

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: P925402

Luminaire Tested: DFN2DIP-SQ2F0-070D060US950-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P925402
REPORT IS A COMBINATION OF REPORTS P899816 AND P896659
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ2F0-070D060US950-RLLFLL
Description: 2 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

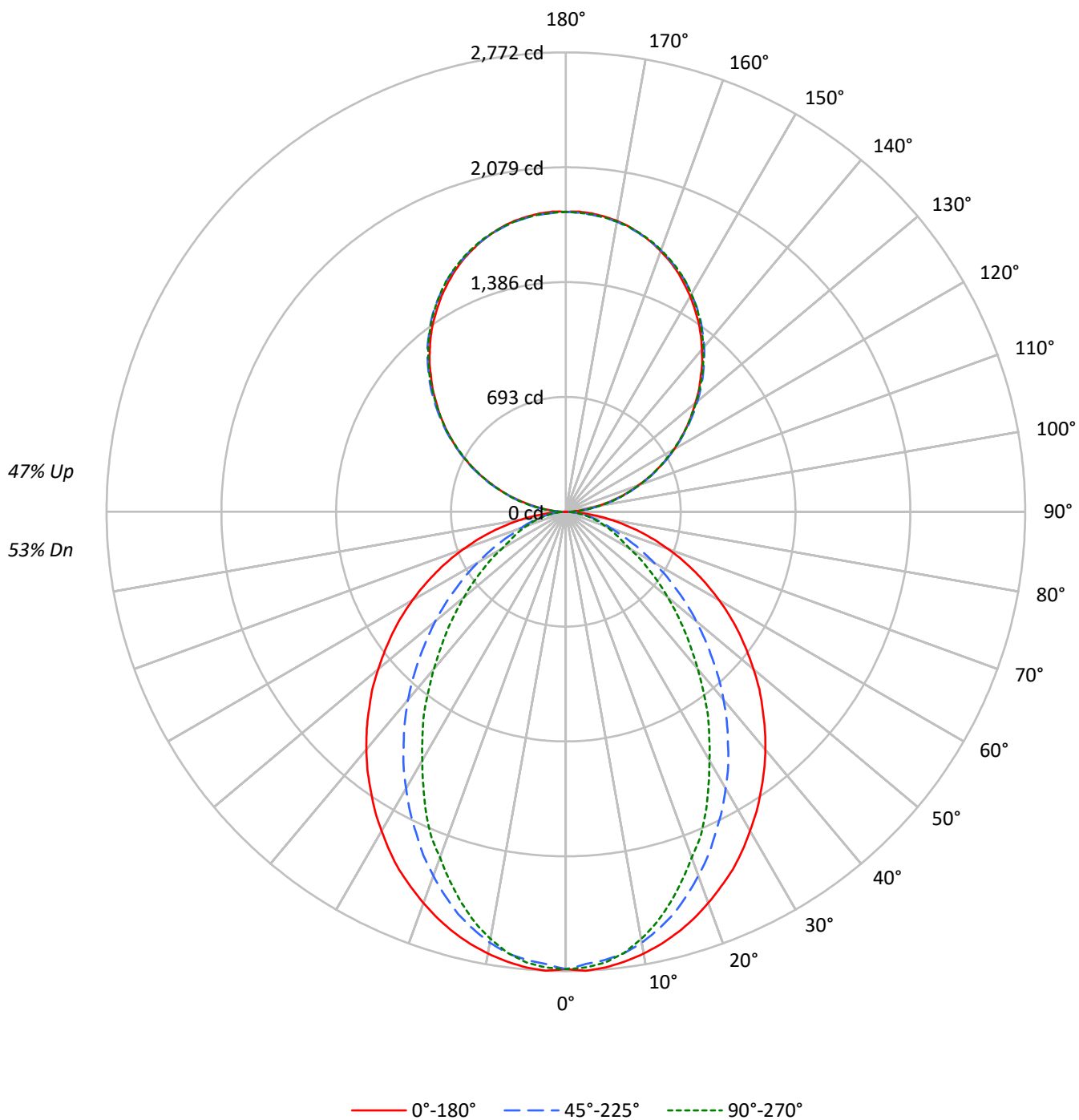
Lumens per Lamp: N/A
Luminaire Lumens: 10742.0 lumens
Efficiency: N/A
Efficacy: 94.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.21' x L: 2.21' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 113.6
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

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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	71	71	71	59	59	59
1	99	95	91	88	92	88	85	82	75	73	71	64	62	60	53	52	51
2	91	83	77	72	84	78	72	68	67	63	59	56	54	51	47	45	43
3	83	74	67	61	77	69	62	57	59	54	51	50	47	44	42	40	38
4	76	66	58	52	70	61	54	49	53	48	44	45	41	38	38	35	33
5	70	59	51	45	65	55	48	43	48	42	38	41	37	33	34	31	29
6	65	53	45	39	60	50	42	37	43	38	33	37	33	30	31	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	30	27	31	27	24	27	23	21
9	52	40	33	28	48	38	31	26	33	28	24	29	24	21	25	21	19
10	49	37	30	25	45	35	28	24	31	25	22	27	22	19	23	20	17

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	6069	6069	6069
5°	6068	5959	6002
10°	5998	5829	5799
15°	5904	5624	5489
20°	5785	5346	5112
25°	5662	5037	4748
30°	5501	4721	4289
35°	5342	4384	3886
40°	5181	4035	3426
45°	4994	3651	3009
50°	4800	3263	2603
55°	4596	2851	2213
60°	4360	2423	1814
65°	4087	1989	1623
70°	3757	1584	1456
75°	3340	1371	1308
80°	2744	1113	1109
85°	1785	691	789

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 4994 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	258.7	2.4
10°-20°	710.1	6.6
20°-30°	997.0	9.3
30°-40°	1086.8	10.1
40°-50°	998.8	9.3
50°-60°	784.4	7.3
60°-70°	510.6	4.8
70°-80°	262.8	2.4
80°-90°	72.2	0.7
90°-100°	112.0	1.0
100°-110°	355.9	3.3
110°-120°	609.1	5.7
120°-130°	801.1	7.5
130°-140°	899.2	8.4
140°-150°	881.7	8.2
150°-160°	739.6	6.9
160°-170°	490.5	4.6
170°-180°	171.4	1.6
0°-30°	1965.7	18.3
0°-40°	3052.5	28.4
0°-60°	4835.8	45.0
0°-90°	5681.4	52.9
90°-120°	1077.0	10.0
90°-150°	3659.0	34.1
90°-180°	5061.0	47.1
0°-180°	10742.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2760	2760	2760	2760	2760	
5°	2760	2748	2715	2738	2730	262
15°	2625	2598	2513	2465	2440	740
25°	2383	2303	2138	2036	1998	1096
35°	2053	1926	1706	1549	1494	1285
45°	1679	1511	1249	1071	1012	1296
55°	1276	1082	812	662	615	1140
65°	862	659	435	350	342	854
75°	460	285	200	182	180	486
85°	107	55	47	47	47	123
90°	2	20	54	50	52	11
95°	80	95	98	98	95	89
105°	329	333	336	339	339	347
115°	611	620	617	616	611	605
125°	889	903	898	893	892	794
135°	1150	1167	1170	1168	1164	889
145°	1396	1407	1416	1417	1411	872
155°	1596	1601	1606	1613	1608	735
165°	1737	1735	1735	1746	1738	490
175°	1807	1803	1799	1810	1801	172
180°	1810	1810	1810	1810	1810	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2760.0	2760.0	2760.0	2760.0	2760.0
2.5°	2772.4	2760.0	2732.4	2757.6	2752.6
5°	2760.0	2747.5	2715.0	2737.5	2730.1
7.5°	2737.5	2722.6	2687.7	2697.4	2685.0
10°	2707.5	2690.1	2640.2	2632.6	2617.7
12.5°	2670.2	2647.6	2580.1	2565.2	2537.6
15°	2625.1	2597.6	2512.7	2465.3	2440.4
17.5°	2572.7	2532.7	2427.7	2372.8	2332.8
20°	2512.7	2462.7	2337.9	2275.6	2220.4
22.5°	2447.9	2390.3	2245.3	2160.5	2123.2
25°	2382.9	2302.9	2138.0	2035.7	1998.2
27.5°	2305.5	2220.4	2038.1	1920.8	1863.3
30°	2223.1	2128.0	1928.1	1801.0	1733.4
32.5°	2143.1	2028.1	1823.5	1673.5	1610.9
35°	2053.2	1925.7	1706.1	1548.7	1493.6
37.5°	1965.8	1828.2	1596.1	1423.6	1361.4
40°	1873.3	1723.6	1481.1	1303.8	1238.9
42.5°	1778.4	1618.7	1366.3	1181.3	1119.1
45°	1678.6	1511.0	1249.0	1071.4	1011.5
47.5°	1583.6	1406.4	1136.6	959.1	904.2
50°	1478.7	1301.4	1026.6	854.1	801.9
52.5°	1376.1	1188.8	921.7	756.8	709.4
55°	1276.3	1081.5	811.7	662.0	614.6
57.5°	1174.0	974.1	714.5	574.5	534.5
60°	1069.1	869.2	611.9	484.7	444.7
62.5°	966.7	766.9	524.4	404.7	384.7
65°	861.7	659.3	434.6	349.8	342.1
67.5°	761.9	559.4	349.8	307.1	299.7
70°	656.9	462.1	289.6	264.7	254.6
72.5°	557.0	372.1	242.2	222.4	217.3
75°	459.5	284.6	199.8	182.3	179.9
77.5°	362.2	202.2	157.4	147.3	142.3
80°	272.2	144.9	119.8	110.0	110.0
82.5°	189.8	97.5	82.4	77.4	77.4
85°	107.3	54.9	47.4	47.4	47.4
87.5°	40.0	19.8	19.8	17.5	17.5
90°	1.6	19.7	53.5	50.2	51.8
92.5°	33.9	45.9	47.5	49.1	49.1
95°	79.7	94.9	97.7	97.7	94.9
97.5°	132.6	146.8	152.8	152.8	152.8
100°	193.8	206.3	210.6	210.6	209.0
102.5°	258.2	267.4	273.4	275.0	273.4
105°	328.6	332.9	336.2	339.0	339.0
107.5°	398.4	405.0	405.0	406.0	398.4
110°	466.1	474.8	474.8	474.8	470.4



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	539.2	548.5	546.8	542.4	539.2
115°	611.2	620.0	617.2	615.6	611.2
117.5°	682.8	694.8	687.1	682.8	678.4
120°	754.8	766.8	754.8	754.8	749.8
122.5°	820.2	835.5	827.9	823.6	820.2
125°	889.0	902.7	898.3	893.4	891.8
127.5°	956.2	973.1	967.1	960.6	956.2
130°	1019.0	1038.6	1035.9	1032.6	1026.6
132.5°	1089.4	1104.6	1105.7	1098.1	1093.7
135°	1150.0	1166.8	1170.1	1168.5	1164.1
137.5°	1217.6	1231.2	1234.0	1232.9	1226.4
140°	1277.1	1290.8	1298.4	1298.4	1292.4
142.5°	1338.2	1351.8	1356.2	1357.8	1351.8
145°	1396.1	1407.0	1415.7	1417.4	1411.3
147.5°	1447.9	1461.5	1468.1	1470.8	1464.8
150°	1501.4	1510.7	1516.7	1521.5	1516.7
152.5°	1548.8	1558.2	1565.8	1571.8	1565.8
155°	1596.3	1600.7	1605.6	1613.3	1608.3
157.5°	1637.3	1640.6	1643.3	1654.2	1646.6
160°	1673.9	1677.1	1678.8	1688.0	1681.5
162.5°	1707.7	1707.7	1709.3	1719.7	1712.0
165°	1736.6	1734.9	1734.9	1745.9	1738.3
167.5°	1762.8	1757.9	1757.9	1768.8	1761.2
170°	1782.5	1778.1	1776.4	1787.3	1778.1
172.5°	1796.1	1791.7	1790.1	1801.0	1791.7
175°	1807.0	1802.7	1799.3	1810.3	1801.0
177.5°	1813.0	1808.7	1805.3	1814.6	1805.3
180°	1810.3	1810.3	1810.3	1810.3	1810.3

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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	13.56	14.42	14.50	15.37	16.60	9.52	10.38	10.46	11.33	12.56
	3H	15.22	15.99	16.17	16.95	18.20	10.69	11.46	11.64	12.42	13.67
	4H	15.82	16.54	16.78	17.50	18.77	11.13	11.85	12.10	12.82	14.08
	6H	16.23	16.89	17.20	17.86	19.14	11.44	12.10	12.41	13.07	14.35
	8H	16.34	16.98	17.33	17.96	19.24	11.52	12.15	12.50	13.14	14.41
	12H	16.40	17.00	17.39	17.98	19.28	11.56	12.16	12.54	13.14	14.44
4H	2H	13.58	14.30	14.55	15.26	16.53	10.11	10.83	11.08	11.80	13.06
	3H	15.39	15.99	16.37	16.98	18.26	11.44	12.04	12.42	13.04	14.31
	4H	16.06	16.61	17.05	17.60	18.90	11.97	12.52	12.96	13.51	14.81
	6H	16.56	17.03	17.56	18.04	19.35	12.38	12.85	13.38	13.86	15.16
	8H	16.73	17.17	17.73	18.17	19.49	12.49	12.93	13.50	13.94	15.25
	12H	16.81	17.21	17.83	18.23	19.55	12.55	12.95	13.57	13.97	15.29
8H	4H	16.03	16.47	17.03	17.47	18.79	12.24	12.68	13.25	13.69	15.00
	6H	16.58	16.94	17.60	17.98	19.30	12.74	13.10	13.77	14.15	15.46
	8H	16.78	17.10	17.81	18.13	19.46	12.92	13.24	13.95	14.27	15.60
	12H	16.90	17.19	17.94	18.21	19.59	13.02	13.30	14.06	14.33	15.71
12H	4H	15.98	16.38	17.00	17.40	18.72	12.25	12.64	13.27	13.66	14.98
	6H	16.55	16.87	17.58	17.90	19.23	12.78	13.10	13.82	14.14	15.47
	8H	16.76	17.04	17.79	18.06	19.44	12.98	13.26	14.02	14.29	15.66