

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: P903025

Luminaire Tested: DFN2DIP-PN3F0-050D080US830-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P903025
REPORT IS A COMBINATION OF REPORTS P901105 AND P897955
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN3F0-050D080US830-FLLONL
Description: 3 foot, Pentagon Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

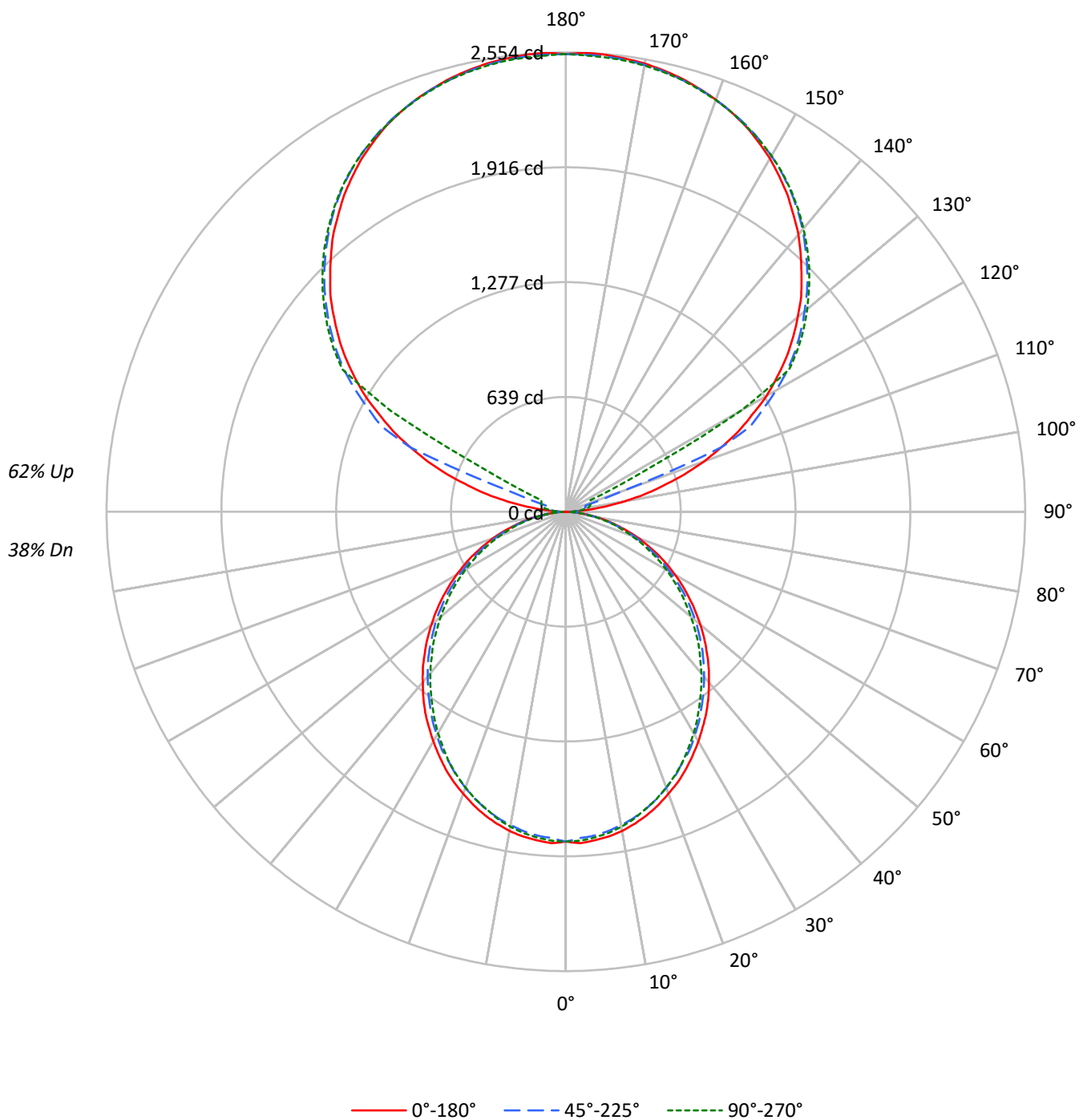
Lumens per Lamp: N/A
Luminaire Lumens: 12130.5 lumens
Efficiency: N/A
Efficacy: 114.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.96' x L: 3.11' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 106.4
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9613
Total Harmonic Distortion (THDi): 0.083
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	104	104	104	104	95	95	95	95	77	77	77	61	61	61	46	46	46	38		
1	95	91	87	84	86	83	80	77	67	65	63	53	52	50	40	39	38	32		
2	87	79	73	68	78	72	67	63	59	55	52	47	44	42	35	34	32	27		
3	79	70	63	57	71	64	57	52	52	48	44	41	38	36	31	29	28	23		
4	72	62	54	48	65	56	50	44	46	41	37	37	33	30	28	26	24	20		
5	66	55	47	41	60	50	43	38	41	36	32	33	29	26	25	23	21	17		
6	61	49	41	36	55	45	38	33	37	32	28	30	26	23	23	20	18	15		
7	56	44	36	31	51	41	34	29	34	28	25	27	23	20	21	18	16	13		
8	52	40	33	27	47	37	30	25	31	25	22	25	21	18	19	16	14	12		
9	49	37	29	24	44	34	27	23	28	23	19	23	19	16	18	15	13	11		
10	45	33	26	22	41	31	25	20	26	21	17	21	17	15	16	14	12	10		

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2144	2144	2144
5°	2146	2112	2127
10°	2127	2082	2097
15°	2095	2046	2051
20°	2051	1997	2005
25°	2008	1939	1950
30°	1954	1884	1882
35°	1902	1820	1809
40°	1839	1756	1740
45°	1777	1691	1669
50°	1708	1622	1587
55°	1636	1543	1512
60°	1554	1450	1426
65°	1465	1352	1323
70°	1351	1234	1213
75°	1194	1092	1111
80°	1004	910	916
85°	708	602	597

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1777 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	172.6	1.4
10°-20°	485.6	4.0
20°-30°	713.7	5.9
30°-40°	828.9	6.8
40°-50°	827.8	6.8
50°-60°	721.8	6.0
60°-70°	533.6	4.4
70°-80°	301.9	2.5
80°-90°	84.2	0.7
90°-100°	83.9	0.7
100°-110°	312.8	2.6
110°-120°	829.6	6.8
120°-130°	1376.0	11.3
130°-140°	1461.6	12.0
140°-150°	1358.4	11.2
150°-160°	1092.1	9.0
160°-170°	703.7	5.8
170°-180°	242.2	2.0
0°-30°	1371.9	11.3
0°-40°	2200.7	18.1
0°-60°	3750.4	30.9
0°-90°	4670.1	38.5
90°-120°	1226.4	10.1
90°-150°	5422.4	44.7
90°-180°	7460.0	61.5
0°-180°	12130.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1834	1834	1834	1834	1834	
5°	1834	1827	1807	1821	1818	174
15°	1746	1735	1712	1719	1710	492
25°	1580	1566	1536	1539	1536	727
35°	1363	1346	1317	1307	1298	851
45°	1109	1097	1070	1051	1044	856
55°	839	829	808	786	778	750
65°	566	555	538	522	513	560
75°	296	293	284	273	277	316
85°	72	70	69	63	62	81
90°	2	22	37	46	50	11
95°	120	59	72	81	79	142
105°	560	615	112	132	140	598
115°	1059	1090	1136	284	151	1042
125°	1497	1521	1556	1569	1574	1335
135°	1852	1882	1898	1917	1913	1431
145°	2149	2147	2178	2191	2182	1344
155°	2366	2350	2372	2383	2368	1090
165°	2493	2482	2488	2501	2488	704
175°	2550	2537	2541	2554	2536	243
180°	2545	2545	2545	2545	2545	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1833.7	1833.7	1833.7	1833.7	1833.7
2.5°	1844.4	1835.6	1816.2	1833.7	1830.4
5°	1833.7	1826.8	1807.3	1821.4	1818.1
7.5°	1821.4	1810.9	1791.5	1805.7	1802.1
10°	1802.1	1789.8	1768.7	1782.6	1777.4
12.5°	1775.6	1765.1	1744.0	1752.8	1749.2
15°	1745.6	1735.1	1712.1	1719.3	1710.4
17.5°	1708.5	1698.1	1675.1	1683.9	1675.1
20°	1668.0	1657.6	1632.9	1638.0	1631.2
22.5°	1627.6	1611.7	1588.7	1588.7	1585.1
25°	1579.9	1565.8	1535.9	1539.3	1535.9
27.5°	1526.9	1514.6	1491.8	1486.5	1477.7
30°	1474.1	1460.0	1433.6	1428.3	1421.3
32.5°	1417.7	1407.2	1378.9	1368.3	1361.2
35°	1363.0	1345.5	1317.2	1306.6	1297.8
37.5°	1301.3	1285.4	1257.2	1244.8	1236.0
40°	1237.9	1223.7	1195.4	1179.7	1172.6
42.5°	1176.2	1162.0	1133.9	1116.1	1105.6
45°	1109.2	1096.8	1070.3	1051.0	1043.9
47.5°	1043.9	1031.5	1003.3	983.8	973.4
50°	975.1	966.3	941.6	916.9	908.0
52.5°	908.0	895.7	872.9	853.5	841.1
55°	839.4	828.8	807.6	786.5	777.7
57.5°	770.5	761.8	738.8	717.7	710.5
60°	701.7	694.8	670.1	650.6	645.5
62.5°	634.8	622.5	604.8	587.2	580.1
65°	566.1	555.4	537.8	522.0	513.1
67.5°	495.6	486.6	470.9	458.5	451.4
70°	430.3	423.2	407.3	394.9	388.0
72.5°	363.4	356.2	347.4	335.1	329.8
75°	296.1	292.8	283.8	273.3	276.9
77.5°	236.3	229.1	225.6	220.4	215.2
80°	176.4	174.6	171.0	165.8	162.2
82.5°	119.9	119.9	118.2	111.1	111.1
85°	72.2	70.5	68.8	63.4	61.7
87.5°	31.8	28.3	24.7	19.4	17.6
90°	1.8	22.1	36.8	46.1	49.7
92.5°	46.1	38.7	44.2	47.9	49.7
95°	119.6	58.8	71.7	81.2	79.2
97.5°	215.4	64.5	93.8	99.5	101.2
100°	326.0	73.7	105.0	119.6	123.3
102.5°	447.4	443.8	108.7	128.8	134.5
105°	559.8	615.1	112.4	132.5	140.0
107.5°	690.5	736.4	116.1	136.2	143.6
110°	815.9	854.3	322.3	138.2	145.4

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	933.7	966.7	935.5	141.7	147.4
115°	1058.8	1090.1	1136.1	283.6	151.1
117.5°	1167.4	1204.2	1235.7	972.1	489.8
120°	1289.0	1316.5	1349.8	1371.9	1123.2
122.5°	1391.9	1421.5	1458.5	1469.4	1471.4
125°	1496.9	1521.0	1555.9	1568.9	1574.3
127.5°	1592.7	1618.5	1646.3	1664.6	1666.4
130°	1683.0	1712.5	1732.7	1753.0	1751.2
132.5°	1775.1	1799.1	1819.3	1835.9	1834.1
135°	1852.5	1882.0	1898.4	1917.0	1913.3
137.5°	1933.4	1955.5	1974.1	1992.4	1987.0
140°	2012.5	2027.4	2047.6	2064.2	2054.9
142.5°	2079.1	2091.9	2115.7	2130.4	2121.2
145°	2149.0	2147.0	2178.3	2191.2	2182.0
147.5°	2209.6	2204.1	2235.3	2244.6	2237.3
150°	2268.6	2255.7	2285.2	2296.1	2287.0
152.5°	2318.3	2303.6	2331.1	2342.3	2329.4
155°	2366.2	2349.8	2371.8	2382.7	2368.1
157.5°	2404.8	2390.2	2406.8	2419.7	2404.8
160°	2438.1	2427.0	2438.1	2449.0	2436.1
162.5°	2467.4	2456.5	2465.6	2478.5	2461.9
165°	2493.2	2482.3	2487.7	2500.6	2487.7
167.5°	2513.5	2502.4	2508.0	2520.9	2504.3
170°	2530.2	2518.9	2522.7	2535.6	2518.9
172.5°	2541.1	2530.2	2533.8	2546.7	2530.2
175°	2550.2	2537.3	2541.1	2553.9	2535.6
177.5°	2553.9	2541.1	2543.0	2555.9	2539.3
180°	2544.8	2544.8	2544.8	2544.8	2544.8

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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	8.72	9.48	9.77	10.54	11.96	8.28	9.04	9.33	10.10	11.52
	3H	10.36	11.05	11.42	12.11	13.56	9.88	10.57	10.94	11.63	13.08
	4H	10.94	11.59	12.01	12.66	14.11	10.46	11.11	11.53	12.17	13.63
	6H	11.33	11.93	12.41	13.00	14.46	10.84	11.44	11.92	12.51	13.98
	8H	11.43	12.00	12.52	13.09	14.55	10.94	11.51	12.03	12.60	14.06
	12H	11.47	12.02	12.56	13.10	14.58	10.98	11.52	12.07	12.60	14.08
4H	2H	9.16	9.81	10.24	10.88	12.33	8.81	9.46	9.89	10.53	11.98
	3H	11.01	11.56	12.10	12.65	14.11	10.61	11.15	11.70	12.25	13.71
	4H	11.72	12.22	12.81	13.30	14.78	11.30	11.80	12.39	12.88	14.37
	6H	12.22	12.65	13.32	13.76	15.23	11.80	12.23	12.90	13.33	14.81
	8H	12.37	12.77	13.46	13.86	15.36	11.94	12.34	13.04	13.44	14.93
	12H	12.43	12.79	13.55	13.90	15.40	11.99	12.36	13.11	13.47	14.97
8H	4H	11.90	12.30	13.00	13.40	14.90	11.53	11.93	12.63	13.03	14.53
	6H	12.52	12.85	13.64	13.99	15.48	12.15	12.48	13.27	13.62	15.11
	8H	12.74	13.03	13.86	14.15	15.66	12.35	12.64	13.48	13.77	15.28
	12H	12.86	13.11	13.99	14.23	15.78	12.46	12.72	13.59	13.83	15.38
12H	4H	11.88	12.24	13.00	13.36	14.86	11.52	11.88	12.64	12.99	14.49
	6H	12.55	12.84	13.68	13.96	15.47	12.19	12.47	13.31	13.60	15.11
	8H	12.78	13.04	13.91	14.15	15.70	12.41	12.67	13.54	13.78	15.33