

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: P904433

Luminaire Tested: DFN2DIP-TR3F0-050D080US830-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P904433
REPORT IS A COMBINATION OF REPORTS P901865 AND P898751
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR3F0-050D080US830-FLLONL
Description: 3 foot, Triangle Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

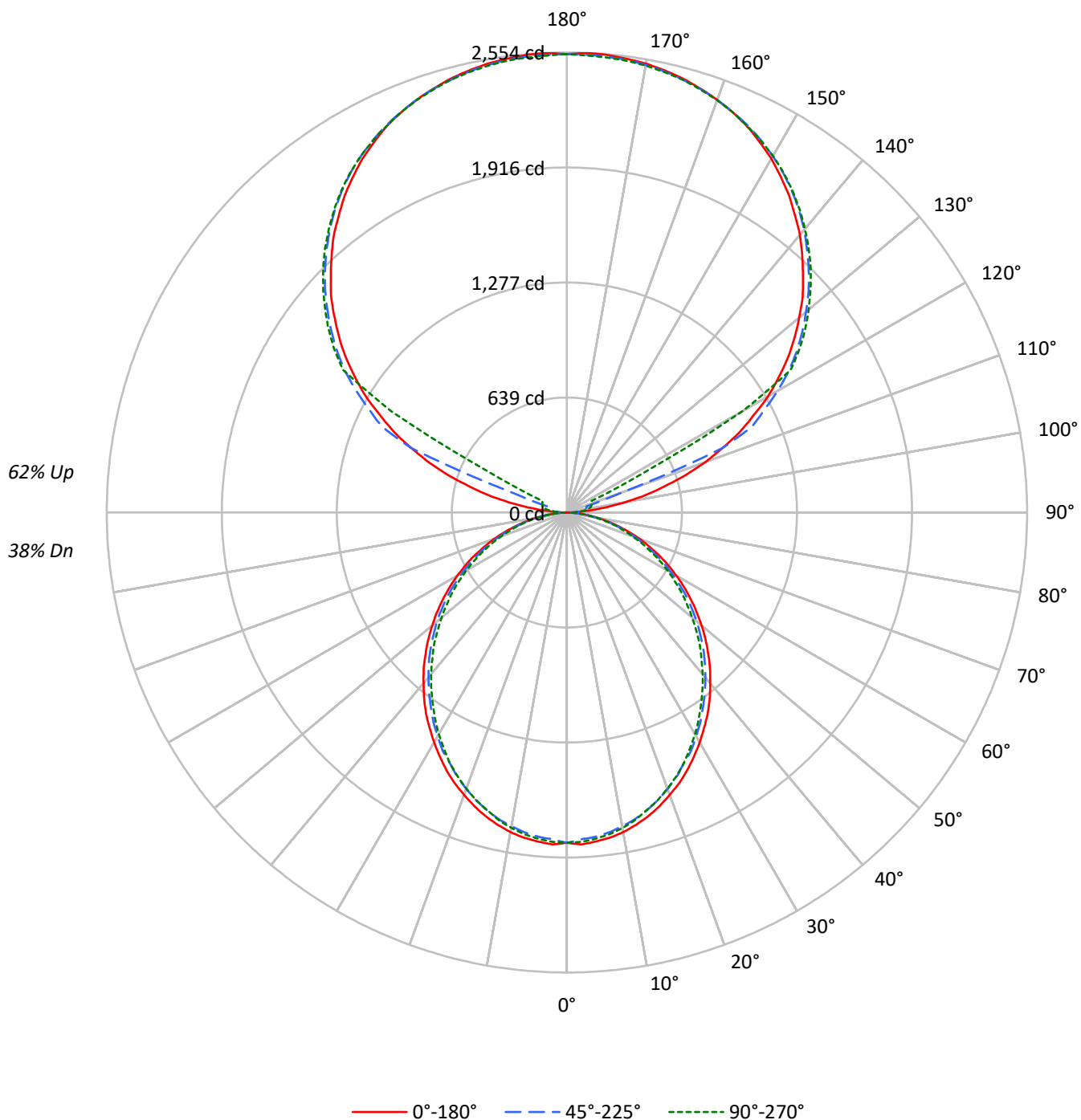
Lumens per Lamp: N/A
Luminaire Lumens: 12130.5 lumens
Efficiency: N/A
Efficacy: 113.9 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.74' x L: 3.16' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 106.5
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9933
Total Harmonic Distortion (THDi): 0.066
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P904433

CATALOG NUMBER: DFN2DIP-TR3F0-050D080US830-FLLONL

Luminous Intensity Polar Plot



TEST NUMBER: P904433

CATALOG NUMBER: DFN2DIP-TR3F0-050D080US830-FLONL

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	104	104	104	104	95	95	95	95	77	77	77	61	61	61	46	46	46
1	95	91	87	84	86	83	80	77	67	65	63	53	52	50	40	39	38
2	87	79	73	68	78	72	67	63	59	55	52	47	44	42	35	34	32
3	79	70	63	57	71	64	57	52	52	48	44	41	38	36	31	29	28
4	72	62	54	48	65	56	50	44	46	41	37	37	33	30	28	26	24
5	66	55	47	41	60	50	43	38	41	36	32	33	29	26	25	23	21
6	61	49	41	36	55	45	38	33	37	32	28	30	26	23	23	20	18
7	56	44	36	31	51	41	34	29	34	28	25	27	23	20	21	18	16
8	52	40	33	27	47	37	30	25	31	25	22	25	21	18	19	16	14
9	49	37	29	24	44	34	27	23	28	23	19	23	19	16	18	15	13
10	45	33	26	22	41	31	25	20	26	21	17	21	17	15	16	14	12

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2285	2285	2285
5°	2287	2251	2267
10°	2268	2219	2235
15°	2233	2181	2185
20°	2187	2128	2135
25°	2141	2065	2076
30°	2083	2007	2003
35°	2028	1938	1925
40°	1962	1869	1851
45°	1895	1799	1775
50°	1822	1726	1687
55°	1745	1641	1606
60°	1658	1541	1513
65°	1563	1437	1403
70°	1442	1310	1285
75°	1275	1158	1173
80°	1073	963	964
85°	758	634	622

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1895 cd/sqm

TEST NUMBER: P904433

CATALOG NUMBER: DFN2DIP-TR3F0-050D080US830-FLLONL

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	

TEST NUMBER: P904433

CATALOG NUMBER: DFN2DIP-TR3F0-050D080US830-FLLONL

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

TEST NUMBER: P904433

CATALOG NUMBER: DFN2DIP-TR3F0-050D080US830-FLLONL

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	8.92	9.69	9.97	10.75	12.17	8.50	9.26	9.55	10.32	11.74
	3H	10.57	11.26	11.63	12.32	13.76	10.10	10.79	11.16	11.85	13.30
	4H	11.15	11.80	12.22	12.86	14.31	10.68	11.33	11.75	12.39	13.85
	6H	11.53	12.13	12.61	13.20	14.67	11.06	11.66	12.14	12.73	14.20
	8H	11.63	12.20	12.72	13.29	14.75	11.16	11.73	12.25	12.82	14.28
	12H	11.67	12.22	12.76	13.29	14.78	11.20	11.74	12.29	12.82	14.30
4H	2H	9.37	10.02	10.45	11.09	12.54	9.03	9.68	10.11	10.75	12.20
	3H	11.22	11.76	12.30	12.85	14.32	10.83	11.37	11.91	12.46	13.93
	4H	11.92	12.42	13.01	13.50	14.99	11.52	12.02	12.61	13.10	14.59
	6H	12.42	12.85	13.52	13.96	15.44	12.02	12.45	13.12	13.55	15.03
	8H	12.56	12.96	13.66	14.06	15.56	12.16	12.56	13.26	13.66	15.15
	12H	12.63	12.99	13.74	14.10	15.60	12.21	12.58	13.33	13.69	15.19
8H	4H	12.11	12.51	13.20	13.60	15.10	11.75	12.15	12.85	13.25	14.74
	6H	12.72	13.05	13.84	14.19	15.68	12.36	12.69	13.48	13.83	15.33
	8H	12.94	13.22	14.06	14.35	15.86	12.57	12.86	13.70	13.98	15.49
	12H	13.06	13.31	14.19	14.43	15.98	12.68	12.93	13.81	14.05	15.60
12H	4H	12.09	12.45	13.20	13.56	15.06	11.74	12.10	12.85	13.21	14.71
	6H	12.75	13.04	13.88	14.16	15.67	12.40	12.69	13.53	13.81	15.32
	8H	12.98	13.23	14.11	14.35	15.90	12.63	12.88	13.76	14.00	15.55