

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: P903205

Luminaire Tested: DFN2DIP-PN4F0-050D100US830-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P903205
REPORT IS A COMBINATION OF REPORTS P901239 AND P898053
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN4F0-050D100US830-FLLONL
Description: 4 foot, Pentagon Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

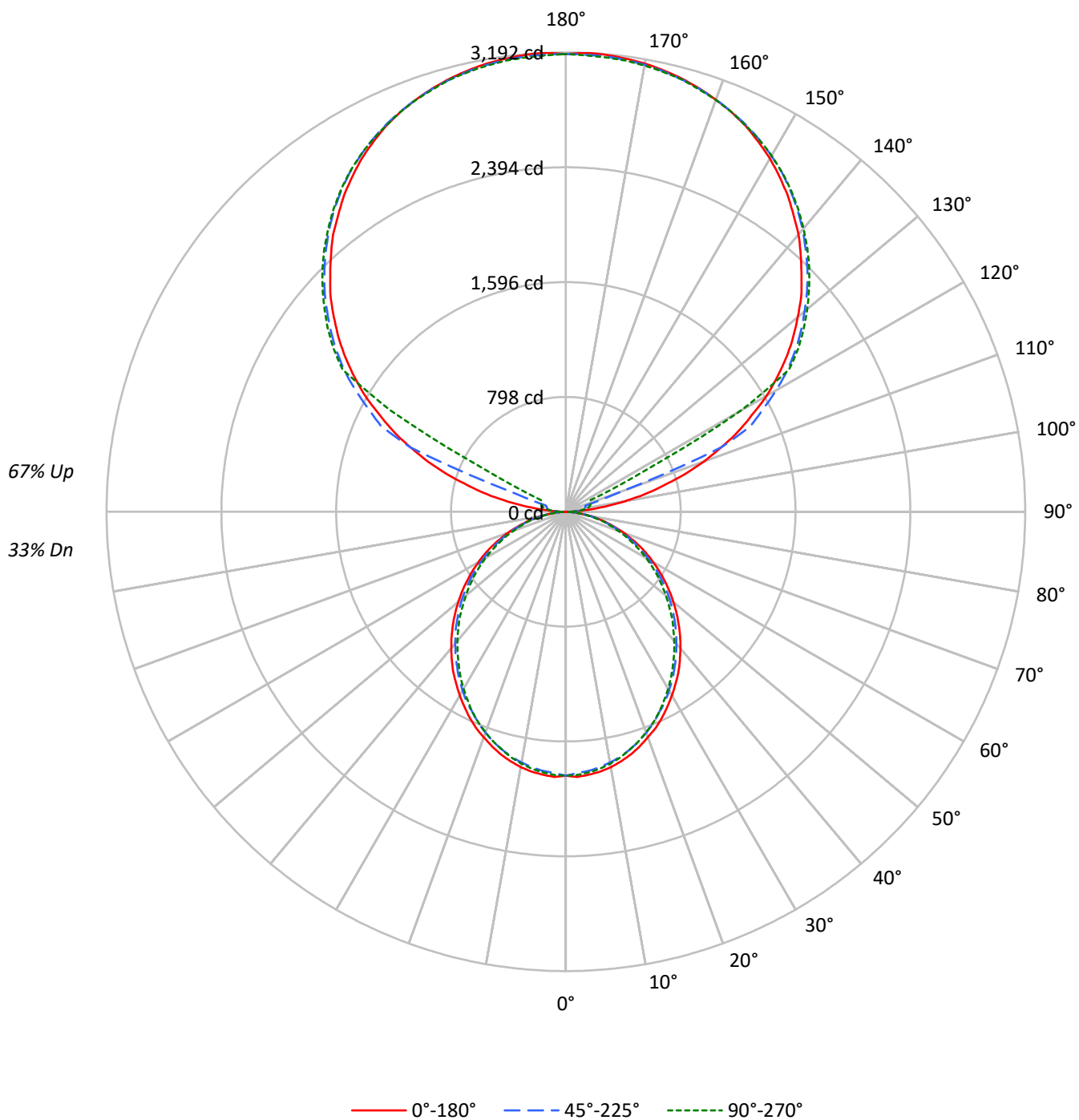
Lumens per Lamp: N/A
Luminaire Lumens: 13996.8 lumens
Efficiency: N/A
Efficacy: 117.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.74' x L: 3.94' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 119
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

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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	103	103	103	103		93	93	93	93		74	74	74		57	57	57		41	41	41
1	94	90	86	83		85	81	78	75		65	63	61		50	48	47		36	35	34
2	86	78	72	67		77	71	66	62		57	53	50		44	41	39		32	30	29
3	78	69	62	56		70	62	56	51		50	46	42		39	36	33		28	26	25
4	71	61	53	47		64	55	49	43		44	40	36		34	31	28		25	23	21
5	65	54	46	40		59	49	42	37		40	35	31		31	27	25		23	20	18
6	60	48	41	35		54	44	37	32		36	31	27		28	24	21		20	18	16
7	56	44	36	30		50	40	33	28		32	27	23		25	22	19		19	16	14
8	51	39	32	27		46	36	29	25		29	24	21		23	19	17		17	15	13
9	48	36	29	24		43	33	26	22		27	22	19		21	18	15		16	13	12
10	45	33	26	21		40	30	24	20		25	20	17		19	16	14		15	12	11

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: 1695 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	172.6	1.2
10°-20°	485.6	3.5
20°-30°	713.7	5.1
30°-40°	828.9	5.9
40°-50°	827.8	5.9
50°-60°	721.8	5.2
60°-70°	533.6	3.8
70°-80°	301.9	2.2
80°-90°	85.3	0.6
90°-100°	104.9	0.7
100°-110°	391.0	2.8
110°-120°	1037.0	7.4
120°-130°	1720.0	12.3
130°-140°	1827.0	13.1
140°-150°	1698.0	12.1
150°-160°	1365.2	9.8
160°-170°	879.7	6.3
170°-180°	302.8	2.2
0°-30°	1371.9	9.8
0°-40°	2200.7	15.7
0°-60°	3750.4	26.8
0°-90°	4671.2	33.4
90°-120°	1532.9	11.0
90°-150°	6778.0	48.4
90°-180°	9326.0	66.6
0°-180°	13996.8	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	28	46	58	62	13
95°	150	74	90	101	99	177
105°	700	769	140	166	175	748
115°	1323	1362	1420	354	189	1303
125°	1871	1901	1945	1961	1968	1669
135°	2316	2352	2373	2396	2392	1789
145°	2686	2684	2723	2739	2728	1680
155°	2958	2937	2965	2978	2960	1363
165°	3116	3103	3110	3126	3110	880
175°	3188	3172	3176	3192	3170	303
180°	3181	3181	3181	3181	3181	

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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°	2.2	27.6	45.9	57.7	62.0
92.5°	57.7	48.4	55.2	59.9	62.0
95°	149.5	73.5	89.6	101.4	99.0
97.5°	269.2	80.6	117.3	124.3	126.6
100°	407.6	92.1	131.2	149.5	154.2
102.5°	559.2	554.9	135.8	161.0	168.1
105°	699.7	768.8	140.5	165.6	174.9
107.5°	863.2	920.6	145.2	170.3	179.6
110°	1019.7	1067.9	402.8	172.8	181.7

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1167.1	1208.3	1169.3	177.1	184.3
115°	1323.4	1362.5	1420.2	354.5	188.9
117.5°	1459.2	1505.2	1544.5	1215.2	612.3
120°	1611.3	1645.7	1687.2	1714.9	1404.1
122.5°	1740.0	1776.9	1823.1	1836.7	1839.2
125°	1871.2	1901.3	1945.0	1961.1	1967.9
127.5°	1990.9	2023.2	2057.9	2080.9	2083.0
130°	2103.8	2140.7	2165.9	2191.2	2189.1
132.5°	2218.8	2248.9	2274.1	2294.8	2292.6
135°	2315.6	2352.5	2373.0	2396.2	2391.6
137.5°	2416.8	2444.4	2467.6	2490.6	2483.7
140°	2515.6	2534.3	2559.4	2580.2	2568.7
142.5°	2598.8	2614.9	2644.7	2663.0	2651.6
145°	2686.2	2683.8	2722.9	2739.0	2727.5
147.5°	2761.9	2755.1	2794.2	2805.7	2796.7
150°	2835.7	2819.6	2856.6	2870.2	2858.7
152.5°	2897.8	2879.5	2914.0	2927.8	2911.7
155°	2957.7	2937.2	2964.8	2978.4	2960.1
157.5°	3006.1	2987.8	3008.5	3024.6	3006.1
160°	3047.6	3033.7	3047.6	3061.3	3045.2
162.5°	3084.2	3070.5	3082.0	3098.1	3077.4
165°	3116.4	3102.8	3109.6	3125.8	3109.6
167.5°	3141.9	3127.9	3135.1	3151.2	3130.4
170°	3162.6	3148.8	3153.4	3169.5	3148.8
172.5°	3176.3	3162.6	3167.3	3183.4	3162.6
175°	3187.8	3171.7	3176.3	3192.5	3169.5
177.5°	3192.5	3176.3	3178.8	3194.9	3174.1
180°	3181.0	3181.0	3181.0	3181.0	3181.0

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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	6.52	7.25	7.61	8.34	9.83	6.08	6.81	7.17	7.90	9.39
	3H	8.17	8.83	9.27	9.92	11.43	7.69	8.34	8.78	9.44	10.94
	4H	8.76	9.38	9.86	10.47	11.99	8.27	8.89	9.38	9.99	11.50
	6H	9.15	9.72	10.27	10.82	12.35	8.66	9.23	9.78	10.33	11.86
	8H	9.25	9.80	10.37	10.91	12.43	8.76	9.30	9.88	10.42	11.94
	12H	9.30	9.81	10.42	10.92	12.47	8.80	9.31	9.92	10.42	11.97
4H	2H	6.96	7.58	8.08	8.68	10.19	6.61	7.23	7.73	8.33	9.84
	3H	8.82	9.34	9.94	10.46	11.99	8.42	8.94	9.54	10.06	11.59
	4H	9.53	10.01	10.66	11.12	12.67	9.11	9.59	10.24	10.70	12.25
	6H	10.04	10.45	11.17	11.59	13.12	9.62	10.03	10.75	11.16	12.70
	8H	10.19	10.57	11.32	11.70	13.25	9.76	10.14	10.89	11.27	12.83
	12H	10.26	10.60	11.41	11.74	13.30	9.82	10.16	10.97	11.30	12.86
8H	4H	9.72	10.10	10.85	11.23	12.78	9.35	9.73	10.48	10.86	12.41
	6H	10.35	10.66	11.50	11.83	13.38	9.97	10.29	11.12	11.46	13.01
	8H	10.57	10.84	11.73	11.99	13.56	10.18	10.46	11.34	11.61	13.18
	12H	10.70	10.94	11.86	12.08	13.69	10.29	10.54	11.46	11.68	13.29
12H	4H	9.70	10.04	10.85	11.18	12.74	9.34	9.68	10.48	10.82	12.38
	6H	10.38	10.65	11.53	11.80	13.37	10.01	10.29	11.17	11.44	13.01
	8H	10.61	10.86	11.78	12.00	13.61	10.24	10.48	11.40	11.63	13.24

END OF REPORT