

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: P914611

Luminaire Tested: DFN2DIP-SQ3F0-060D070US927-RLLONL

Issue Date: 11/21/2024

**Test Information**

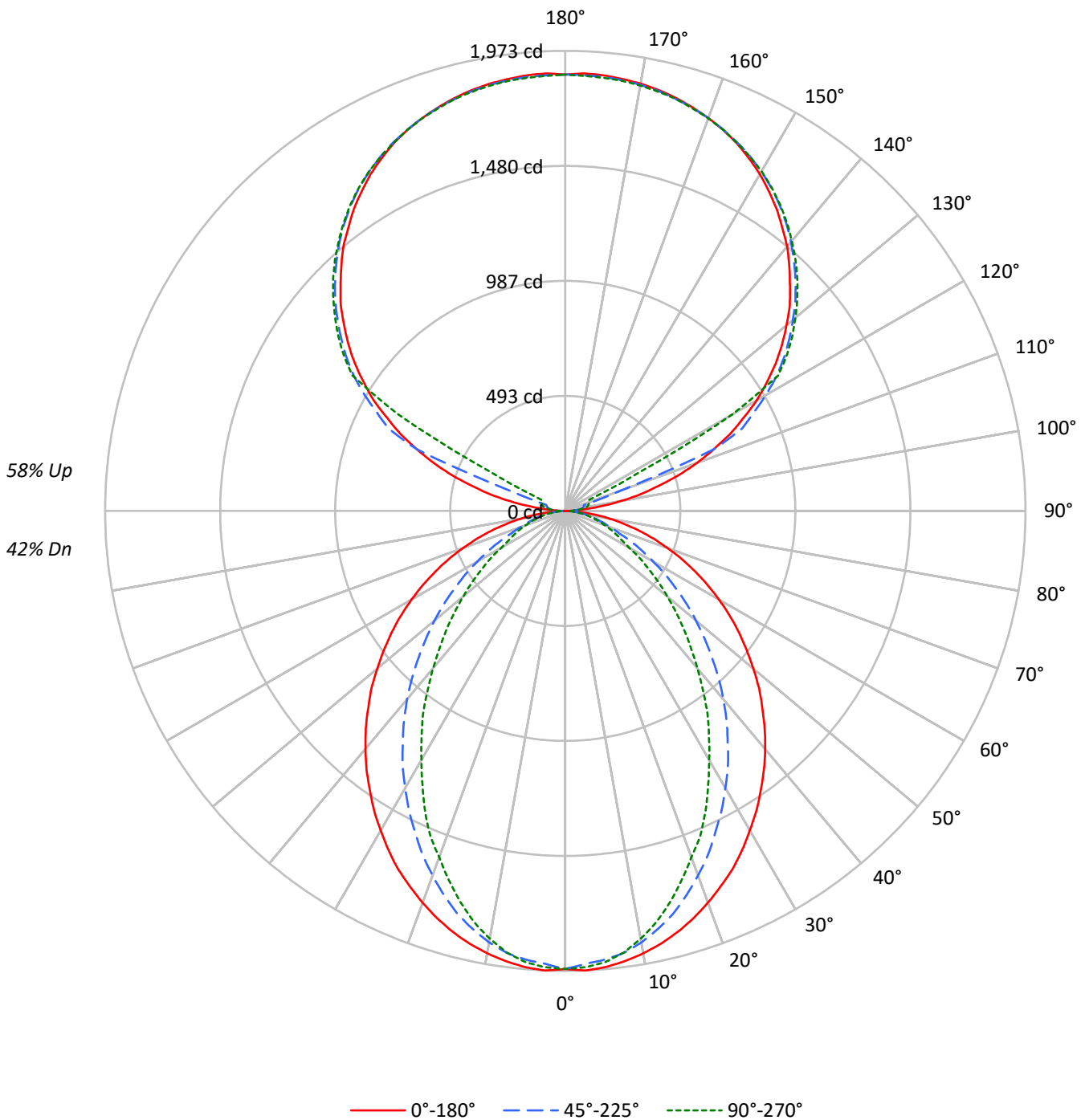
Test Method: LM-79-2019  
Report Number: P914611  
REPORT IS A COMBINATION OF REPORTS P901440 AND P898289  
Test Lab: INNOVATION CENTER  
Issue Date: 11/21/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: DFN2DIP-SQ3F0-060D070US927-RLLONL  
Description: 3 foot, 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: 9529.9 lumens  
Efficiency: N/A  
Efficacy: 90.0 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): 105.9  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: 0.9971  
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			0	
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR																					
0	105	105	105	105	96	96	96	96	79	79	79	64	64	64	49	49	49	49	49	49	42
1	96	92	89	85	88	85	81	79	70	68	66	56	55	54	44	43	42	42	42	42	37
2	88	81	75	70	80	74	69	65	62	58	55	50	48	45	39	38	36	36	36	36	31
3	81	72	65	59	74	66	60	55	55	50	47	45	42	39	35	33	31	31	31	31	27
4	74	64	56	50	67	59	52	47	49	44	40	40	36	34	32	29	27	27	27	27	24
5	68	57	49	43	62	52	46	40	44	39	35	36	32	29	29	26	24	24	24	24	21
6	63	51	43	38	57	47	40	35	40	34	31	33	29	26	26	23	21	21	21	21	18
7	58	46	39	33	53	43	36	31	36	31	27	30	26	23	24	21	19	19	19	19	16
8	54	42	35	29	49	39	32	28	33	28	24	27	24	21	22	19	17	17	17	17	15
9	50	38	31	26	46	36	29	25	30	25	22	25	21	19	21	18	16	16	16	16	13
10	47	35	28	24	43	33	26	22	28	23	20	23	20	17	19	16	14	14	14	14	12

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	2251	2251	2251
5°	2253	2214	2229
10°	2229	2169	2155
15°	2197	2096	2042
20°	2155	1995	1904
25°	2112	1883	1771
30°	2055	1769	1602
35°	1998	1645	1454
40°	1941	1518	1284
45°	1875	1377	1130
50°	1806	1235	979
55°	1734	1083	835
60°	1650	924	686
65°	1554	763	617
70°	1437	613	557
75°	1291	537	506
80°	1079	446	436
85°	732	290	323

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 1875 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	184.1	1.9
10°-20°	505.4	5.3
20°-30°	709.6	7.4
30°-40°	773.5	8.1
40°-50°	710.9	7.5
50°-60°	558.3	5.9
60°-70°	363.4	3.8
70°-80°	187.1	2.0
80°-90°	51.0	0.5
90°-100°	61.7	0.6
100°-110°	230.0	2.4
110°-120°	610.1	6.4
120°-130°	1011.9	10.6
130°-140°	1074.9	11.3
140°-150°	999.0	10.5
150°-160°	803.2	8.4
160°-170°	517.5	5.4
170°-180°	178.1	1.9
0°-30°	1399.1	14.7
0°-40°	2172.6	22.8
0°-60°	3441.9	36.1
0°-90°	4043.4	42.4
90°-120°	901.9	9.5
90°-150°	3987.7	41.8
90°-180°	5487.0	57.6
0°-180°	9529.9	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1964	1964	1964	1964	1964	
5°	1964	1956	1932	1948	1943	186
15°	1868	1849	1788	1755	1737	527
25°	1696	1639	1522	1449	1422	780
35°	1461	1371	1214	1102	1063	915
45°	1195	1076	889	763	720	923
55°	908	770	578	471	437	812
65°	613	469	309	249	244	608
75°	327	203	142	130	128	346
85°	76	39	34	34	34	88
90°	1	16	27	34	36	9
95°	88	43	53	60	58	104
105°	412	452	83	97	103	440
115°	779	802	836	209	111	767
125°	1101	1119	1144	1154	1158	982
135°	1362	1384	1396	1410	1407	1052
145°	1580	1579	1602	1612	1605	988
155°	1740	1728	1744	1752	1742	802
165°	1834	1826	1830	1839	1830	518
175°	1876	1866	1869	1878	1865	178
180°	1871	1871	1871	1871	1871	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1964.5	1964.5	1964.5	1964.5	1964.5
2.5°	1973.3	1964.5	1944.8	1962.7	1959.1
5°	1964.5	1955.6	1932.4	1948.4	1943.1
7.5°	1948.4	1937.8	1913.0	1919.9	1911.1
10°	1927.1	1914.6	1879.2	1873.7	1863.1
12.5°	1900.5	1884.4	1836.4	1825.8	1806.2
15°	1868.4	1848.8	1788.4	1754.7	1736.9
17.5°	1831.1	1802.6	1727.9	1688.9	1660.4
20°	1788.4	1752.8	1664.0	1619.6	1580.4
22.5°	1742.2	1701.3	1598.1	1537.8	1511.2
25°	1696.1	1639.1	1521.8	1449.0	1422.2
27.5°	1641.0	1580.4	1450.6	1367.1	1326.2
30°	1582.3	1514.6	1372.4	1281.8	1233.7
32.5°	1525.3	1443.5	1297.9	1191.1	1146.6
35°	1461.4	1370.7	1214.3	1102.2	1063.0
37.5°	1399.2	1301.2	1136.1	1013.3	968.9
40°	1333.3	1226.8	1054.2	928.0	881.8
42.5°	1265.8	1152.1	972.5	840.8	796.5
45°	1194.7	1075.5	889.0	762.6	719.9
47.5°	1127.2	1001.0	809.0	682.6	643.6
50°	1052.5	926.3	730.7	607.9	570.8
52.5°	979.5	846.1	656.0	538.7	504.9
55°	908.4	769.8	577.7	471.2	437.4
57.5°	835.6	693.3	508.5	408.9	380.4
60°	760.9	618.7	435.5	345.0	316.5
62.5°	688.1	545.9	373.3	288.0	273.9
65°	613.4	469.3	309.3	249.0	243.5
67.5°	542.2	398.2	249.0	218.6	213.3
70°	467.5	328.9	206.1	188.5	181.3
72.5°	396.5	264.8	172.4	158.3	154.6
75°	327.1	202.6	142.2	129.8	128.1
77.5°	257.9	143.9	112.0	104.9	101.3
80°	193.7	103.1	85.2	78.3	78.3
82.5°	135.1	69.4	58.6	55.1	55.1
85°	76.4	39.1	33.7	33.7	33.7
87.5°	28.5	14.2	14.2	12.4	12.4
90°	1.3	16.2	27.0	33.9	36.5
92.5°	33.9	28.4	32.5	35.3	36.5
95°	87.9	43.3	52.8	59.7	58.2
97.5°	158.4	47.5	69.0	73.2	74.5
100°	239.8	54.2	77.2	87.9	90.7
102.5°	329.0	326.5	79.9	94.7	98.9
105°	411.7	452.3	82.6	97.4	102.9
107.5°	507.8	541.6	85.4	100.2	105.7
110°	600.0	628.3	237.0	101.6	106.9



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	686.7	710.9	687.9	104.2	108.4
115°	778.6	801.6	835.5	208.6	111.1
117.5°	858.6	885.6	908.7	714.9	360.2
120°	947.9	968.2	992.7	1008.9	826.1
122.5°	1023.7	1045.4	1072.6	1080.6	1082.0
125°	1100.9	1118.6	1144.3	1153.8	1157.8
127.5°	1171.3	1190.3	1210.7	1224.2	1225.5
130°	1237.7	1259.4	1274.2	1289.2	1287.9
132.5°	1305.4	1323.1	1337.9	1350.1	1348.8
135°	1362.3	1384.0	1396.1	1409.8	1407.1
137.5°	1421.8	1438.1	1451.8	1465.3	1461.3
140°	1480.0	1491.0	1505.8	1518.0	1511.2
142.5°	1528.9	1538.4	1555.9	1566.7	1560.0
145°	1580.4	1579.0	1601.9	1611.5	1604.7
147.5°	1624.9	1621.0	1643.9	1650.7	1645.4
150°	1668.3	1658.9	1680.6	1688.6	1681.9
152.5°	1704.9	1694.1	1714.4	1722.5	1713.1
155°	1740.1	1728.0	1744.2	1752.3	1741.5
157.5°	1768.5	1757.8	1770.0	1779.5	1768.5
160°	1793.0	1784.8	1793.0	1801.0	1791.5
162.5°	1814.6	1806.5	1813.2	1822.7	1810.5
165°	1833.5	1825.5	1829.5	1839.0	1829.5
167.5°	1848.5	1840.2	1844.4	1853.9	1841.7
170°	1860.7	1852.5	1855.2	1864.7	1852.5
172.5°	1868.8	1860.7	1863.4	1872.9	1860.7
175°	1875.5	1866.0	1868.8	1878.2	1864.7
177.5°	1878.2	1868.8	1870.2	1879.7	1867.4
180°	1871.4	1871.4	1871.4	1871.4	1871.4



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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	9.18	9.95	10.21	10.98	12.36	5.14	5.91	6.17	6.94	8.32
	3H	10.85	11.54	11.89	12.58	13.98	6.32	7.01	7.36	8.05	9.45
	4H	11.45	12.11	12.50	13.15	14.55	6.76	7.42	7.81	8.46	9.86
	6H	11.87	12.47	12.93	13.51	14.93	7.08	7.68	8.13	8.72	10.14
	8H	11.99	12.56	13.05	13.62	15.04	7.16	7.73	8.22	8.79	10.21
	12H	12.05	12.59	13.12	13.65	15.08	7.20	7.74	8.27	8.80	10.23
4H	2H	9.19	9.84	10.25	10.88	12.29	5.73	6.38	6.78	7.42	8.83
	3H	11.01	11.55	12.07	12.62	14.04	7.07	7.61	8.13	8.68	10.10
	4H	11.70	12.19	12.76	13.25	14.69	7.61	8.10	8.67	9.16	10.60
	6H	12.20	12.63	13.28	13.71	15.15	8.02	8.44	9.09	9.53	10.96
	8H	12.37	12.77	13.45	13.85	15.30	8.14	8.54	9.22	9.61	11.06
	12H	12.46	12.82	13.56	13.91	15.37	8.20	8.56	9.29	9.65	11.10
8H	4H	11.66	12.06	12.73	13.13	14.58	7.88	8.28	8.96	9.35	10.80
	6H	12.22	12.54	13.32	13.66	15.11	8.39	8.72	9.49	9.83	11.28
	8H	12.43	12.72	13.54	13.82	15.28	8.57	8.86	9.68	9.96	11.43
	12H	12.56	12.81	13.67	13.91	15.42	8.68	8.94	9.79	10.03	11.54
12H	4H	11.61	11.97	12.70	13.06	14.51	7.88	8.24	8.97	9.33	10.78
	6H	12.19	12.48	13.30	13.58	15.05	8.43	8.72	9.54	9.82	11.29
	8H	12.40	12.66	13.51	13.75	15.26	8.64	8.89	9.75	9.99	11.49