

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: P914577

Luminaire Tested: DFN2DIP-SQ3F0-050D080US927-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P914577
REPORT IS A COMBINATION OF REPORTS P901455 AND P898289
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ3F0-050D080US927-FLLONL
Description: 3 foot, Square Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

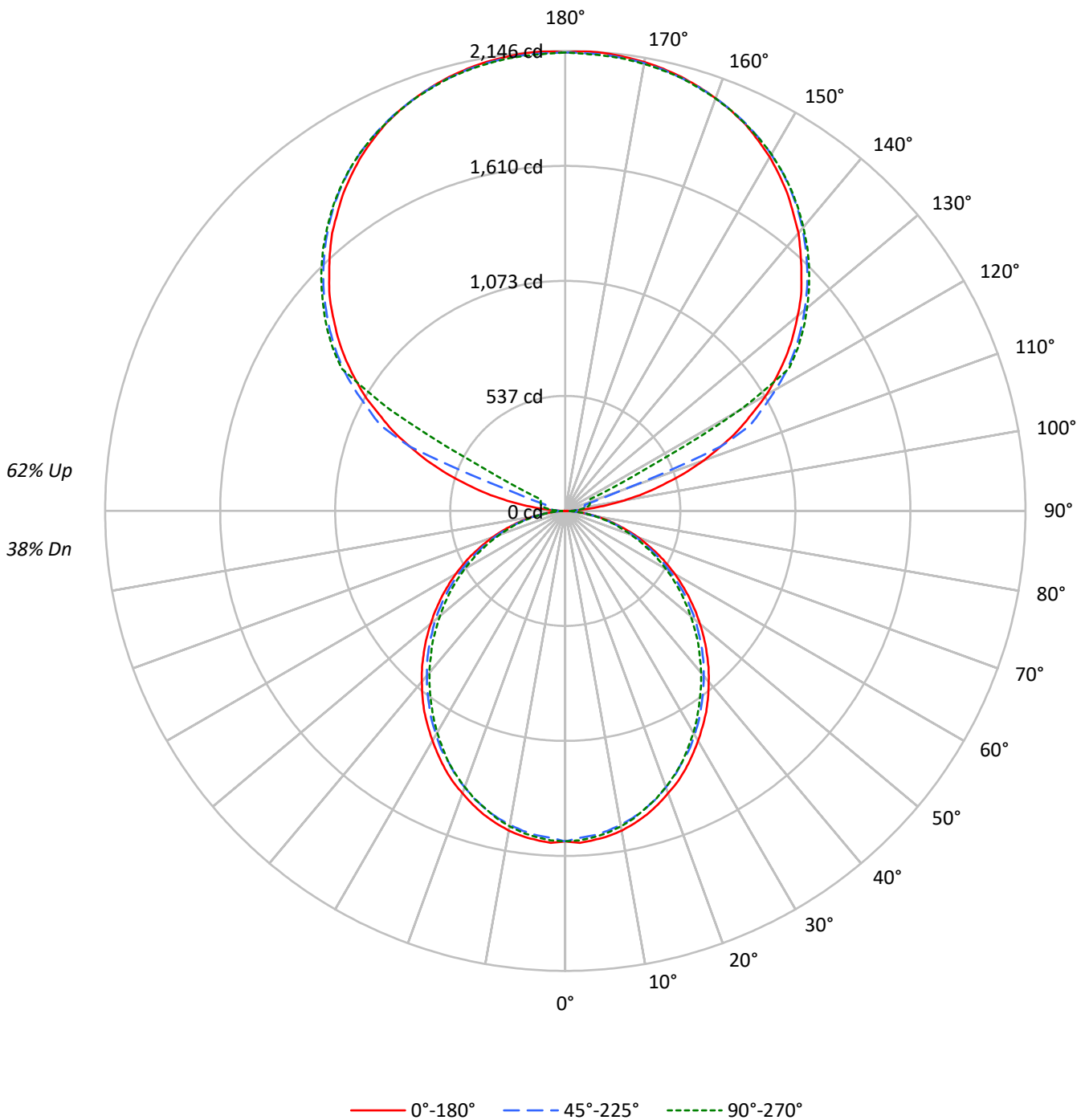
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 10195.3 lumens
Efficiency: N/A
Efficacy: 99.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.06' x L: 3.06' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 102.6
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9789
Total Harmonic Distortion (THDi): 0.074
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				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	104	104	104	104	95	95	95	95	77	77	77	61	61	61	46	46	46	38				38
1	95	91	87	84	86	83	80	77	67	65	63	53	52	50	40	39	38	32				32
2	87	79	73	68	78	72	67	63	59	55	52	47	44	42	35	34	32	27				27
3	79	70	63	57	71	64	57	52	52	48	44	41	38	36	31	29	28	23				23
4	72	62	54	48	65	56	50	44	46	41	37	37	33	30	28	26	24	20				20
5	66	55	47	41	60	50	43	38	41	36	32	33	29	26	25	23	21	17				17
6	61	49	41	36	55	45	38	33	37	32	28	30	26	23	23	20	18	15				15
7	56	44	36	31	51	41	34	29	34	28	25	27	23	20	21	18	16	13				13
8	52	40	33	27	47	37	30	25	31	25	22	25	21	18	19	16	14	12				12
9	49	37	29	24	44	34	27	23	28	23	19	23	19	16	18	15	13	11				11
10	45	33	26	22	41	31	25	20	26	21	17	21	17	15	16	14	12	10				10

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1766	1766	1766
5°	1768	1740	1752
10°	1752	1716	1728
15°	1725	1686	1691
20°	1689	1646	1652
25°	1654	1598	1608
30°	1609	1553	1551
35°	1567	1500	1492
40°	1515	1447	1435
45°	1463	1393	1377
50°	1406	1337	1310
55°	1347	1272	1248
60°	1279	1195	1177
65°	1206	1115	1093
70°	1112	1018	1003
75°	982	901	918
80°	826	752	759
85°	581	497	497

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°
 Vertical Angle: 90°
 Luminance: 1464 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	145.1	1.4
10°-20°	408.1	4.0
20°-30°	599.8	5.9
30°-40°	696.6	6.8
40°-50°	695.8	6.8
50°-60°	606.7	6.0
60°-70°	448.5	4.4
70°-80°	253.7	2.5
80°-90°	70.7	0.7
90°-100°	70.5	0.7
100°-110°	262.9	2.6
110°-120°	697.3	6.8
120°-130°	1156.5	11.3
130°-140°	1228.4	12.0
140°-150°	1141.7	11.2
150°-160°	917.9	9.0
160°-170°	591.5	5.8
170°-180°	203.6	2.0
0°-30°	1153.0	11.3
0°-40°	1849.6	18.1
0°-60°	3152.1	30.9
0°-90°	3925.0	38.5
90°-120°	1030.7	10.1
90°-150°	4557.3	44.7
90°-180°	6270.0	61.5
0°-180°	10195.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1541	1541	1541	1541	1541	
5°	1541	1535	1519	1531	1528	146
15°	1467	1458	1439	1445	1438	413
25°	1328	1316	1291	1294	1291	611
35°	1146	1131	1107	1098	1091	715
45°	932	922	900	883	877	719
55°	706	697	679	661	654	631
65°	476	467	452	439	431	470
75°	249	246	238	230	233	266
85°	61	59	58	53	52	68
90°	2	18	31	39	42	9
95°	100	49	60	68	66	119
105°	470	517	94	111	118	503
115°	890	916	955	238	127	876
125°	1258	1278	1308	1319	1323	1122
135°	1557	1582	1596	1611	1608	1203
145°	1806	1804	1831	1842	1834	1130
155°	1989	1975	1993	2003	1990	916
165°	2096	2086	2091	2102	2091	592
175°	2143	2133	2136	2146	2131	204
180°	2139	2139	2139	2139	2139	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1541.2	1541.2	1541.2	1541.2	1541.2
2.5°	1550.1	1542.8	1526.5	1541.2	1538.4
5°	1541.2	1535.4	1519.0	1530.8	1528.0
7.5°	1530.8	1522.0	1505.7	1517.7	1514.7
10°	1514.7	1504.3	1486.5	1498.3	1493.9
12.5°	1492.3	1483.5	1465.8	1473.1	1470.1
15°	1467.1	1458.3	1439.0	1445.0	1437.6
17.5°	1436.0	1427.2	1407.9	1415.2	1407.9
20°	1401.9	1393.1	1372.4	1376.7	1370.9
22.5°	1367.9	1354.6	1335.2	1335.2	1332.2
25°	1327.9	1316.1	1290.9	1293.7	1290.9
27.5°	1283.3	1273.0	1253.8	1249.3	1242.0
30°	1239.0	1227.1	1204.9	1200.5	1194.5
32.5°	1191.5	1182.7	1159.0	1150.0	1144.1
35°	1145.6	1130.8	1107.1	1098.1	1090.8
37.5°	1093.7	1080.4	1056.6	1046.2	1038.9
40°	1040.5	1028.5	1004.7	991.5	985.6
42.5°	988.6	976.6	953.0	938.0	929.2
45°	932.2	921.9	899.5	883.4	877.3
47.5°	877.3	867.0	843.3	826.9	818.1
50°	819.5	812.1	791.4	770.6	763.2
52.5°	763.2	752.8	733.6	717.3	706.9
55°	705.5	696.6	678.7	661.0	653.6
57.5°	647.6	640.2	620.9	603.2	597.1
60°	589.8	584.0	563.2	546.8	542.5
62.5°	533.5	523.2	508.3	493.5	487.6
65°	475.8	466.8	452.0	438.7	431.3
67.5°	416.5	409.0	395.8	385.4	379.4
70°	361.6	355.7	342.3	331.9	326.1
72.5°	305.4	299.4	292.0	281.6	277.2
75°	248.9	246.1	238.5	229.7	232.7
77.5°	198.6	192.6	189.6	185.2	180.9
80°	148.3	146.7	143.7	139.3	136.3
82.5°	100.8	100.8	99.3	93.4	93.4
85°	60.7	59.3	57.8	53.3	51.9
87.5°	26.7	23.8	20.8	16.3	14.8
90°	1.5	18.5	30.9	38.7	41.7
92.5°	38.7	32.6	37.2	40.2	41.7
95°	100.5	49.4	60.3	68.2	66.5
97.5°	181.0	54.2	78.8	83.7	85.1
100°	274.0	61.9	88.2	100.5	103.6
102.5°	376.0	373.0	91.3	108.2	113.0
105°	470.5	517.0	94.4	111.4	117.6
107.5°	580.4	618.9	97.6	114.5	120.7
110°	685.7	718.0	270.9	116.1	122.2



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	784.7	812.5	786.2	119.1	123.9
115°	889.9	916.2	954.9	238.4	127.0
117.5°	981.2	1012.1	1038.5	817.1	411.7
120°	1083.4	1106.5	1134.5	1153.0	944.0
122.5°	1169.9	1194.8	1225.8	1235.0	1236.7
125°	1258.1	1278.3	1307.7	1318.6	1323.2
127.5°	1338.6	1360.3	1383.7	1399.1	1400.6
130°	1414.5	1439.3	1456.3	1473.4	1471.9
132.5°	1491.9	1512.1	1529.1	1543.0	1541.5
135°	1557.0	1581.7	1595.5	1611.2	1608.0
137.5°	1625.0	1643.5	1659.1	1674.6	1670.0
140°	1691.5	1704.0	1720.9	1734.9	1727.1
142.5°	1747.4	1758.2	1778.2	1790.6	1782.8
145°	1806.2	1804.5	1830.8	1841.7	1833.9
147.5°	1857.1	1852.5	1878.7	1886.5	1880.4
150°	1906.7	1895.8	1920.6	1929.8	1922.1
152.5°	1948.4	1936.1	1959.2	1968.6	1957.8
155°	1988.7	1974.9	1993.4	2002.6	1990.4
157.5°	2021.2	2008.9	2022.8	2033.7	2021.2
160°	2049.1	2039.8	2049.1	2058.3	2047.5
162.5°	2073.8	2064.6	2072.3	2083.1	2069.2
165°	2095.5	2086.3	2090.9	2101.7	2090.9
167.5°	2112.5	2103.2	2107.9	2118.8	2104.8
170°	2126.5	2117.1	2120.3	2131.1	2117.1
172.5°	2135.7	2126.5	2129.6	2140.5	2126.5
175°	2143.4	2132.6	2135.7	2146.5	2131.1
177.5°	2146.5	2135.7	2137.3	2148.2	2134.2
180°	2138.8	2138.8	2138.8	2138.8	2138.8



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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	8.05	8.81	9.10	9.87	11.29	7.60	8.37	8.65	9.42	10.85
	3H	9.70	10.38	10.75	11.45	12.89	9.21	9.89	10.27	10.96	12.40
	4H	10.28	10.93	11.35	11.99	13.44	9.78	10.43	10.85	11.50	12.95
	6H	10.67	11.27	11.75	12.34	13.80	10.17	10.77	11.25	11.84	13.30
	8H	10.77	11.34	11.85	12.42	13.88	10.27	10.84	11.35	11.92	13.38
	12H	10.81	11.35	11.90	12.43	13.91	10.30	10.84	11.39	11.92	13.40
4H	2H	8.49	9.14	9.57	10.21	11.66	8.14	8.79	9.22	9.85	11.31
	3H	10.34	10.89	11.43	11.98	13.44	9.94	10.48	11.02	11.57	13.04
	4H	11.05	11.55	12.14	12.63	14.12	10.63	11.13	11.72	12.21	13.69
	6H	11.56	11.98	12.65	13.09	14.57	11.12	11.55	12.22	12.66	14.14
	8H	11.70	12.10	12.80	13.20	14.69	11.26	11.66	12.36	12.76	14.26
	12H	11.77	12.13	12.88	13.24	14.74	11.32	11.68	12.43	12.79	14.29
8H	4H	11.24	11.64	12.33	12.73	14.23	10.86	11.26	11.96	12.36	13.85
	6H	11.86	12.19	12.98	13.33	14.82	11.47	11.80	12.59	12.94	14.44
	8H	12.07	12.36	13.20	13.48	15.00	11.68	11.97	12.81	13.09	14.60
	12H	12.20	12.45	13.33	13.57	15.12	11.79	12.04	12.92	13.16	14.71
12H	4H	11.22	11.58	12.33	12.69	14.19	10.85	11.21	11.96	12.32	13.82
	6H	11.88	12.17	13.01	13.30	14.81	11.51	11.80	12.64	12.92	14.43
	8H	12.12	12.37	13.25	13.49	15.04	11.74	11.99	12.87	13.11	14.66