

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: P903031

Luminaire Tested: DFN2DIP-PN3F0-050D090US830-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P903031
REPORT IS A COMBINATION OF REPORTS P901120 AND P897955
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN3F0-050D090US830-RLLONL
Description: 3 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

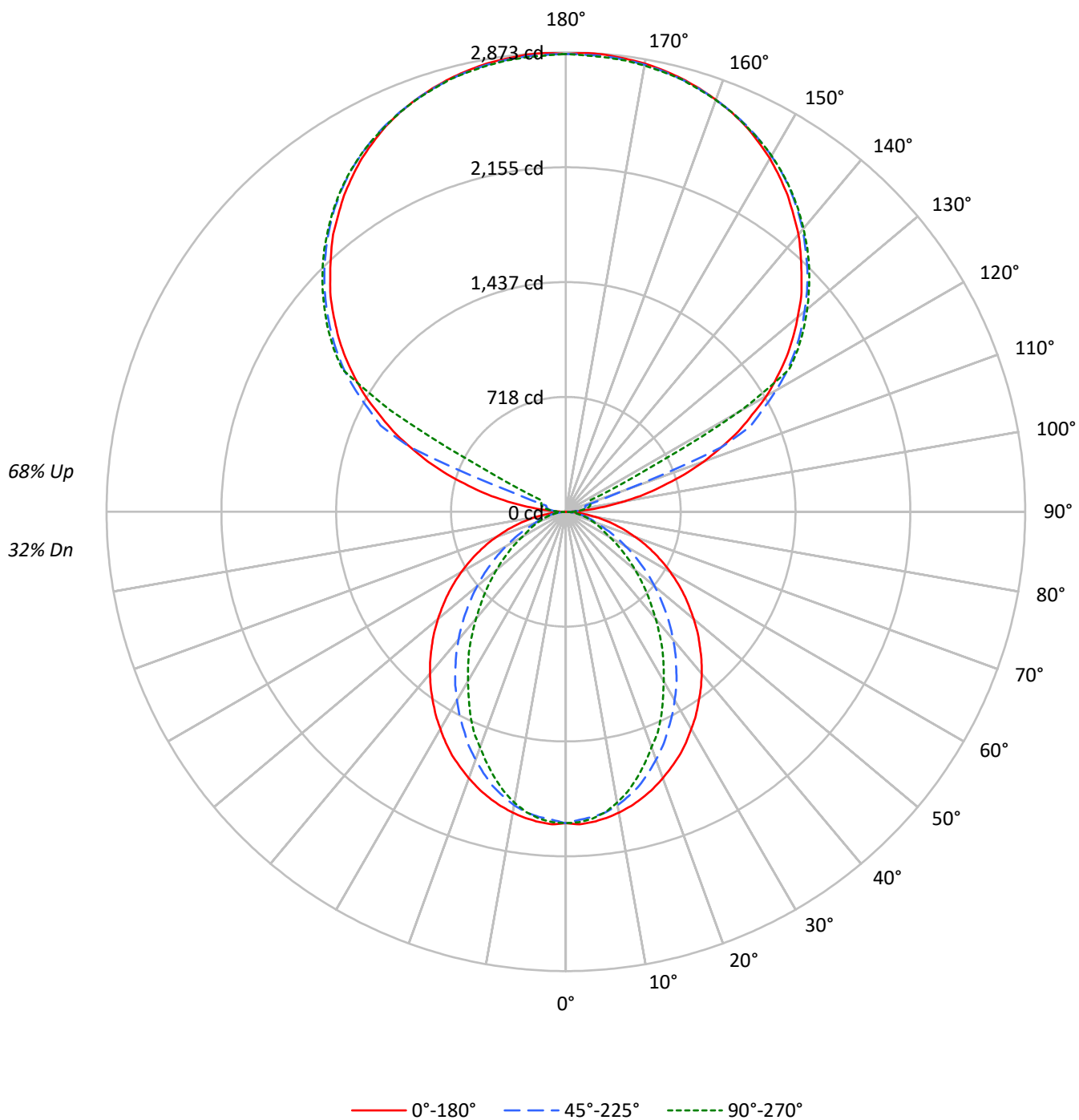
Lumens per Lamp: N/A
Luminaire Lumens: 12403.9 lumens
Efficiency: N/A
Efficacy: 106.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.96' x L: 3.11' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 116.2
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

TEST NUMBER: P903031

CATALOG NUMBER: DFN2DIP-PN3F0-050D090US830-RLLONL

Luminous Intensity Polar Plot



TEST NUMBER: P903031

CATALOG NUMBER: DFN2DIP-PN3F0-050D090US830-RLLONL

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	66	62	57	54	51	44	42	40	32	30	29
3	79	70	63	57	71	63	57	52	51	46	43	39	36	34	28	27	25
4	72	62	54	49	65	56	50	45	45	40	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	22	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	18	16	16	14	13
10	45	34	27	22	41	31	25	21	25	21	18	20	17	14	15	13	11

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2277	2277	2277
5°	2279	2239	2254
10°	2255	2194	2180
15°	2223	2120	2066
20°	2180	2018	1926
25°	2137	1905	1790
30°	2079	1789	1620
35°	2022	1664	1469
40°	1964	1535	1297
45°	1897	1392	1141
50°	1828	1248	989
55°	1755	1095	843
60°	1671	934	693
65°	1574	771	623
70°	1456	619	562
75°	1308	542	509
80°	1094	450	438
85°	744	293	324

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 1930 cd/sqm

TEST NUMBER: P903031

CATALOG NUMBER: DFN2DIP-PN3F0-050D090US830-RLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	182.5	1.5
10°-20°	501.1	4.0
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°	52.4	0.4
90°-100°	94.4	0.8
100°-110°	351.9	2.8
110°-120°	933.3	7.5
120°-130°	1548.0	12.5
130°-140°	1644.3	13.3
140°-150°	1528.2	12.3
150°-160°	1228.6	9.9
160°-170°	791.7	6.4
170°-180°	272.5	2.2
0°-30°	1387.2	11.2
0°-40°	2154.2	17.4
0°-60°	3412.7	27.5
0°-90°	4010.9	32.3
90°-120°	1379.6	11.1
90°-150°	6100.2	49.2
90°-180°	8393.0	67.7
0°-180°	12403.9	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°	2	25	41	52	56	12
95°	135	66	81	91	89	159
105°	630	692	126	149	157	673
115°	1191	1226	1278	319	170	1173
125°	1684	1711	1750	1765	1771	1502
135°	2084	2117	2136	2157	2152	1610
145°	2418	2415	2451	2465	2455	1512
155°	2662	2644	2668	2681	2664	1227
165°	2805	2792	2799	2813	2799	792
175°	2869	2854	2859	2873	2852	273
180°	2863	2863	2863	2863	2863	

TEST NUMBER: P903031

CATALOG NUMBER: DFN2DIP-PN3F0-050D090US830-RLLONL

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°	2.0	24.9	41.3	51.9	55.8
92.5°	51.9	43.5	49.7	53.9	55.8
95°	134.6	66.2	80.7	91.2	89.1
97.5°	242.3	72.6	105.6	111.9	113.9
100°	366.7	82.9	118.1	134.6	138.7
102.5°	503.3	499.4	122.2	144.9	151.3
105°	629.7	692.0	126.4	149.1	157.4
107.5°	776.8	828.5	130.6	153.3	161.6
110°	917.8	961.1	362.6	155.4	163.6

TEST NUMBER: P903031

CATALOG NUMBER: DFN2DIP-PN3F0-050D090US830-RLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1050.4	1087.5	1052.3	159.4	165.8
115°	1191.1	1226.2	1278.2	319.1	169.9
117.5°	1313.3	1354.7	1390.1	1093.7	551.0
120°	1450.1	1481.1	1518.5	1543.3	1263.7
122.5°	1566.0	1599.2	1640.8	1653.0	1655.3
125°	1684.0	1711.1	1750.5	1765.0	1771.1
127.5°	1791.8	1820.8	1852.1	1872.7	1874.7
130°	1893.4	1926.7	1949.3	1972.1	1970.2
132.5°	1997.0	2024.0	2046.6	2065.4	2063.4
135°	2084.1	2117.2	2135.7	2156.6	2152.5
137.5°	2175.1	2199.9	2220.8	2241.5	2235.3
140°	2264.1	2280.9	2303.5	2322.1	2311.9
142.5°	2338.9	2353.4	2380.2	2396.7	2386.4
145°	2417.6	2415.4	2450.6	2465.1	2454.8
147.5°	2485.8	2479.6	2514.8	2525.2	2517.0
150°	2552.2	2537.7	2570.9	2583.1	2572.9
152.5°	2608.0	2591.5	2622.5	2635.1	2620.6
155°	2661.9	2643.5	2668.2	2680.6	2664.1
157.5°	2705.5	2689.0	2707.6	2722.2	2705.5
160°	2742.8	2730.3	2742.8	2755.1	2740.6
162.5°	2775.8	2763.4	2773.8	2788.3	2769.7
165°	2804.8	2792.5	2798.7	2813.2	2798.7
167.5°	2827.7	2815.2	2821.5	2836.0	2817.4
170°	2846.4	2833.8	2838.0	2852.5	2833.8
172.5°	2858.7	2846.4	2850.5	2865.0	2846.4
175°	2869.0	2854.5	2858.7	2873.2	2852.5
177.5°	2873.2	2858.7	2860.9	2875.4	2856.8
180°	2862.9	2862.9	2862.9	2862.9	2862.9

TEST NUMBER: P903031

CATALOG NUMBER: DFN2DIP-PN3F0-050D090US830-RLONL

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	8.05	8.75	9.15	9.84	11.35	4.01	4.72	5.11	5.81	7.32
	3H	9.71	10.34	10.82	11.44	12.96	5.19	5.81	6.29	6.92	8.44
	4H	10.31	10.90	11.43	12.01	13.54	5.63	6.22	6.75	7.33	8.85
	6H	10.72	11.27	11.84	12.37	13.91	5.94	6.48	7.06	7.59	9.13
	8H	10.84	11.36	11.97	12.48	14.01	6.02	6.54	7.15	7.66	9.20
	12H	10.89	11.39	12.03	12.50	14.06	6.06	6.55	7.19	7.67	9.22
4H	2H	8.05	8.64	9.17	9.75	11.28	4.59	5.19	5.72	6.29	7.82
	3H	9.86	10.35	10.99	11.48	13.02	5.92	6.42	7.05	7.55	9.09
	4H	10.54	11.00	11.68	12.12	13.68	6.46	6.92	7.59	8.03	9.59
	6H	11.04	11.43	12.18	12.58	14.13	6.86	7.26	8.01	8.40	9.95
	8H	11.21	11.58	12.35	12.71	14.28	6.99	7.35	8.13	8.49	10.05
	12H	11.30	11.63	12.46	12.77	14.35	7.04	7.37	8.20	8.52	10.09
8H	4H	10.50	10.86	11.64	12.00	13.56	6.73	7.09	7.87	8.22	9.79
	6H	11.05	11.35	12.21	12.53	14.09	7.23	7.53	8.39	8.71	10.27
	8H	11.26	11.53	12.43	12.68	14.27	7.42	7.68	8.58	8.83	10.42
	12H	11.39	11.62	12.56	12.78	14.39	7.53	7.76	8.70	8.91	10.53
12H	4H	10.44	10.77	11.60	11.92	13.49	6.72	7.05	7.88	8.20	9.77
	6H	11.03	11.29	12.19	12.44	14.03	7.28	7.54	8.45	8.70	10.28
	8H	11.24	11.47	12.41	12.62	14.24	7.48	7.71	8.65	8.86	10.48