

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: P903206

Luminaire Tested: DFN2DIP-PN4F0-050D100US830-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P903206
REPORT IS A COMBINATION OF REPORTS P899720 AND P896497
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN4F0-050D100US830-RLLFLL
Description: 4 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

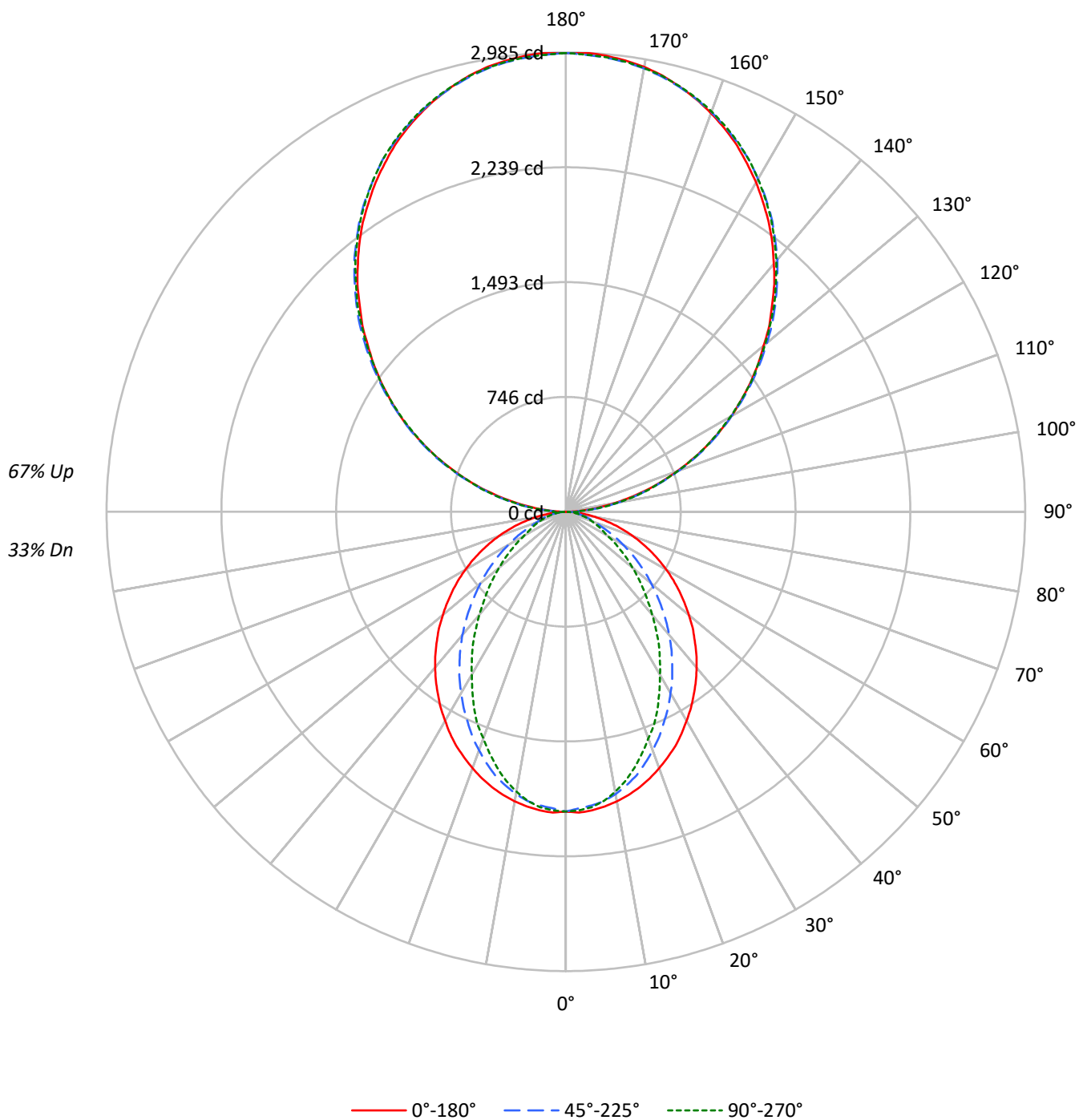
Lumens per Lamp: N/A
Luminaire Lumens: 12347.3 lumens
Efficiency: N/A
Efficacy: 103.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.74' x L: 3.94' x H: 0.1')
CIE Type: Semi-Indirect

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	56	56	56	40	40	40
1	94	90	86	83	85	81	78	75	65	63	61	50	48	47	36	35	34
2	86	79	73	68	77	71	67	62	57	54	51	44	42	40	32	31	29
3	79	70	63	57	71	63	57	52	51	46	43	39	36	34	29	27	25
4	72	62	54	49	65	56	50	45	45	41	37	35	32	29	26	24	22
5	66	55	47	42	59	50	43	38	40	36	32	32	28	26	23	21	19
6	61	49	42	36	55	45	38	33	36	32	28	29	25	23	21	19	17
7	56	45	37	32	51	41	34	29	33	28	25	26	23	20	19	17	15
8	52	40	33	28	47	37	30	26	30	25	22	24	20	18	18	16	14
9	49	37	30	25	44	34	27	23	28	23	20	22	19	16	17	14	13
10	45	34	27	22	41	31	25	21	25	21	18	20	17	15	15	13	11

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1422	1422	1422
5°	1424	1399	1408
10°	1410	1372	1363
15°	1391	1327	1292
20°	1365	1265	1206
25°	1339	1195	1122
30°	1303	1123	1015
35°	1269	1046	922
40°	1233	966	815
45°	1193	878	718
50°	1150	788	623
55°	1106	693	532
60°	1055	593	438
65°	996	491	395
70°	925	396	357
75°	835	350	326
80°	706	294	283
85°	492	197	215

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 2335 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	182.5	1.5
10°-20°	501.1	4.1
20°-30°	703.6	5.7
30°-40°	766.9	6.2
40°-50°	704.9	5.7
50°-60°	553.6	4.5
60°-70°	360.3	2.9
70°-80°	185.5	1.5
80°-90°	55.8	0.5
90°-100°	184.5	1.5
100°-110°	586.1	4.7
110°-120°	1003.0	8.1
120°-130°	1319.1	10.7
130°-140°	1480.6	12.0
140°-150°	1451.9	11.8
150°-160°	1217.9	9.9
160°-170°	807.7	6.5
170°-180°	282.3	2.3
0°-30°	1387.2	11.2
0°-40°	2154.2	17.4
0°-60°	3412.7	27.6
0°-90°	4014.3	32.5
90°-120°	1773.5	14.4
90°-150°	6025.1	48.8
90°-180°	8333.0	67.5
0°-180°	12347.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1948	1948	1948	1948	1948	
5°	1948	1939	1916	1932	1927	185
15°	1853	1833	1773	1740	1722	522
25°	1682	1625	1509	1437	1410	773
35°	1449	1359	1204	1093	1054	907
45°	1185	1066	881	756	714	915
55°	901	763	573	467	434	805
65°	608	465	307	247	242	603
75°	324	201	141	129	127	343
85°	76	39	34	34	34	87
90°	3	32	88	83	85	12
95°	131	156	161	161	156	146
105°	541	548	554	558	558	571
115°	1006	1021	1016	1014	1006	996
125°	1464	1486	1479	1471	1468	1308
135°	1894	1921	1927	1924	1917	1464
145°	2299	2317	2331	2334	2324	1436
155°	2629	2636	2644	2656	2648	1210
165°	2860	2857	2857	2875	2862	807
175°	2976	2968	2963	2981	2966	283
180°	2981	2981	2981	2981	2981	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1947.8	1947.8	1947.8	1947.8	1947.8
2.5°	1956.5	1947.8	1928.3	1946.1	1942.5
5°	1947.8	1939.0	1916.0	1931.8	1926.7
7.5°	1931.8	1921.4	1896.7	1903.7	1894.8
10°	1910.7	1898.4	1863.2	1857.8	1847.3
12.5°	1884.3	1868.5	1820.8	1810.3	1790.8
15°	1852.6	1833.2	1773.3	1739.8	1722.2
17.5°	1815.5	1787.3	1713.3	1674.5	1646.2
20°	1773.3	1738.0	1649.8	1605.9	1567.0
22.5°	1727.5	1686.9	1584.6	1524.8	1498.4
25°	1681.6	1625.1	1508.8	1436.6	1410.0
27.5°	1627.0	1567.0	1438.3	1355.5	1314.9
30°	1568.9	1501.8	1360.7	1270.9	1223.2
32.5°	1512.4	1431.3	1286.9	1181.0	1136.9
35°	1449.0	1359.1	1204.0	1092.9	1054.0
37.5°	1387.2	1290.2	1126.4	1004.7	960.7
40°	1322.0	1216.4	1045.2	920.1	874.3
42.5°	1255.1	1142.3	964.2	833.7	789.8
45°	1184.6	1066.4	881.4	756.1	713.8
47.5°	1117.6	992.5	802.1	676.8	638.1
50°	1043.6	918.4	724.5	602.8	565.9
52.5°	971.2	839.0	650.4	534.1	500.7
55°	900.7	763.2	572.8	467.1	433.7
57.5°	828.5	687.5	504.2	405.5	377.2
60°	754.4	613.4	431.8	342.0	313.8
62.5°	682.2	541.2	370.1	285.6	271.5
65°	608.1	465.3	306.7	246.9	241.5
67.5°	537.6	394.8	246.9	216.8	211.5
70°	463.6	326.1	204.4	186.8	179.7
72.5°	393.1	262.6	171.0	156.9	153.4
75°	324.3	200.9	141.0	128.7	127.0
77.5°	255.6	142.7	111.1	104.0	100.4
80°	192.1	102.3	84.5	77.6	77.6
82.5°	133.9	68.8	58.2	54.6	54.6
85°	75.8	38.7	33.5	33.5	33.5
87.5°	28.3	14.0	14.0	12.3	12.3
90°	2.7	32.3	88.0	82.7	85.4
92.5°	55.7	75.5	78.2	80.9	80.9
95°	131.2	156.4	160.9	160.9	156.4
97.5°	218.4	241.8	251.7	251.7	251.7
100°	319.1	339.7	346.9	346.9	344.2
102.5°	425.1	440.4	450.3	452.9	450.3
105°	541.0	548.2	553.6	558.1	558.1
107.5°	656.0	666.8	666.8	668.6	656.0
110°	767.5	781.8	781.8	781.8	774.7

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	887.9	903.1	900.5	893.2	887.9
115°	1006.5	1020.9	1016.4	1013.7	1006.5
117.5°	1124.3	1144.1	1131.4	1124.3	1117.0
120°	1242.8	1262.6	1242.8	1242.8	1234.8
122.5°	1350.7	1375.8	1363.3	1356.1	1350.7
125°	1464.0	1486.4	1479.2	1471.1	1468.5
127.5°	1574.5	1602.3	1592.4	1581.7	1574.5
130°	1677.8	1710.1	1705.7	1700.3	1690.4
132.5°	1793.8	1818.9	1820.7	1808.2	1800.9
135°	1893.5	1921.4	1926.7	1924.1	1916.8
137.5°	2005.0	2027.4	2031.9	2030.1	2019.3
140°	2102.9	2125.3	2138.0	2138.0	2128.1
142.5°	2203.6	2226.0	2233.2	2235.9	2226.0
145°	2298.8	2316.8	2331.2	2333.8	2323.9
147.5°	2384.2	2406.7	2417.4	2422.0	2412.1
150°	2472.3	2487.6	2497.5	2505.5	2497.5
152.5°	2550.4	2565.7	2578.3	2588.2	2578.3
155°	2628.7	2635.8	2643.9	2656.5	2648.4
157.5°	2696.0	2701.4	2705.9	2723.9	2711.3
160°	2756.3	2761.6	2764.3	2779.6	2768.8
162.5°	2812.0	2812.0	2814.6	2831.7	2819.1
165°	2859.6	2856.8	2856.8	2874.8	2862.3
167.5°	2902.7	2894.6	2894.6	2912.6	2900.0
170°	2935.1	2927.9	2925.2	2943.2	2927.9
172.5°	2957.5	2950.3	2947.6	2965.6	2950.3
175°	2975.5	2968.3	2963.0	2980.9	2965.6
177.5°	2985.4	2978.2	2972.8	2988.0	2972.8
180°	2980.9	2980.9	2980.9	2980.9	2980.9

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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	6.48	7.18	7.58	8.27	9.78	2.44	3.15	3.54	4.24	5.74
	3H	8.15	8.78	9.25	9.88	11.40	3.62	4.25	4.73	5.35	6.87
	4H	8.75	9.35	9.87	10.45	11.98	4.07	4.66	5.18	5.77	7.29
	6H	9.17	9.72	10.29	10.82	12.36	4.38	4.93	5.51	6.04	7.57
	8H	9.29	9.82	10.42	10.94	12.47	4.47	4.99	5.60	6.11	7.64
	12H	9.35	9.85	10.49	10.96	12.52	4.51	5.00	5.64	6.12	7.67
4H	2H	6.48	7.08	7.60	8.18	9.70	3.02	3.62	4.15	4.72	6.25
	3H	8.30	8.80	9.43	9.93	11.46	4.36	4.86	5.49	5.99	7.53
	4H	8.99	9.45	10.12	10.56	12.12	4.91	5.36	6.04	6.48	8.04
	6H	9.50	9.89	10.64	11.03	12.58	5.32	5.71	6.46	6.85	8.40
	8H	9.67	10.04	10.81	11.17	12.74	5.45	5.81	6.59	6.94	8.51
	12H	9.77	10.10	10.92	11.24	12.81	5.51	5.84	6.66	6.98	8.55
8H	4H	8.95	9.31	10.09	10.45	12.01	5.18	5.54	6.32	6.68	8.24
	6H	9.51	9.81	10.67	10.99	12.55	5.69	5.99	6.85	7.17	8.73
	8H	9.73	9.99	10.90	11.15	12.73	5.88	6.15	7.05	7.30	8.89
	12H	9.87	10.10	11.04	11.25	12.87	6.00	6.23	7.17	7.38	9.00
12H	4H	8.89	9.22	10.05	10.37	11.94	5.18	5.51	6.33	6.65	8.22
	6H	9.49	9.75	10.65	10.90	12.49	5.74	6.01	6.91	7.16	8.74
	8H	9.70	9.94	10.87	11.09	12.70	5.95	6.18	7.12	7.33	8.95

END OF REPORT