

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: P911667

Luminaire Tested: DFN2DIP-SQ2F0-030D060US850-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P911667
REPORT IS A COMBINATION OF REPORTS P901328 AND P898215
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ2F0-030D060US850-RLLONL
Description: 2 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

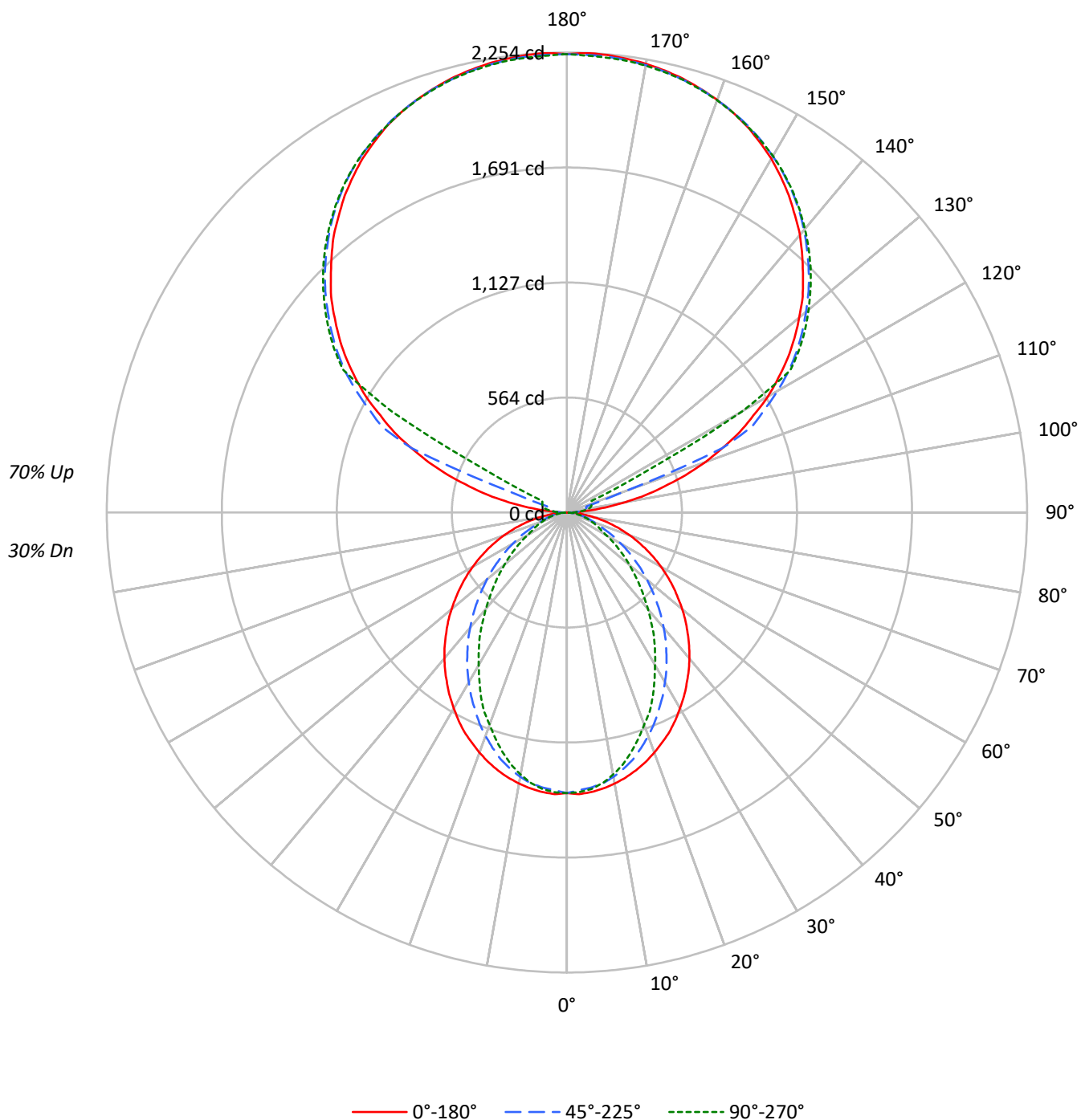
Lumens per Lamp: N/A
Luminaire Lumens: 9415.4 lumens
Efficiency: N/A
Efficacy: 136.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.21' x L: 2.21' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 68.9
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9963
Total Harmonic Distortion (THDi): 0.065
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P911667

CATALOG NUMBER: DFN2DIP-SQ2F0-030D060US850-RLLONL

Luminous Intensity Polar Plot



TEST NUMBER: P911667

CATALOG NUMBER: DFN2DIP-SQ2F0-030D060US850-RLLONL

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	102	102	102	102	92	92	92	92	72	72	72	54	54	54	38	38	38
1	94	90	86	83	84	81	77	75	64	62	60	48	47	46	34	33	32
2	85	78	73	68	76	71	66	62	56	53	50	43	40	39	30	29	28
3	78	69	62	57	70	62	57	52	50	46	42	38	35	33	27	25	24
4	71	61	54	48	64	55	49	44	44	40	36	34	31	28	24	22	21
5	66	55	47	41	59	49	43	38	40	35	31	30	27	25	22	20	18
6	60	49	41	36	54	44	38	33	36	31	27	28	24	22	20	18	16
7	56	44	37	31	50	40	34	29	32	28	24	25	22	19	18	16	15
8	52	40	33	28	46	36	30	25	29	25	21	23	20	17	17	15	13
9	48	37	29	25	43	33	27	23	27	22	19	21	18	15	16	13	12
10	45	33	27	22	40	30	24	20	25	20	17	20	16	14	14	12	11

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3023	3023	3023
5°	3023	2969	2990
10°	2988	2904	2889
15°	2942	2802	2735
20°	2882	2663	2547
25°	2821	2510	2365
30°	2741	2352	2137
35°	2662	2184	1936
40°	2581	2010	1707
45°	2488	1819	1499
50°	2391	1626	1297
55°	2290	1420	1103
60°	2172	1207	904
65°	2036	991	809
70°	1872	789	726
75°	1664	683	651
80°	1367	555	552
85°	890	344	393

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2488 cd/sqm

TEST NUMBER: P911667

CATALOG NUMBER: DFN2DIP-SQ2F0-030D060US850-RLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	128.9	1.4
10°-20°	353.8	3.8
20°-30°	496.7	5.3
30°-40°	541.4	5.8
40°-50°	497.6	5.3
50°-60°	390.8	4.2
60°-70°	254.4	2.7
70°-80°	130.9	1.4
80°-90°	37.4	0.4
90°-100°	74.1	0.8
100°-110°	276.0	2.9
110°-120°	732.1	7.8
120°-130°	1214.2	12.9
130°-140°	1289.8	13.7
140°-150°	1198.7	12.7
150°-160°	963.8	10.2
160°-170°	621.0	6.6
170°-180°	213.7	2.3
0°-30°	979.3	10.4
0°-40°	1520.7	16.2
0°-60°	2409.2	25.6
0°-90°	2831.9	30.1
90°-120°	1082.2	11.5
90°-150°	4785.0	50.8
90°-180°	6583.0	69.9
0°-180°	9415.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1375	1375	1375	1375	1375	
5°	1375	1369	1353	1364	1360	130
15°	1308	1294	1252	1228	1216	369
25°	1187	1147	1065	1014	995	546
35°	1023	959	850	772	744	640
45°	836	753	622	534	504	646
55°	636	539	404	330	306	568
65°	429	328	216	174	170	426
75°	229	142	100	91	90	242
85°	54	27	24	24	24	61
90°	2	20	32	41	44	9
95°	106	52	63	72	70	125
105°	494	543	99	117	124	528
115°	934	962	1003	250	133	920
125°	1321	1342	1373	1384	1389	1178
135°	1635	1661	1675	1692	1688	1263
145°	1896	1895	1922	1934	1926	1186
155°	2088	2074	2093	2103	2090	962
165°	2200	2190	2195	2207	2195	622
175°	2250	2239	2242	2254	2238	214
180°	2246	2246	2246	2246	2246	

TEST NUMBER: P911667

CATALOG NUMBER: DFN2DIP-SQ2F0-030D060US850-RLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1375.0	1375.0	1375.0	1375.0	1375.0
2.5°	1381.3	1375.0	1361.3	1373.8	1371.4
5°	1375.0	1368.8	1352.6	1363.8	1360.1
7.5°	1363.8	1356.4	1339.0	1343.9	1337.7
10°	1348.9	1340.2	1315.4	1311.5	1304.2
12.5°	1330.2	1319.0	1285.4	1278.0	1264.3
15°	1307.8	1294.1	1251.8	1228.2	1215.8
17.5°	1281.7	1261.8	1209.5	1182.2	1162.2
20°	1251.8	1226.9	1164.7	1133.7	1106.2
22.5°	1219.6	1190.8	1118.6	1076.4	1057.8
25°	1187.2	1147.3	1065.2	1014.2	995.4
27.5°	1148.6	1106.2	1015.4	957.0	928.2
30°	1107.6	1060.2	960.6	897.3	863.6
32.5°	1067.6	1010.4	908.5	833.7	802.6
35°	1022.9	959.4	849.9	771.5	744.1
37.5°	979.4	910.8	795.2	709.2	678.3
40°	933.3	858.7	737.9	649.5	617.3
42.5°	886.0	806.5	680.7	588.5	557.5
45°	836.3	752.8	622.3	533.8	503.9
47.5°	788.9	700.7	566.3	477.8	450.5
50°	736.7	648.3	511.5	425.5	399.5
52.5°	685.6	592.3	459.2	377.1	353.4
55°	635.8	538.8	404.3	329.8	306.2
57.5°	584.9	485.3	356.0	286.2	266.3
60°	532.5	433.1	304.9	241.4	221.6
62.5°	481.6	382.1	261.3	201.6	191.7
65°	429.3	328.5	216.5	174.2	170.5
67.5°	379.6	278.7	174.2	153.0	149.3
70°	327.3	230.2	144.3	131.9	126.9
72.5°	277.5	185.3	120.7	110.8	108.2
75°	228.9	141.8	99.6	90.8	89.6
77.5°	180.4	100.7	78.4	73.4	70.9
80°	135.6	72.2	59.7	54.8	54.8
82.5°	94.5	48.6	41.0	38.6	38.6
85°	53.5	27.3	23.6	23.6	23.6
87.5°	20.0	9.9	9.9	8.8	8.8
90°	1.6	19.5	32.4	40.7	43.8
92.5°	40.7	34.2	38.9	42.3	43.8
95°	105.6	51.9	63.3	71.6	69.9
97.5°	190.1	56.9	82.7	87.8	89.4
100°	287.7	65.0	92.6	105.6	108.8
102.5°	394.8	391.7	95.9	113.7	118.7
105°	493.9	542.7	99.1	116.9	123.5
107.5°	609.4	649.9	102.5	120.2	126.8
110°	720.0	753.9	284.5	122.0	128.3

TEST NUMBER: P911667

CATALOG NUMBER: DFN2DIP-SQ2F0-030D060US850-RLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	823.9	853.0	825.4	125.0	130.1
115°	934.3	961.9	1002.6	250.3	133.3
117.5°	1030.2	1062.6	1090.4	857.9	432.2
120°	1137.5	1161.8	1191.2	1210.6	991.2
122.5°	1228.3	1254.4	1287.0	1296.6	1298.4
125°	1321.0	1342.2	1373.1	1384.5	1389.2
127.5°	1405.5	1428.3	1452.8	1469.0	1470.5
130°	1485.2	1511.2	1529.0	1546.9	1545.4
132.5°	1566.5	1587.6	1605.4	1620.0	1618.5
135°	1634.8	1660.8	1675.3	1691.7	1688.3
137.5°	1706.1	1725.6	1742.0	1758.2	1753.4
140°	1776.0	1789.1	1806.9	1821.5	1813.4
142.5°	1834.6	1846.0	1867.1	1880.0	1871.9
145°	1896.4	1894.6	1922.2	1933.7	1925.6
147.5°	1949.8	1945.0	1972.6	1980.7	1974.4
150°	2002.0	1990.5	2016.6	2026.3	2018.2
152.5°	2045.8	2032.8	2057.1	2067.0	2055.5
155°	2088.0	2073.5	2093.0	2102.7	2089.7
157.5°	2122.2	2109.2	2123.8	2135.3	2122.2
160°	2151.5	2141.6	2151.5	2161.1	2149.8
162.5°	2177.3	2167.7	2175.7	2187.2	2172.5
165°	2200.1	2190.5	2195.3	2206.7	2195.3
167.5°	2218.0	2208.2	2213.2	2224.7	2209.9
170°	2232.7	2222.9	2226.2	2237.5	2222.9
172.5°	2242.4	2232.7	2236.0	2247.4	2232.7
175°	2250.5	2239.1	2242.4	2253.7	2237.5
177.5°	2253.7	2242.4	2244.1	2255.5	2240.8
180°	2245.6	2245.6	2245.6	2245.6	2245.6

TEST NUMBER: P911667

CATALOG NUMBER: DFN2DIP-SQ2F0-030D060US850-RLONL

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	8.65	9.35	9.77	10.45	11.98	4.61	5.31	5.73	6.41	7.94
	3H	10.30	10.92	11.43	12.03	13.58	5.77	6.39	6.90	7.51	9.06
	4H	10.89	11.48	12.02	12.59	14.15	6.21	6.79	7.34	7.91	9.46
	6H	11.29	11.83	12.43	12.95	14.51	6.50	7.04	7.65	8.16	9.73
	8H	11.40	11.92	12.55	13.05	14.61	6.58	7.09	7.73	8.23	9.79
	12H	11.45	11.94	12.60	13.07	14.65	6.61	7.10	7.76	8.23	9.81
4H	2H	8.65	9.24	9.79	10.35	11.91	5.18	5.77	6.32	6.88	8.44
	3H	10.44	10.93	11.59	12.07	13.64	6.50	6.99	7.65	8.13	9.69
	4H	11.12	11.56	12.27	12.70	14.28	7.03	7.47	8.17	8.60	10.19
	6H	11.60	11.99	12.76	13.14	14.72	7.42	7.80	8.57	8.96	10.53
	8H	11.77	12.12	12.92	13.27	14.86	7.53	7.89	8.69	9.04	10.63
	12H	11.84	12.17	13.01	13.32	14.92	7.58	7.91	8.75	9.06	10.66
8H	4H	11.07	11.43	12.22	12.57	14.17	7.28	7.64	8.44	8.79	10.38
	6H	11.61	11.90	12.78	13.09	14.68	7.77	8.07	8.95	9.26	10.84
	8H	11.81	12.07	12.99	13.23	14.84	7.95	8.21	9.13	9.37	10.98
	12H	11.93	12.16	13.11	13.32	14.96	8.05	8.27	9.23	9.44	11.08
12H	4H	11.01	11.34	12.18	12.49	14.09	7.28	7.60	8.45	8.76	10.36
	6H	11.58	11.84	12.76	13.01	14.61	7.82	8.07	9.00	9.24	10.85
	8H	11.78	12.01	12.96	13.17	14.81	8.00	8.23	9.19	9.39	11.04