

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: P914520

Luminaire Tested: DFN2DIP-SQ2F0-080D080US927-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P914520
REPORT IS A COMBINATION OF REPORTS P899841 AND P896659
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ2F0-080D080US927-FLLFLL
Description: 2 foot, Square Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

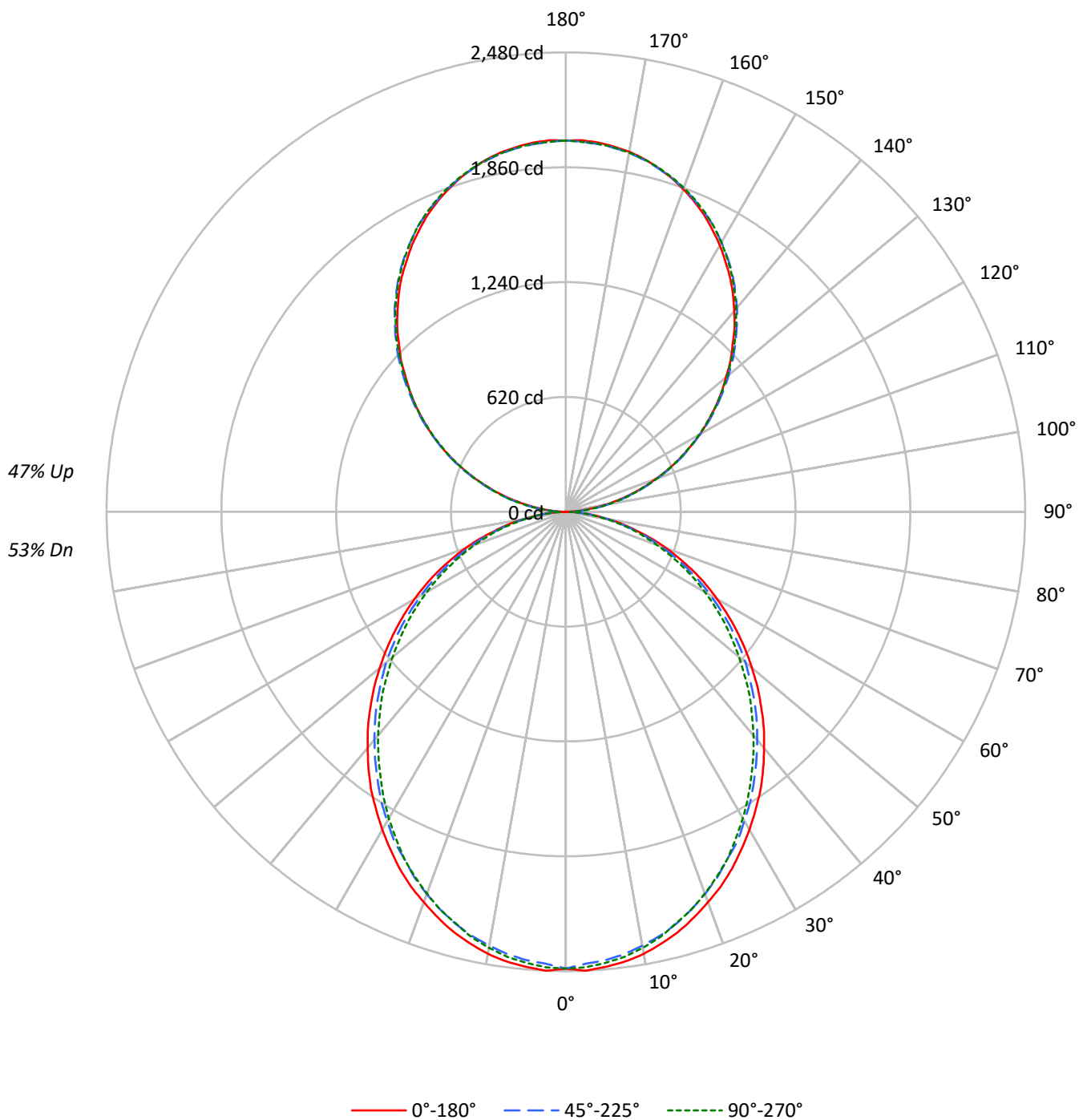
Lumens per Lamp: N/A
Luminaire Lumens: 11882.7 lumens
Efficiency: N/A
Efficacy: 82.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.21' x L: 2.21' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 143.9
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9957
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	0
RCR																				
0	108	108	108	108	100	100	100	100	85	85	85		71	71	71		59	59	59	53
1	98	94	90	87	91	87	84	81	74	72	70		63	61	59		52	51	50	45
2	90	82	76	71	83	76	71	66	65	61	58		55	52	50		46	44	42	37
3	82	72	65	59	75	67	61	55	58	53	49		49	45	42		41	38	36	32
4	75	64	56	50	69	60	52	47	51	46	41		43	39	36		36	33	31	27
5	69	57	49	43	63	53	46	40	46	40	36		39	35	31		33	29	27	24
6	63	51	43	37	58	48	40	35	41	36	31		35	31	27		30	26	24	21
7	59	46	38	33	54	43	36	31	37	32	28		32	28	24		27	24	21	18
8	54	42	34	29	50	39	32	27	34	29	24		29	25	22		25	21	19	16
9	51	38	31	26	47	36	29	24	31	26	22		27	23	19		23	20	17	15
10	47	35	28	23	44	33	26	22	29	23	20		25	21	18		21	18	15	13

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	5422	5422	5422
5°	5422	5335	5375
10°	5368	5251	5295
15°	5280	5153	5174
20°	5164	5021	5050
25°	5048	4866	4908
30°	4905	4721	4729
35°	4769	4551	4541
40°	4604	4380	4361
45°	4438	4207	4177
50°	4256	4025	3964
55°	4065	3815	3766
60°	3848	3568	3540
65°	3611	3310	3273
70°	3309	2995	2984
75°	2895	2618	2706
80°	2392	2138	2198
85°	1615	1350	1381

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 4438 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	232.1	2.0
10°-20°	653.0	5.5
20°-30°	959.7	8.1
30°-40°	1114.6	9.4
40°-50°	1113.2	9.4
50°-60°	970.7	8.2
60°-70°	717.6	6.0
70°-80°	406.0	3.4
80°-90°	112.9	0.9
90°-100°	124.0	1.0
100°-110°	394.1	3.3
110°-120°	674.4	5.7
120°-130°	886.9	7.5
130°-140°	995.5	8.4
140°-150°	976.2	8.2
150°-160°	818.9	6.9
160°-170°	543.1	4.6
170°-180°	189.8	1.6
0°-30°	1844.8	15.5
0°-40°	2959.4	24.9
0°-60°	5043.4	42.4
0°-90°	6279.8	52.8
90°-120°	1192.5	10.0
90°-150°	4051.1	34.1
90°-180°	5603.0	47.2
0°-180°	11882.7	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2466	2466	2466	2466	2466	
5°	2466	2457	2430	2449	2445	234
15°	2348	2333	2302	2312	2300	661
25°	2125	2106	2066	2070	2066	978
35°	1833	1809	1771	1757	1745	1145
45°	1492	1475	1439	1413	1404	1151
55°	1129	1114	1086	1058	1046	1009
65°	761	747	723	702	690	753
75°	398	394	382	368	372	425
85°	97	95	93	85	83	108
90°	2	22	59	56	57	11
95°	88	105	108	108	105	98
105°	364	369	372	375	375	384
115°	677	686	683	682	677	669
125°	984	999	995	989	987	880
135°	1273	1292	1296	1294	1289	984
145°	1546	1558	1567	1569	1563	966
155°	1767	1772	1778	1786	1781	813
165°	1923	1921	1921	1933	1924	542
175°	2001	1996	1992	2004	1994	190
180°	2004	2004	2004	2004	2004	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2465.9	2465.9	2465.9	2465.9	2465.9
2.5°	2480.2	2468.4	2442.3	2465.9	2461.4
5°	2465.9	2456.6	2430.5	2449.3	2444.8
7.5°	2449.3	2435.2	2409.1	2428.2	2423.4
10°	2423.4	2406.8	2378.4	2397.2	2390.2
12.5°	2387.7	2373.6	2345.2	2357.0	2352.2
15°	2347.5	2333.4	2302.4	2312.0	2300.2
17.5°	2297.6	2283.5	2252.6	2264.4	2252.6
20°	2243.1	2229.0	2195.8	2202.8	2193.5
22.5°	2188.7	2167.3	2136.4	2136.4	2131.6
25°	2124.6	2105.7	2065.5	2070.0	2065.5
27.5°	2053.3	2036.8	2006.0	1999.0	1987.2
30°	1982.4	1963.3	1927.9	1920.8	1911.2
32.5°	1906.5	1892.4	1854.3	1840.0	1830.5
35°	1832.9	1809.3	1771.3	1757.0	1745.2
37.5°	1749.9	1728.5	1690.6	1674.0	1662.2
40°	1664.7	1645.5	1607.6	1586.4	1576.8
42.5°	1581.7	1562.5	1524.8	1500.9	1486.8
45°	1491.6	1475.0	1439.2	1413.3	1403.8
47.5°	1403.8	1387.2	1349.2	1323.0	1308.9
50°	1311.2	1299.4	1266.1	1233.0	1221.1
52.5°	1221.1	1204.5	1173.9	1147.7	1131.1
55°	1128.8	1114.4	1086.1	1057.6	1045.8
57.5°	1036.3	1024.4	993.5	965.0	955.4
60°	943.6	934.4	901.1	875.0	867.9
62.5°	853.6	837.0	813.3	789.7	780.1
65°	761.3	746.9	723.3	701.9	690.1
67.5°	666.4	654.3	633.2	616.6	607.0
70°	578.6	569.0	547.7	531.1	521.7
72.5°	488.5	479.0	467.1	450.6	443.5
75°	398.2	393.7	381.7	367.6	372.3
77.5°	317.7	308.2	303.4	296.4	289.3
80°	237.3	234.7	230.0	222.9	218.1
82.5°	161.3	161.3	159.0	149.4	149.4
85°	97.1	94.8	92.6	85.3	83.0
87.5°	42.8	38.0	33.2	26.1	23.7
90°	1.8	21.8	59.3	55.6	57.4
92.5°	37.5	50.8	52.6	54.3	54.3
95°	88.2	105.1	108.1	108.1	105.1
97.5°	146.9	162.6	169.2	169.2	169.2
100°	214.5	228.4	233.2	233.2	231.4
102.5°	285.8	296.1	302.7	304.5	302.7
105°	363.8	368.6	372.2	375.3	375.3
107.5°	441.1	448.4	448.4	449.6	441.1
110°	516.0	525.7	525.7	525.7	520.9

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	597.0	607.3	605.5	600.6	597.0
115°	676.8	686.4	683.4	681.6	676.8
117.5°	755.9	769.2	760.7	755.9	751.1
120°	835.7	849.0	835.7	835.7	830.2
122.5°	908.2	925.1	916.6	911.8	908.2
125°	984.3	999.4	994.6	989.1	987.4
127.5°	1058.7	1077.4	1070.7	1063.5	1058.7
130°	1128.1	1149.9	1146.8	1143.3	1136.6
132.5°	1206.1	1223.0	1224.2	1215.8	1210.9
135°	1273.1	1291.9	1295.5	1293.7	1288.9
137.5°	1348.1	1363.2	1366.2	1365.0	1357.7
140°	1414.0	1429.0	1437.5	1437.5	1430.8
142.5°	1481.6	1496.7	1501.6	1503.4	1496.7
145°	1545.7	1557.7	1567.4	1569.2	1562.6
147.5°	1603.1	1618.2	1625.4	1628.5	1621.8
150°	1662.3	1672.5	1679.2	1684.7	1679.2
152.5°	1714.8	1725.1	1733.6	1740.3	1733.6
155°	1767.4	1772.3	1777.7	1786.1	1780.7
157.5°	1812.7	1816.4	1819.4	1831.4	1823.0
160°	1853.2	1856.9	1858.7	1868.9	1861.7
162.5°	1890.7	1890.7	1892.5	1904.0	1895.5
165°	1922.7	1920.9	1920.9	1933.0	1924.5
167.5°	1951.7	1946.3	1946.3	1958.4	1949.9
170°	1973.5	1968.6	1966.8	1978.9	1968.6
172.5°	1988.6	1983.8	1982.0	1994.0	1983.8
175°	2000.7	1995.8	1992.2	2004.3	1994.0
177.5°	2007.3	2002.5	1998.8	2009.1	1998.8
180°	2004.3	2004.3	2004.3	2004.3	2004.3

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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	13.29	14.18	14.22	15.13	16.36	12.84	13.73	13.78	14.68	15.91
	3H	14.93	15.73	15.88	16.69	17.94	14.44	15.24	15.38	16.20	17.45
	4H	15.51	16.26	16.47	17.22	18.49	15.01	15.77	15.97	16.73	17.99
	6H	15.89	16.59	16.86	17.56	18.83	15.39	16.09	16.36	17.06	18.33
	8H	15.99	16.65	16.97	17.64	18.91	15.49	16.15	16.47	17.14	18.41
	12H	16.03	16.66	17.02	17.64	18.94	15.53	16.15	16.51	17.13	18.43
4H	2H	13.74	14.50	14.71	15.46	16.72	13.39	14.14	14.35	15.10	16.37
	3H	15.59	16.22	16.56	17.21	18.49	15.18	15.81	16.15	16.80	18.08
	4H	16.29	16.86	17.27	17.85	19.15	15.86	16.44	16.85	17.42	18.72
	6H	16.79	17.28	17.78	18.29	19.59	16.35	16.85	17.35	17.86	19.16
	8H	16.93	17.39	17.92	18.39	19.71	16.49	16.95	17.49	17.96	19.27
	12H	16.99	17.41	18.01	18.43	19.75	16.54	16.96	17.56	17.98	19.30
8H	4H	16.47	16.94	17.47	17.94	19.25	16.10	16.56	17.09	17.56	18.88
	6H	17.08	17.47	18.10	18.51	19.82	16.70	17.08	17.72	18.13	19.44
	8H	17.29	17.63	18.32	18.66	19.99	16.90	17.23	17.93	18.27	19.60
	12H	17.41	17.71	18.44	18.73	20.11	17.00	17.30	18.03	18.32	19.70
12H	4H	16.46	16.88	17.47	17.90	19.21	16.09	16.51	17.10	17.53	18.84
	6H	17.11	17.45	18.14	18.48	19.81	16.73	17.07	17.76	18.10	19.43
	8H	17.34	17.63	18.37	18.66	20.03	16.95	17.25	17.99	18.28	19.65