

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: P903196

Luminaire Tested: DFN2DIP-PN4F0-050D080US830-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P903196
REPORT IS A COMBINATION OF REPORTS P899683 AND P896497
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN4F0-050D080US830-FLLFLL
Description: 4 foot, Pentagon Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

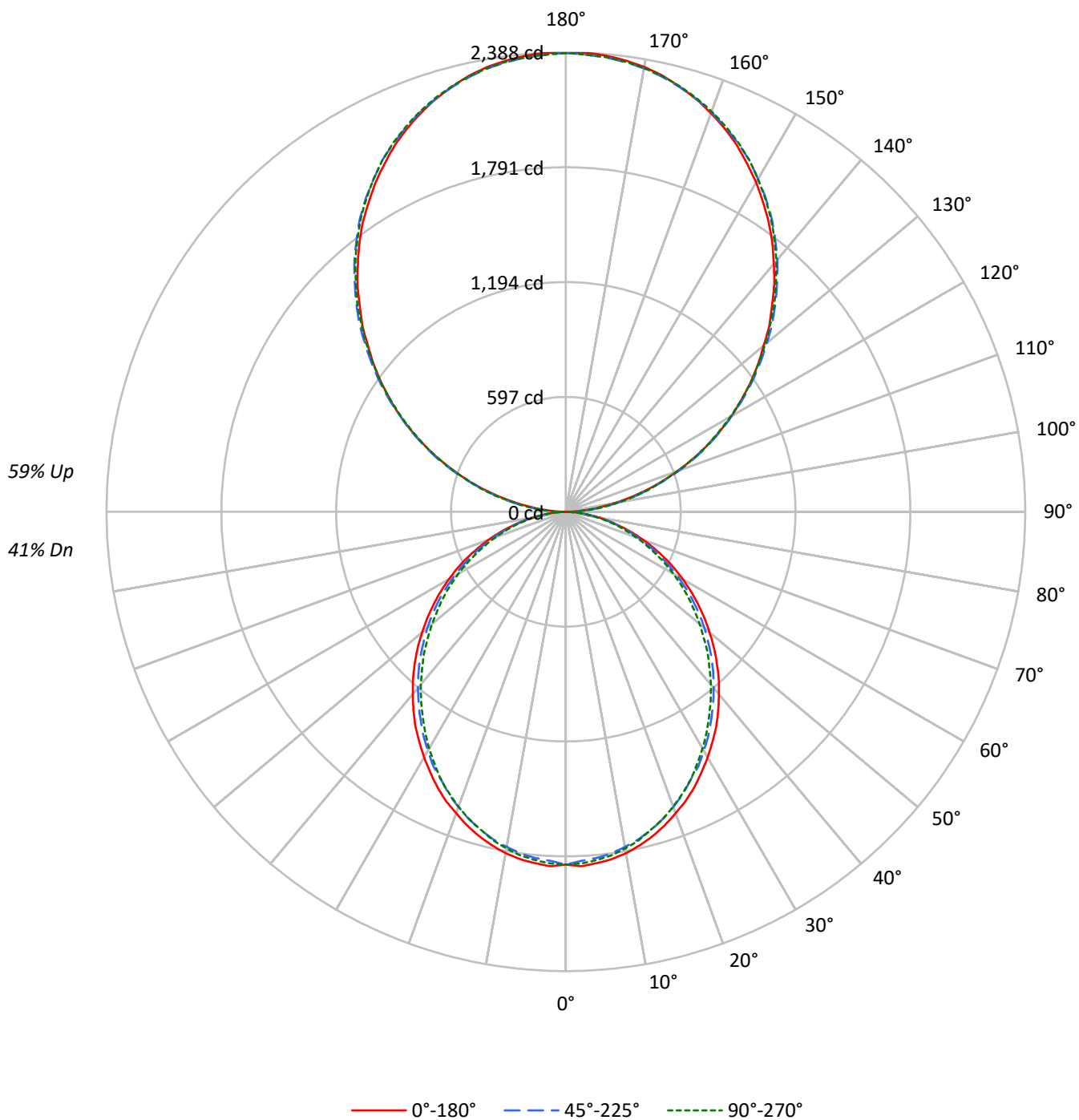
Lumens per Lamp: N/A
Luminaire Lumens: 11338.8 lumens
Efficiency: N/A
Efficacy: 111.2 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.74' x L: 3.94' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 102
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9951
Total Harmonic Distortion (THDi): 0.07
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P903196

CATALOG NUMBER: DFN2DIP-PN4F0-050D080US830-FLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P903196

CATALOG NUMBER: DFN2DIP-PN4F0-050D080US830-FLLFL

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	96	96	96	96	78	78	78	63	63	63	48	48	48
1	96	92	88	84	87	84	80	77	69	66	64	55	53	52	42	41	41
2	87	80	74	69	79	73	68	63	60	56	53	48	46	43	37	36	34
3	80	70	63	57	72	64	58	53	53	48	45	43	39	37	33	31	29
4	73	62	54	48	66	57	50	45	47	42	38	38	34	31	30	27	25
5	67	55	47	41	61	51	44	38	42	37	33	34	30	27	27	24	22
6	61	50	42	36	56	46	38	33	38	33	29	31	27	24	24	21	19
7	57	45	37	31	52	41	34	29	34	29	25	28	24	21	22	19	17
8	53	40	33	28	48	37	31	26	31	26	22	26	22	19	20	17	15
9	49	37	30	25	45	34	27	23	29	23	20	24	20	17	19	16	14
10	46	34	27	22	42	31	25	21	26	21	18	22	18	15	17	15	13

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1339	1339	1339
5°	1341	1320	1329
10°	1330	1303	1311
15°	1310	1281	1283
20°	1284	1252	1255
25°	1258	1216	1222
30°	1225	1183	1180
35°	1193	1144	1135
40°	1155	1105	1093
45°	1117	1066	1050
50°	1075	1024	999
55°	1031	976	953
60°	981	920	901
65°	927	861	838
70°	858	789	771
75°	763	704	710
80°	648	595	592
85°	469	405	396

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 1867 cd/sqm

TEST NUMBER: P903196

CATALOG NUMBER: DFN2DIP-PN4F0-050D080US830-FLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	172.6	1.5
10°-20°	485.6	4.3
20°-30°	713.7	6.3
30°-40°	828.9	7.3
40°-50°	827.8	7.3
50°-60°	721.8	6.4
60°-70°	533.6	4.7
70°-80°	301.9	2.7
80°-90°	86.5	0.8
90°-100°	147.6	1.3
100°-110°	468.9	4.1
110°-120°	802.4	7.1
120°-130°	1055.3	9.3
130°-140°	1184.5	10.4
140°-150°	1161.5	10.2
150°-160°	974.4	8.6
160°-170°	646.2	5.7
170°-180°	225.9	2.0
0°-30°	1371.9	12.1
0°-40°	2200.7	19.4
0°-60°	3750.4	33.1
0°-90°	4672.4	41.2
90°-120°	1418.8	12.5
90°-150°	4820.1	42.5
90°-180°	6666.0	58.8
0°-180°	11338.8	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	26	70	66	68	11
95°	105	125	129	129	125	117
105°	433	439	443	446	446	457
115°	805	817	813	811	805	796
125°	1171	1189	1183	1177	1175	1047
135°	1515	1537	1541	1539	1534	1171
145°	1839	1853	1865	1867	1859	1149
155°	2103	2109	2115	2125	2119	968
165°	2288	2286	2286	2300	2290	645
175°	2380	2375	2370	2385	2372	226
180°	2385	2385	2385	2385	2385	

TEST NUMBER: P903196

CATALOG NUMBER: DFN2DIP-PN4F0-050D080US830-FLLFLL

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°	2.2	25.9	70.5	66.2	68.3
92.5°	44.6	60.4	62.6	64.7	64.7
95°	105.0	125.1	128.7	128.7	125.1
97.5°	174.7	193.4	201.3	201.3	201.3
100°	255.2	271.7	277.5	277.5	275.3
102.5°	340.1	352.3	360.1	362.3	360.1
105°	432.8	438.6	442.9	446.5	446.5
107.5°	524.8	533.5	533.5	534.9	524.8
110°	614.0	625.5	625.5	625.5	619.7

TEST NUMBER: P903196

CATALOG NUMBER: DFN2DIP-PN4F0-050D080US830-FLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	710.3	722.6	720.4	714.6	710.3
115°	805.2	816.7	813.1	811.0	805.2
117.5°	899.4	915.2	905.1	899.4	893.6
120°	994.3	1010.1	994.3	994.3	987.8
122.5°	1080.5	1100.7	1090.6	1084.9	1080.5
125°	1171.1	1189.1	1183.4	1176.9	1174.8
127.5°	1259.6	1281.9	1273.9	1265.4	1259.6
130°	1342.3	1368.1	1364.5	1360.3	1352.4
132.5°	1435.0	1455.1	1456.6	1446.5	1440.8
135°	1514.8	1537.1	1541.4	1539.3	1533.5
137.5°	1603.9	1621.9	1625.5	1624.1	1615.4
140°	1682.3	1700.3	1710.3	1710.3	1702.4
142.5°	1762.8	1780.8	1786.6	1788.8	1780.8
145°	1839.1	1853.4	1864.9	1867.1	1859.2
147.5°	1907.3	1925.3	1933.9	1937.6	1929.7
150°	1977.8	1990.0	1997.9	2004.4	1997.9
152.5°	2040.3	2052.6	2062.7	2070.6	2062.7
155°	2102.9	2108.7	2115.2	2125.2	2118.7
157.5°	2156.8	2161.2	2164.7	2179.1	2169.1
160°	2205.0	2209.3	2211.5	2223.6	2215.1
162.5°	2249.6	2249.6	2251.7	2265.4	2255.3
165°	2287.6	2285.5	2285.5	2299.9	2289.8
167.5°	2322.1	2315.7	2315.7	2330.1	2320.0
170°	2348.1	2342.3	2340.1	2354.6	2342.3
172.5°	2366.1	2360.3	2358.1	2372.5	2360.3
175°	2380.4	2374.6	2370.3	2384.7	2372.5
177.5°	2388.3	2382.6	2378.2	2390.5	2378.2
180°	2384.7	2384.7	2384.7	2384.7	2384.7

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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	7.42	8.21	8.45	9.24	10.63	6.98	7.77	8.01	8.80	10.19
	3H	9.08	9.78	10.12	10.83	12.24	8.59	9.30	9.63	10.34	11.75
	4H	9.66	10.33	10.71	11.38	12.80	9.18	9.84	10.23	10.89	12.31
	6H	10.06	10.68	11.12	11.73	13.16	9.57	10.19	10.63	11.24	12.67
	8H	10.16	10.75	11.23	11.82	13.24	9.67	10.26	10.74	11.33	12.75
	12H	10.21	10.77	11.28	11.83	13.28	9.71	10.27	10.78	11.33	12.78
4H	2H	7.87	8.54	8.93	9.59	11.01	7.52	8.19	8.58	9.24	10.65
	3H	9.73	10.29	10.80	11.37	12.80	9.33	9.89	10.40	10.96	12.40
	4H	10.45	10.96	11.52	12.03	13.48	10.03	10.54	11.10	11.61	13.06
	6H	10.96	11.40	12.04	12.49	13.94	10.54	10.98	11.62	12.07	13.51
	8H	11.11	11.52	12.19	12.60	14.07	10.68	11.09	11.76	12.17	13.64
	12H	11.18	11.55	12.28	12.65	14.12	10.74	11.11	11.84	12.21	13.68
8H	4H	10.64	11.05	11.72	12.13	13.59	10.27	10.68	11.35	11.76	13.22
	6H	11.27	11.61	12.37	12.73	14.19	10.89	11.23	12.00	12.36	13.82
	8H	11.49	11.79	12.60	12.90	14.37	11.11	11.40	12.22	12.51	13.99
	12H	11.62	11.88	12.74	12.99	14.50	11.22	11.48	12.33	12.58	14.10
12H	4H	10.62	10.99	11.72	12.09	13.56	10.26	10.63	11.36	11.72	13.19
	6H	11.30	11.60	12.41	12.70	14.18	10.93	11.23	12.04	12.34	13.82
	8H	11.54	11.80	12.65	12.90	14.42	11.17	11.43	12.28	12.53	14.05

END OF REPORT