

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: P914649

Luminaire Tested: DFN2DIP-SQ3F0-070D080US927-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P914649
REPORT IS A COMBINATION OF REPORTS P901459 AND P898289
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ3F0-070D080US927-FLLONL
Description: 3 foot, Square Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

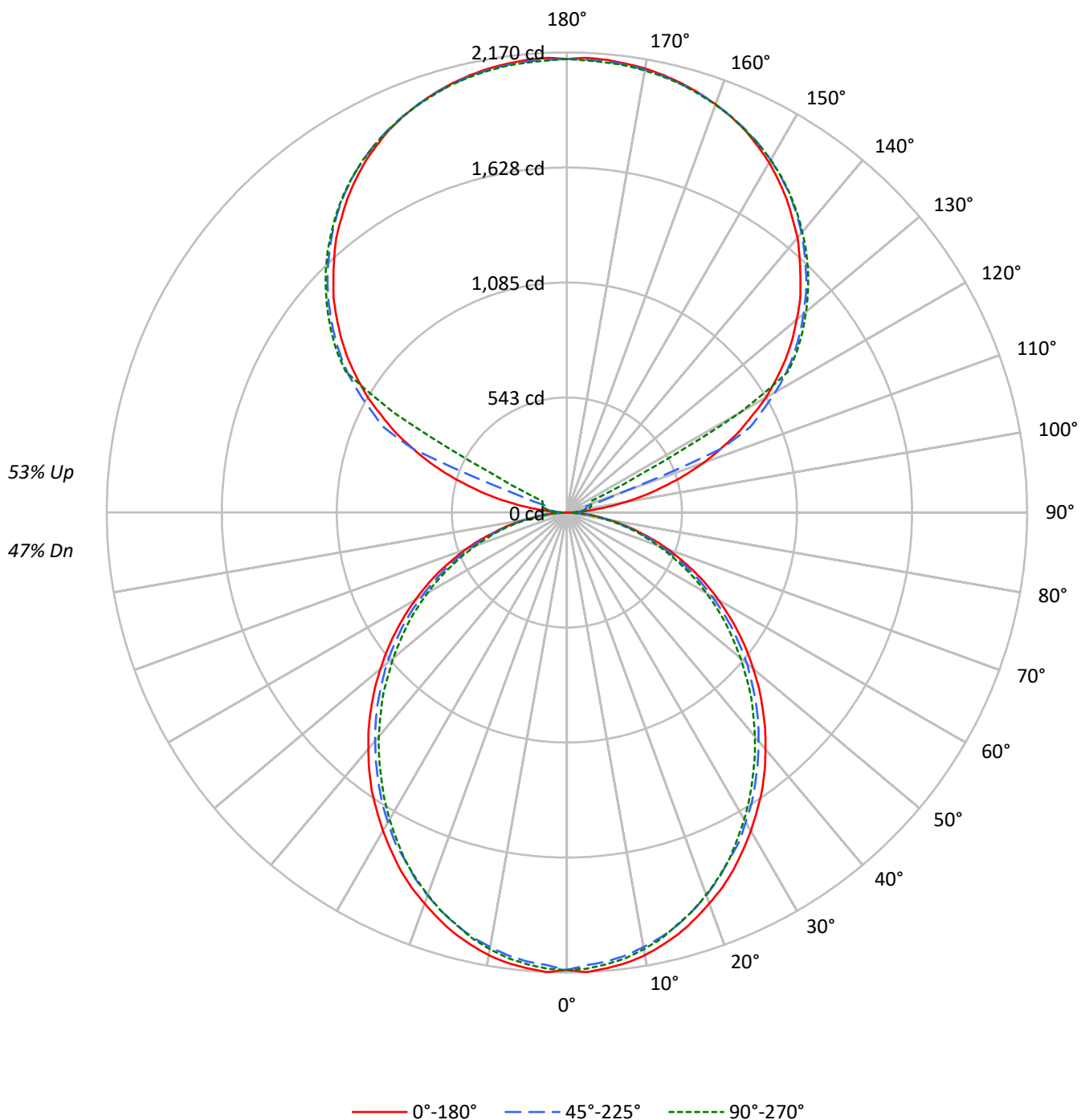
Lumens per Lamp: N/A
Luminaire Lumens: 11763.9 lumens
Efficiency: N/A
Efficacy: 93.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.06' x L: 3.06' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 126
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

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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					0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10
RCR																				
0	106	106	106	106	98	98	98	98	81	81	81	67	67	67	53	53	53	47	47	47
1	97	93	89	85	89	85	82	79	71	69	67	59	57	56	47	46	45	39	39	39
2	88	81	75	70	81	75	69	65	63	59	55	52	49	46	41	39	38	33	33	33
3	81	71	64	58	74	66	59	54	55	50	47	46	42	39	37	34	32	28	28	28
4	74	63	55	49	67	58	51	46	49	44	40	41	37	34	33	30	28	24	24	24
5	68	56	48	42	62	52	45	39	44	38	34	36	32	29	29	27	24	21	21	21
6	62	50	42	36	57	47	39	34	40	34	30	33	29	25	27	24	21	18	18	18
7	58	45	37	32	53	42	35	30	36	30	26	30	26	23	24	21	19	16	16	16
8	53	41	33	28	49	38	31	27	33	27	23	27	23	20	22	19	17	15	15	15
9	50	38	30	25	46	35	28	24	30	25	21	25	21	18	21	18	15	13	13	13
10	46	34	27	22	43	32	26	21	28	22	19	23	19	16	19	16	14	12	12	12

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2472	2472	2472
5°	2475	2436	2453
10°	2453	2402	2419
15°	2415	2361	2367
20°	2365	2304	2313
25°	2315	2237	2251
30°	2253	2174	2172
35°	2193	2100	2088
40°	2121	2025	2009
45°	2048	1951	1927
50°	1969	1872	1833
55°	1885	1781	1746
60°	1791	1673	1647
65°	1688	1561	1530
70°	1557	1425	1404
75°	1375	1261	1286
80°	1156	1052	1062
85°	814	697	695

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2048 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	203.1	1.7
10°-20°	571.4	4.9
20°-30°	839.7	7.1
30°-40°	975.3	8.3
40°-50°	974.1	8.3
50°-60°	849.4	7.2
60°-70°	627.9	5.3
70°-80°	355.2	3.0
80°-90°	97.5	0.8
90°-100°	70.5	0.6
100°-110°	262.9	2.2
110°-120°	697.3	5.9
120°-130°	1156.5	9.8
130°-140°	1228.4	10.4
140°-150°	1141.7	9.7
150°-160°	917.9	7.8
160°-170°	591.5	5.0
170°-180°	203.6	1.7
0°-30°	1614.2	13.7
0°-40°	2589.5	22.0
0°-60°	4412.9	37.5
0°-90°	5493.6	46.7
90°-120°	1030.7	8.8
90°-150°	4557.3	38.7
90°-180°	6270.0	53.3
0°-180°	11763.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2158	2158	2158	2158	2158	
5°	2158	2150	2127	2143	2139	205
15°	2054	2042	2015	2023	2013	578
25°	1859	1842	1807	1811	1807	855
35°	1604	1583	1550	1537	1527	1002
45°	1305	1291	1259	1237	1228	1007
55°	988	975	950	925	915	883
65°	666	654	633	614	604	659
75°	348	344	334	322	326	372
85°	85	83	81	75	73	95
90°	2	18	31	39	42	11
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°	2157.7	2157.7	2157.7	2157.7	2157.7
2.5°	2170.3	2159.9	2137.0	2157.7	2153.7
5°	2157.7	2149.6	2126.7	2143.2	2139.2
7.5°	2143.2	2130.8	2107.9	2124.7	2120.5
10°	2120.5	2105.9	2081.1	2097.6	2091.4
12.5°	2089.2	2076.9	2052.1	2062.4	2058.2
15°	2054.0	2041.7	2014.6	2023.0	2012.6
17.5°	2010.4	1998.1	1971.0	1981.4	1971.0
20°	1962.6	1950.4	1921.3	1927.5	1919.3
22.5°	1915.1	1896.4	1869.3	1869.3	1865.1
25°	1859.0	1842.5	1807.3	1811.2	1807.3
27.5°	1796.7	1782.2	1755.3	1749.1	1738.8
30°	1734.6	1717.8	1686.9	1680.7	1672.3
32.5°	1668.1	1655.8	1622.5	1610.0	1601.6
35°	1603.8	1583.2	1549.9	1537.4	1527.0
37.5°	1531.2	1512.5	1479.2	1464.7	1454.4
40°	1456.6	1439.9	1406.6	1388.1	1379.7
42.5°	1383.9	1367.2	1334.2	1313.3	1300.9
45°	1305.1	1290.6	1259.3	1236.7	1228.3
47.5°	1228.3	1213.8	1180.5	1157.6	1145.3
50°	1147.3	1136.9	1107.9	1078.9	1068.5
52.5°	1068.5	1054.0	1027.1	1004.2	989.7
55°	987.7	975.2	950.3	925.4	915.0
57.5°	906.7	896.4	869.3	844.4	836.1
60°	825.7	817.5	788.5	765.6	759.5
62.5°	746.9	732.4	711.7	691.0	682.6
65°	666.1	653.5	632.9	614.2	603.8
67.5°	583.1	572.6	554.1	539.6	531.2
70°	506.3	498.0	479.2	464.7	456.5
72.5°	427.5	419.1	408.8	394.3	388.1
75°	348.5	344.5	333.9	321.6	325.8
77.5°	278.1	269.7	265.5	259.3	253.2
80°	207.6	205.4	201.2	195.0	190.8
82.5°	141.1	141.1	139.1	130.8	130.8
85°	85.0	83.0	81.0	74.6	72.6
87.5°	37.4	33.3	29.1	22.9	20.7
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	10.07	10.90	11.05	11.90	13.22	9.62	10.46	10.61	11.45	12.77
	3H	11.72	12.47	12.72	13.48	14.82	11.23	11.98	12.23	12.99	14.32
	4H	12.31	13.01	13.32	14.02	15.37	11.81	12.52	12.82	13.53	14.88
	6H	12.70	13.35	13.72	14.37	15.73	12.20	12.85	13.22	13.87	15.23
	8H	12.80	13.42	13.83	14.45	15.81	12.30	12.92	13.33	13.95	15.31
	12H	12.85	13.44	13.88	14.46	15.84	12.34	12.93	13.37	13.95	15.33
4H	2H	10.52	11.23	11.54	12.24	13.59	10.17	10.88	11.18	11.88	13.23
	3H	12.38	12.97	13.40	14.01	15.37	11.97	12.56	13.00	13.60	14.96
	4H	13.09	13.63	14.12	14.66	16.04	12.67	13.21	13.70	14.24	15.62
	6H	13.60	14.06	14.64	15.12	16.50	13.17	13.63	14.21	14.69	16.06
	8H	13.75	14.18	14.79	15.23	16.62	13.31	13.74	14.35	14.79	16.18
	12H	13.82	14.21	14.88	15.27	16.67	13.37	13.76	14.43	14.82	16.22
8H	4H	13.28	13.71	14.32	14.76	16.16	12.90	13.34	13.95	14.38	15.78
	6H	13.90	14.26	14.97	15.35	16.74	13.52	13.88	14.59	14.97	16.36
	8H	14.12	14.44	15.20	15.51	16.92	13.73	14.04	14.80	15.12	16.53
	12H	14.25	14.53	15.33	15.59	17.05	13.84	14.12	14.92	15.18	16.64
12H	4H	13.26	13.66	14.32	14.72	16.12	12.90	13.29	13.96	14.35	15.75
	6H	13.93	14.25	15.01	15.32	16.73	13.56	13.88	14.63	14.95	16.36
	8H	14.17	14.45	15.25	15.51	16.97	13.79	14.07	14.87	15.13	16.59