

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: P914475

Luminaire Tested: DFN2DIP-SQ2F0-060D080US927-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P914475
REPORT IS A COMBINATION OF REPORTS P901358 AND P898215
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ2F0-060D080US927-RLLONL
Description: 2 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

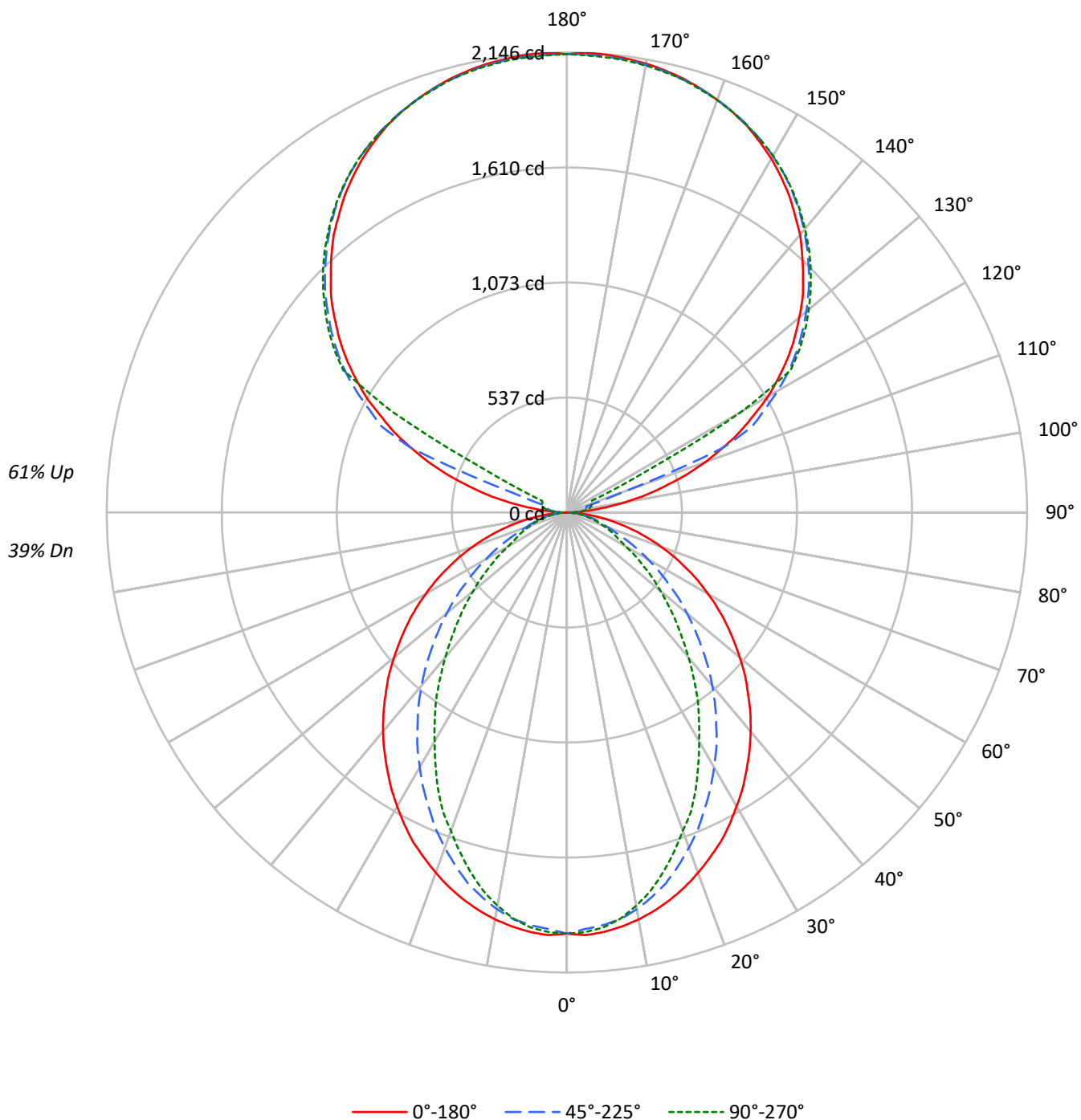
Lumens per Lamp: N/A
Luminaire Lumens: 10314.2 lumens
Efficiency: N/A
Efficacy: 86.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.21' x L: 2.21' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 120
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9781
Total Harmonic Distortion (THDi): 0.075
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	105	105	105	105	95	95	95	95	77	77	77	61	61	61	46	46	46
1	96	92	88	85	87	83	80	78	68	66	64	54	53	52	41	41	40
2	87	80	75	70	79	73	68	64	60	57	54	48	46	44	37	35	34
3	80	71	64	58	73	65	59	54	53	49	46	43	40	37	33	31	29
4	73	63	55	50	67	58	51	46	48	43	39	38	35	32	30	27	26
5	67	56	48	43	61	52	45	40	43	38	34	35	31	28	27	25	23
6	62	51	43	37	56	46	40	35	39	34	30	31	28	25	25	22	20
7	57	46	38	33	52	42	35	31	35	30	26	29	25	22	23	20	18
8	53	42	34	29	49	38	32	27	32	27	23	26	22	20	21	18	16
9	50	38	31	26	45	35	29	24	29	24	21	24	20	18	19	17	15
10	46	35	28	23	42	32	26	22	27	22	19	22	19	16	18	15	13

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4320	4320	4320
5°	4319	4242	4272
10°	4269	4149	4127
15°	4202	4003	3907
20°	4117	3805	3638
25°	4030	3585	3379
30°	3915	3361	3053
35°	3803	3120	2766
40°	3687	2872	2439
45°	3555	2598	2142
50°	3416	2323	1853
55°	3271	2029	1575
60°	3103	1724	1291
65°	2910	1415	1155
70°	2674	1127	1037
75°	2378	975	931
80°	1952	792	789
85°	1271	491	561

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3555 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	184.1	1.8
10°-20°	505.4	4.9
20°-30°	709.6	6.9
30°-40°	773.5	7.5
40°-50°	710.9	6.9
50°-60°	558.3	5.4
60°-70°	363.4	3.5
70°-80°	187.1	1.8
80°-90°	51.5	0.5
90°-100°	70.5	0.7
100°-110°	262.9	2.5
110°-120°	697.3	6.8
120°-130°	1156.5	11.2
130°-140°	1228.4	11.9
140°-150°	1141.7	11.1
150°-160°	917.9	8.9
160°-170°	591.5	5.7
170°-180°	203.6	2.0
0°-30°	1399.1	13.6
0°-40°	2172.6	21.1
0°-60°	3441.9	33.4
0°-90°	4043.9	39.2
90°-120°	1030.7	10.0
90°-150°	4557.3	44.2
90°-180°	6270.0	60.8
0°-180°	10314.2	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°	2	18	31	39	42	10
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°	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°	1.5	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	11.02	11.77	12.07	12.82	14.24	6.98	7.73	8.03	8.78	10.20
	3H	12.67	13.34	13.73	14.40	15.84	8.14	8.81	9.20	9.87	11.31
	4H	13.26	13.89	14.33	14.96	16.40	8.58	9.21	9.65	10.27	11.72
	6H	13.66	14.25	14.74	15.31	16.77	8.88	9.46	9.96	10.53	11.98
	8H	13.78	14.33	14.86	15.41	16.87	8.96	9.51	10.04	10.59	12.04
	12H	13.83	14.36	14.92	15.43	16.91	8.99	9.52	10.08	10.59	12.07
4H	2H	11.02	11.65	12.10	12.72	14.16	7.55	8.19	8.63	9.25	10.69
	3H	12.82	13.35	13.90	14.44	15.89	8.87	9.40	9.96	10.49	11.95
	4H	13.49	13.98	14.58	15.06	16.54	9.40	9.89	10.49	10.97	12.45
	6H	13.99	14.40	15.08	15.50	16.98	9.80	10.21	10.90	11.32	12.79
	8H	14.15	14.53	15.25	15.63	17.12	9.92	10.30	11.01	11.40	12.89
	12H	14.23	14.58	15.34	15.69	17.18	9.97	10.32	11.08	11.42	12.92
8H	4H	13.45	13.84	14.55	14.93	16.42	9.67	10.05	10.76	11.15	12.64
	6H	13.99	14.31	15.11	15.45	16.93	10.16	10.48	11.28	11.61	13.10
	8H	14.20	14.47	15.32	15.59	17.10	10.33	10.61	11.46	11.73	13.24
	12H	14.32	14.56	15.45	15.68	17.22	10.43	10.68	11.56	11.79	13.34
12H	4H	13.40	13.75	14.51	14.86	16.35	9.66	10.01	10.78	11.12	12.62
	6H	13.97	14.25	15.09	15.36	16.87	10.20	10.48	11.33	11.60	13.10
	8H	14.17	14.41	15.30	15.53	17.07	10.39	10.64	11.52	11.75	13.29