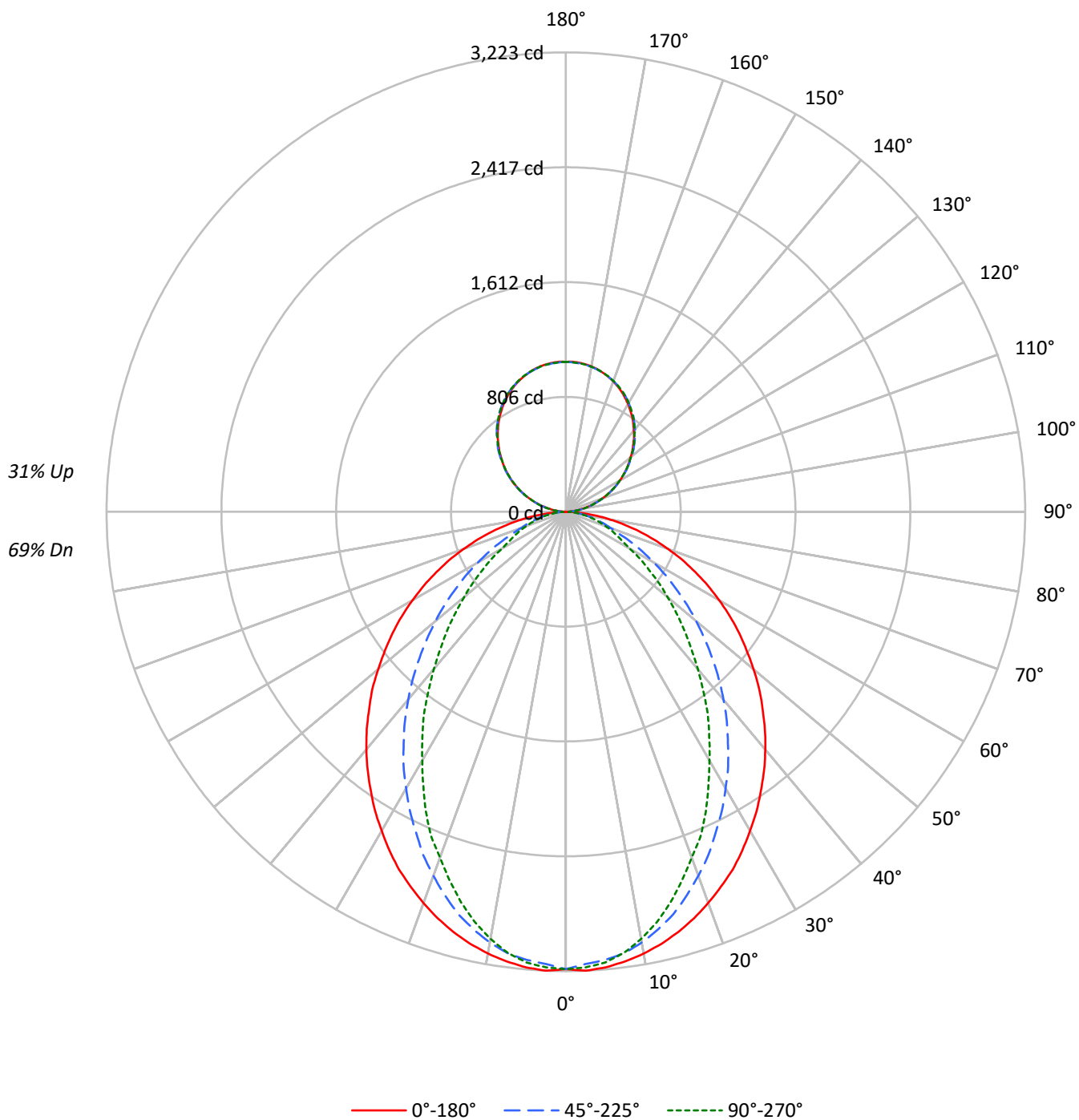
Lumens per Lamp: N/A
Luminaire Lumens: 9542.9 lumens
Efficiency: N/A
Efficacy: 105.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.21' x L: 2.21' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 90.5
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9977
Total Harmonic Distortion (THDi): 0.049
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P911750

CATALOG NUMBER: DFN2DIP-SQ2F0-070D030US850-RLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P911750

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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	112	112	112	112	106	106	106	106	94	94	94	83	83	83	74	74	74
1	103	99	95	91	97	93	90	87	84	81	79	75	73	71	66	65	64
2	94	87	81	76	89	82	77	73	74	70	66	66	63	60	59	57	55
3	86	77	70	64	81	73	67	62	66	61	57	59	55	52	53	50	47
4	79	69	61	55	75	65	58	53	59	53	49	53	49	45	48	44	41
5	73	62	54	48	69	59	51	46	53	47	43	48	43	40	43	40	36
6	68	56	48	42	64	53	46	40	48	42	38	44	39	35	40	36	32
7	63	51	43	37	59	48	41	36	44	38	34	40	35	31	36	32	29
8	59	46	39	33	55	44	37	32	41	35	30	37	32	28	34	29	26
9	55	43	35	30	52	41	34	29	37	31	27	34	29	26	31	27	24
10	51	39	32	27	49	38	31	26	35	29	25	32	27	23	29	25	22

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	7055	7055	7055
5°	7054	6928	6977
10°	6972	6777	6741
15°	6864	6538	6381
20°	6725	6215	5942
25°	6582	5856	5519
30°	6395	5489	4986
35°	6210	5096	4518
40°	6022	4690	3983
45°	5806	4244	3499
50°	5580	3793	3026
55°	5343	3314	2573
60°	5068	2816	2108
65°	4752	2312	1886
70°	4368	1841	1693
75°	3883	1593	1521
80°	3189	1295	1289
85°	2076	803	917

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 5806 cd/sqm

TEST NUMBER: P911750

CATALOG NUMBER: DFN2DIP-SQ2F0-070D030US850-RLFL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	300.7	3.2
10°-20°	825.5	8.7
20°-30°	1158.9	12.1
30°-40°	1263.3	13.2
40°-50°	1161.1	12.2
50°-60°	911.9	9.6
60°-70°	593.5	6.2
70°-80°	305.5	3.2
80°-90°	81.0	0.8
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°	2285.1	23.9
0°-40°	3548.4	37.2
0°-60°	5621.4	58.9
0°-90°	6601.5	69.2
90°-120°	626.0	6.6
90°-150°	2126.7	22.3
90°-180°	2941.0	30.8
0°-180°	9542.9	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	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: P911750

CATALOG NUMBER: DFN2DIP-SQ2F0-070D030US850-RLFL

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°	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: P911750

CATALOG NUMBER: DFN2DIP-SQ2F0-070D030US850-RLLFLL

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

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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	15.45	16.46	16.23	17.26	18.23	11.41	12.42	12.19	13.22	14.19
	3H	17.12	18.03	17.91	18.84	19.84	12.59	13.50	13.39	14.31	15.31
	4H	17.72	18.58	18.53	19.40	20.41	13.04	13.89	13.85	14.71	15.72
	6H	18.14	18.93	18.96	19.75	20.78	13.35	14.14	14.18	14.97	15.99
	8H	18.26	19.01	19.09	19.85	20.88	13.44	14.19	14.27	15.03	16.06
	12H	18.32	19.04	19.16	19.87	20.92	13.48	14.20	14.32	15.03	16.08
4H	2H	15.48	16.34	16.30	17.16	18.17	12.02	12.87	12.83	13.69	14.70
	3H	17.31	18.02	18.13	18.87	19.90	13.36	14.07	14.19	14.92	15.95
	4H	17.99	18.64	18.83	19.48	20.54	13.90	14.55	14.74	15.39	16.45
	6H	18.50	19.05	19.35	19.93	20.99	14.31	14.87	15.17	15.74	16.80
	8H	18.66	19.19	19.52	20.05	21.13	14.43	14.95	15.29	15.82	16.89
	12H	18.76	19.23	19.64	20.11	21.19	14.50	14.96	15.37	15.85	16.93
8H	4H	17.97	18.49	18.83	19.36	20.43	14.18	14.70	15.04	15.57	16.64
	6H	18.52	18.95	19.41	19.86	20.93	14.68	15.11	15.57	16.02	17.10
	8H	18.72	19.10	19.62	20.01	21.10	14.86	15.24	15.76	16.15	17.24
	12H	18.86	19.19	19.76	20.09	21.23	14.97	15.31	15.87	16.20	17.35
12H	4H	17.93	18.39	18.81	19.28	20.36	14.19	14.66	15.07	15.55	16.63
	6H	18.49	18.87	19.39	19.78	20.87	14.73	15.11	15.63	16.01	17.10
	8H	18.71	19.04	19.61	19.94	21.08	14.93	15.27	15.83	16.16	17.30