

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: P920135

Luminaire Tested: DFN2DIP-SQ3F0-080D060US935-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P920135
REPORT IS A COMBINATION OF REPORTS P901426 AND P898289
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ3F0-080D060US935-RLLONL
Description: 3 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

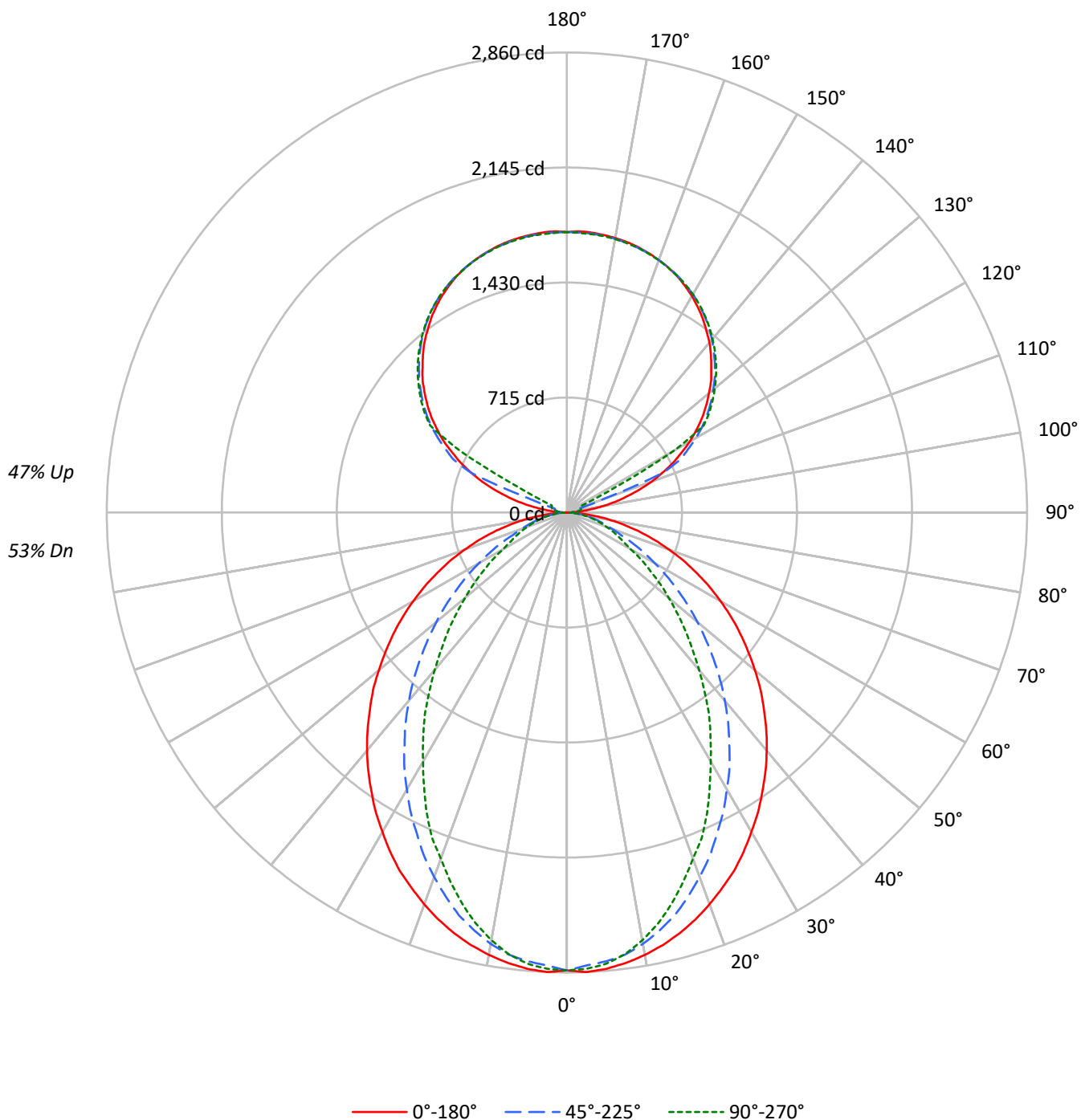
Lumens per Lamp: N/A
Luminaire Lumens: 10969.1 lumens
Efficiency: N/A
Efficacy: 90.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.06' x L: 3.06' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 121.3
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9952
Total Harmonic Distortion (THDi): 0.069
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	108	108	108	108	100	100	100	100	85	85	85	72	72	72	59	59	59
1	99	95	91	88	92	88	85	82	76	73	71	64	62	61	53	52	51
2	91	83	78	73	84	78	73	68	67	63	60	57	54	52	47	45	44
3	83	74	67	61	77	69	63	58	59	55	51	51	47	44	42	40	38
4	76	66	58	52	70	61	55	49	53	48	44	45	42	38	38	35	33
5	70	59	51	45	65	55	48	43	48	42	38	41	37	34	35	32	29
6	65	53	45	39	60	50	43	37	43	38	34	37	33	30	32	28	26
7	60	48	40	35	56	45	38	33	39	34	30	34	30	26	29	26	23
8	56	44	36	31	52	41	34	29	36	31	27	31	27	24	27	24	21
9	52	40	33	28	48	38	31	26	33	28	24	29	25	22	25	22	19
10	49	37	30	25	45	35	28	24	31	25	22	27	23	20	23	20	17

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3262	3262	3262
5°	3265	3208	3230
10°	3231	3143	3123
15°	3184	3037	2960
20°	3123	2892	2760
25°	3061	2729	2567
30°	2978	2563	2322
35°	2896	2384	2107
40°	2813	2200	1860
45°	2717	1995	1637
50°	2617	1789	1419
55°	2513	1569	1210
60°	2392	1339	995
65°	2252	1106	894
70°	2083	888	808
75°	1871	778	732
80°	1563	646	631
85°	1060	421	468

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2717 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	266.8	2.4
10°-20°	732.4	6.7
20°-30°	1028.3	9.4
30°-40°	1120.9	10.2
40°-50°	1030.3	9.4
50°-60°	809.1	7.4
60°-70°	526.6	4.8
70°-80°	271.1	2.5
80°-90°	72.3	0.7
90°-100°	57.5	0.5
100°-110°	214.3	2.0
110°-120°	568.4	5.2
120°-130°	942.7	8.6
130°-140°	1001.4	9.1
140°-150°	930.7	8.5
150°-160°	748.2	6.8
160°-170°	482.1	4.4
170°-180°	165.9	1.5
0°-30°	2027.6	18.5
0°-40°	3148.5	28.7
0°-60°	4987.8	45.5
0°-90°	5857.9	53.4
90°-120°	840.2	7.7
90°-150°	3714.9	33.9
90°-180°	5111.0	46.6
0°-180°	10969.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2847	2847	2847	2847	2847	
5°	2847	2834	2800	2824	2816	270
15°	2708	2679	2592	2543	2517	763
25°	2458	2375	2205	2100	2061	1130
35°	2118	1986	1760	1597	1540	1326
45°	1731	1559	1288	1105	1043	1337
55°	1316	1116	837	683	634	1176
65°	889	680	448	361	353	881
75°	474	294	206	188	186	501
85°	111	57	49	49	49	127
90°	1	15	25	32	34	10
95°	82	40	49	56	54	97
105°	384	421	77	91	96	410
115°	725	747	778	194	104	714
125°	1026	1042	1066	1075	1079	915
135°	1269	1289	1301	1313	1311	980
145°	1472	1471	1492	1501	1495	921
155°	1621	1610	1625	1632	1622	747
165°	1708	1701	1704	1713	1704	483
175°	1747	1738	1741	1750	1737	166
180°	1743	1743	1743	1743	1743	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2846.8	2846.8	2846.8	2846.8	2846.8
2.5°	2859.6	2846.8	2818.4	2844.3	2839.1
5°	2846.8	2834.0	2800.3	2823.6	2815.9
7.5°	2823.6	2808.2	2772.2	2782.3	2769.4
10°	2792.6	2774.7	2723.3	2715.3	2700.0
12.5°	2754.2	2730.9	2661.2	2645.8	2617.4
15°	2707.7	2679.3	2591.8	2542.9	2517.1
17.5°	2653.5	2612.3	2504.0	2447.5	2406.1
20°	2591.8	2540.1	2411.4	2347.2	2290.3
22.5°	2524.8	2465.5	2316.0	2228.5	2189.9
25°	2457.8	2375.3	2205.3	2099.8	2061.0
27.5°	2378.0	2290.3	2102.2	1981.2	1921.8
30°	2293.0	2194.9	1988.8	1857.6	1787.9
32.5°	2210.4	2091.9	1880.8	1726.1	1661.6
35°	2117.8	1986.3	1759.7	1597.4	1540.5
37.5°	2027.6	1885.8	1646.3	1468.3	1404.1
40°	1932.3	1777.8	1527.7	1344.8	1277.8
42.5°	1834.4	1669.6	1409.3	1218.6	1154.3
45°	1731.3	1558.6	1288.2	1105.1	1043.4
47.5°	1633.5	1450.6	1172.3	989.2	932.6
50°	1525.2	1342.4	1058.9	881.0	827.1
52.5°	1419.4	1226.1	950.6	780.7	731.8
55°	1316.4	1115.5	837.2	682.8	633.9
57.5°	1210.9	1004.8	736.9	592.6	551.3
60°	1102.6	896.6	631.1	499.9	458.7
62.5°	997.1	791.0	541.0	417.4	396.9
65°	888.9	680.0	448.2	360.8	352.8
67.5°	785.8	577.0	360.8	316.8	309.2
70°	677.6	476.7	298.8	273.0	262.7
72.5°	574.5	383.7	249.9	229.4	224.1
75°	474.0	293.6	206.1	188.0	185.6
77.5°	373.7	208.5	162.4	152.0	146.8
80°	280.7	149.6	123.6	113.4	113.4
82.5°	195.7	100.6	85.0	79.8	79.8
85°	110.7	56.6	48.9	48.9	48.9
87.5°	41.2	20.5	20.5	18.1	18.1
90°	1.2	15.2	25.1	31.6	34.0
92.5°	31.6	26.5	30.2	32.8	34.0
95°	82.0	40.3	49.2	55.6	54.2
97.5°	147.6	44.2	64.2	68.2	69.4
100°	223.3	50.5	71.9	82.0	84.5
102.5°	306.5	304.1	74.5	88.3	92.1
105°	383.5	421.4	77.0	90.7	95.9
107.5°	473.1	504.5	79.6	93.3	98.4
110°	559.0	585.3	220.8	94.7	99.6

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	639.6	662.3	640.8	97.0	101.0
115°	725.4	746.8	778.4	194.3	103.5
117.5°	799.8	825.0	846.5	666.1	335.5
120°	883.1	902.0	924.8	939.9	769.6
122.5°	953.6	973.9	999.2	1006.7	1008.1
125°	1025.6	1042.1	1066.0	1074.9	1078.6
127.5°	1091.2	1108.9	1127.9	1140.5	1141.7
130°	1153.0	1173.3	1187.1	1201.0	1199.8
132.5°	1216.2	1232.6	1246.4	1257.7	1256.5
135°	1269.2	1289.4	1300.6	1313.4	1310.8
137.5°	1324.6	1339.7	1352.5	1365.0	1361.3
140°	1378.8	1389.0	1402.8	1414.2	1407.9
142.5°	1424.3	1433.2	1449.6	1459.6	1453.3
145°	1472.3	1470.9	1492.4	1501.2	1495.0
147.5°	1513.8	1510.0	1531.5	1537.7	1532.8
150°	1554.3	1545.4	1565.6	1573.1	1566.8
152.5°	1588.3	1578.2	1597.1	1604.7	1595.9
155°	1621.1	1609.8	1625.0	1632.5	1622.4
157.5°	1647.6	1637.5	1648.9	1657.8	1647.6
160°	1670.3	1662.7	1670.3	1677.8	1669.0
162.5°	1690.4	1682.9	1689.2	1698.1	1686.7
165°	1708.1	1700.6	1704.3	1713.2	1704.3
167.5°	1722.0	1714.4	1718.3	1727.2	1715.7
170°	1733.4	1725.8	1728.4	1737.1	1725.8
172.5°	1740.9	1733.4	1735.9	1744.8	1733.4
175°	1747.2	1738.4	1740.9	1749.7	1737.1
177.5°	1749.7	1740.9	1742.2	1751.1	1739.7
180°	1743.4	1743.4	1743.4	1743.4	1743.4

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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	11.53	12.39	12.47	13.34	14.56	7.49	8.35	8.43	9.30	10.52
	3H	13.21	13.98	14.15	14.93	16.18	8.68	9.45	9.62	10.40	11.65
	4H	13.82	14.54	14.78	15.50	16.76	9.13	9.85	10.09	10.81	12.07
	6H	14.24	14.90	15.21	15.87	17.14	9.44	10.11	10.41	11.08	12.35
	8H	14.36	15.00	15.34	15.98	17.25	9.53	10.17	10.51	11.15	12.42
	12H	14.42	15.02	15.40	16.00	17.29	9.57	10.18	10.55	11.15	12.44
4H	2H	11.55	12.28	12.52	13.24	14.50	8.09	8.82	9.06	9.78	11.03
	3H	13.38	13.98	14.36	14.97	16.24	9.44	10.04	10.41	11.03	12.30
	4H	14.07	14.62	15.05	15.60	16.90	9.98	10.53	10.96	11.51	12.81
	6H	14.58	15.05	15.58	16.06	17.36	10.39	10.87	11.39	11.87	13.17
	8H	14.75	15.20	15.75	16.20	17.50	10.52	10.96	11.52	11.96	13.27
	12H	14.85	15.25	15.86	16.26	17.58	10.58	10.98	11.60	12.00	13.31
8H	4H	14.04	14.48	15.04	15.48	16.79	10.26	10.70	11.26	11.70	13.01
	6H	14.60	14.96	15.62	16.01	17.31	10.77	11.13	11.79	12.18	13.48
	8H	14.81	15.13	15.84	16.16	17.49	10.96	11.28	11.99	12.31	13.63
	12H	14.95	15.23	15.98	16.26	17.62	11.07	11.35	12.10	12.38	13.75
12H	4H	13.99	14.39	15.01	15.41	16.72	10.26	10.66	11.28	11.68	12.99
	6H	14.57	14.90	15.60	15.93	17.25	10.82	11.14	11.85	12.17	13.49
	8H	14.79	15.08	15.83	16.10	17.47	11.02	11.31	12.06	12.33	13.70