

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: P923727

Luminaire Tested: DFN2DIP-TR4F0-060D080US940-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P923727
REPORT IS A COMBINATION OF REPORTS P901965 AND P898849
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR4F0-060D080US940-FLLONL
Description: 4 foot, Triangle Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

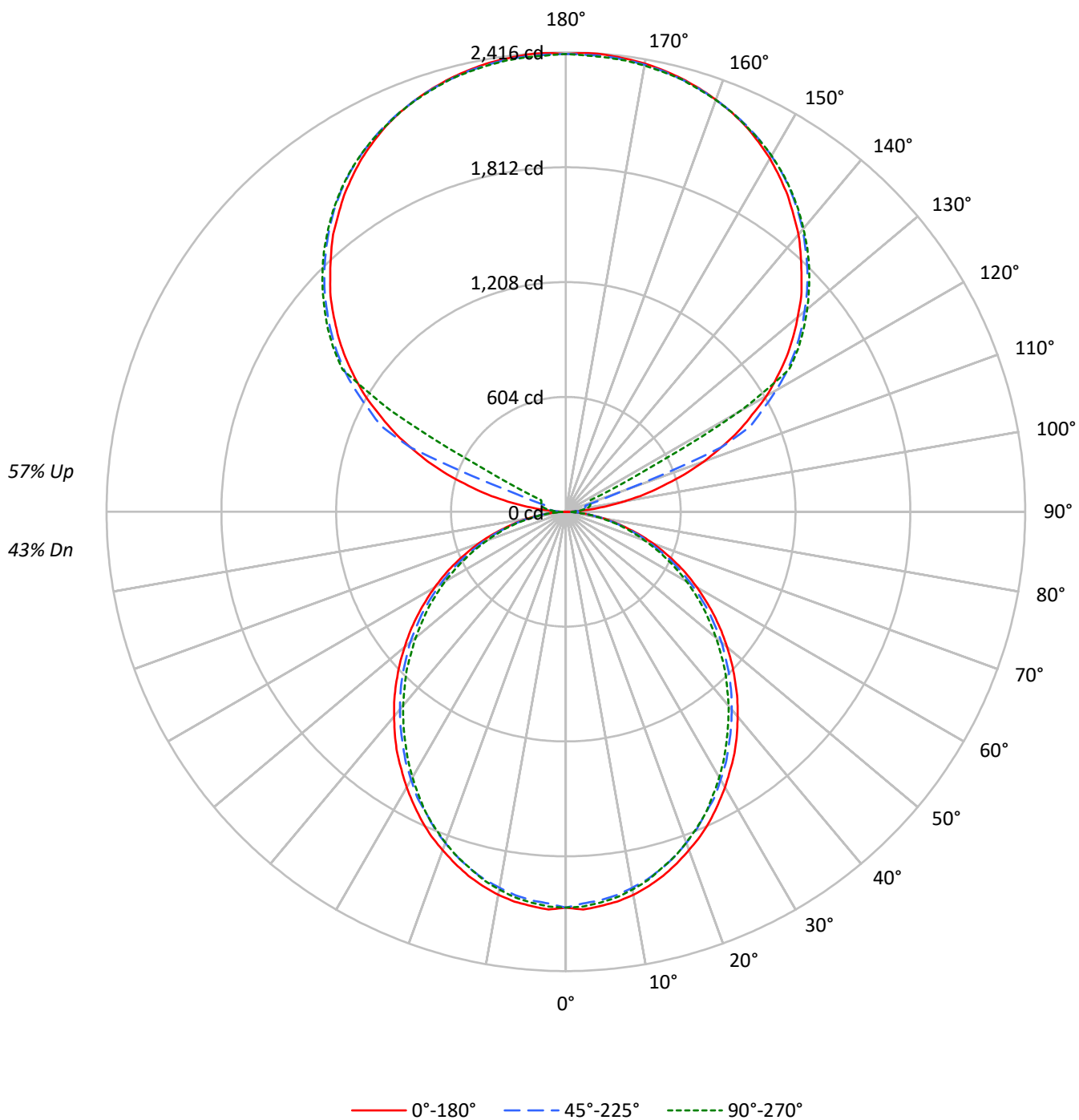
Lumens per Lamp: N/A
Luminaire Lumens: 12359.1 lumens
Efficiency: N/A
Efficacy: 109.9 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.43' x L: 3.96' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 112.5
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9781
Total Harmonic Distortion (THDi): 0.075
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	105	105	105	105	96	96	96	96	79	79	79	64	64	64	50	50	50
1	96	92	88	85	88	84	81	78	70	67	65	56	55	53	44	43	42
2	88	80	74	69	80	74	68	64	61	57	54	49	47	44	39	37	35
3	80	71	63	58	73	65	58	53	54	49	45	44	40	38	34	32	30
4	73	62	55	49	66	57	50	45	48	43	39	39	35	32	31	28	26
5	67	56	48	42	61	51	44	39	43	37	33	35	31	28	28	25	23
6	62	50	42	36	56	46	39	34	38	33	29	31	27	24	25	22	20
7	57	45	37	32	52	41	34	29	35	29	25	29	25	22	23	20	18
8	53	41	33	28	48	38	31	26	32	26	23	26	22	19	21	18	16
9	49	37	30	25	45	34	28	23	29	24	20	24	20	17	19	16	14
10	46	34	27	22	42	31	25	21	27	22	18	22	18	16	18	15	13

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1654	1654	1654
5°	1657	1631	1642
10°	1643	1609	1619
15°	1619	1582	1585
20°	1586	1545	1549
25°	1554	1501	1508
30°	1513	1460	1456
35°	1475	1412	1400
40°	1427	1363	1348
45°	1380	1314	1294
50°	1328	1263	1231
55°	1274	1204	1174
60°	1213	1133	1108
65°	1146	1060	1031
70°	1061	971	947
75°	943	865	870
80°	801	729	723
85°	579	494	479

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 1380 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	195.9	1.6
10°-20°	551.3	4.5
20°-30°	810.2	6.6
30°-40°	941.0	7.6
40°-50°	939.8	7.6
50°-60°	819.5	6.6
60°-70°	605.8	4.9
70°-80°	342.7	2.8
80°-90°	94.7	0.8
90°-100°	79.4	0.6
100°-110°	295.9	2.4
110°-120°	784.9	6.4
120°-130°	1301.8	10.5
130°-140°	1382.8	11.2
140°-150°	1285.1	10.4
150°-160°	1033.2	8.4
160°-170°	665.8	5.4
170°-180°	229.2	1.9
0°-30°	1557.4	12.6
0°-40°	2498.4	20.2
0°-60°	4257.8	34.5
0°-90°	5301.0	42.9
90°-120°	1160.2	9.4
90°-150°	5129.9	41.5
90°-180°	7058.0	57.1
0°-180°	12359.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2082	2082	2082	2082	2082	
5°	2082	2074	2052	2068	2064	198
15°	1982	1970	1944	1952	1942	558
25°	1794	1778	1744	1748	1744	825
35°	1548	1528	1495	1483	1473	966
45°	1259	1245	1215	1193	1185	972
55°	953	941	917	893	883	852
65°	643	631	611	592	583	635
75°	336	332	322	310	314	359
85°	82	80	78	72	70	91
90°	2	21	35	44	47	11
95°	113	56	68	77	75	134
105°	530	582	106	125	132	566
115°	1002	1031	1075	268	143	986
125°	1416	1439	1472	1484	1489	1263
135°	1753	1780	1796	1814	1810	1354
145°	2033	2031	2061	2073	2064	1272
155°	2238	2223	2244	2254	2240	1032
165°	2359	2348	2354	2366	2354	666
175°	2413	2400	2404	2416	2399	230
180°	2408	2408	2408	2408	2408	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2081.8	2081.8	2081.8	2081.8	2081.8
2.5°	2093.9	2083.9	2061.8	2081.8	2078.0
5°	2081.8	2073.9	2051.8	2067.8	2064.0
7.5°	2067.8	2055.9	2033.8	2050.0	2045.9
10°	2045.9	2031.9	2007.9	2023.8	2017.9
12.5°	2015.8	2003.9	1979.9	1989.9	1985.8
15°	1981.7	1969.9	1943.8	1951.9	1941.9
17.5°	1939.7	1927.9	1901.8	1911.6	1901.8
20°	1893.6	1881.8	1853.7	1859.7	1851.8
22.5°	1847.8	1829.7	1803.6	1803.6	1799.6
25°	1793.6	1777.7	1743.7	1747.5	1743.7
27.5°	1733.5	1719.5	1693.5	1687.7	1677.7
30°	1673.7	1657.4	1627.5	1621.6	1613.5
32.5°	1609.4	1597.6	1565.5	1553.4	1545.3
35°	1547.5	1527.5	1495.4	1483.3	1473.3
37.5°	1477.4	1459.3	1427.3	1413.2	1403.2
40°	1405.3	1389.2	1357.2	1339.3	1331.2
42.5°	1335.2	1319.1	1287.3	1267.1	1255.2
45°	1259.3	1245.2	1215.0	1193.2	1185.1
47.5°	1185.1	1171.1	1139.1	1117.0	1105.0
50°	1107.0	1097.0	1069.0	1040.9	1030.9
52.5°	1030.9	1016.9	991.0	968.9	954.9
55°	953.0	940.8	916.9	892.9	882.9
57.5°	874.9	864.9	838.7	814.8	806.6
60°	796.7	788.8	760.8	738.7	732.7
62.5°	720.6	706.6	686.6	666.6	658.6
65°	642.7	630.6	610.6	592.5	582.6
67.5°	562.6	552.4	534.6	520.6	512.5
70°	488.5	480.5	462.4	448.4	440.5
72.5°	412.4	404.4	394.4	380.4	374.4
75°	336.2	332.4	322.2	310.3	314.3
77.5°	268.2	260.2	256.1	250.2	244.2
80°	200.3	198.1	194.1	188.2	184.1
82.5°	136.2	136.2	134.2	126.2	126.2
85°	81.9	80.1	78.1	72.0	70.1
87.5°	36.1	32.1	28.0	22.1	20.0
90°	1.7	20.9	34.8	43.6	47.0
92.5°	43.6	36.6	41.8	45.3	47.0
95°	113.2	55.6	67.9	76.8	74.9
97.5°	203.8	61.0	88.7	94.2	95.8
100°	308.4	69.7	99.3	113.2	116.6
102.5°	423.3	419.9	102.8	121.8	127.2
105°	529.6	581.9	106.3	125.4	132.4
107.5°	653.3	696.7	109.9	128.9	135.9
110°	771.9	808.2	305.0	130.7	137.6

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	883.3	914.5	885.0	134.0	139.5
115°	1001.7	1031.3	1074.9	268.3	142.9
117.5°	1104.5	1139.2	1169.0	919.7	463.4
120°	1219.5	1245.5	1277.0	1297.9	1062.7
122.5°	1316.9	1344.9	1379.8	1390.2	1392.0
125°	1416.2	1439.0	1472.0	1484.3	1489.4
127.5°	1506.8	1531.2	1557.6	1574.8	1576.5
130°	1592.2	1620.1	1639.2	1658.5	1656.8
132.5°	1679.4	1702.1	1721.2	1736.9	1735.2
135°	1752.6	1780.5	1796.0	1813.6	1810.1
137.5°	1829.2	1850.0	1867.6	1885.0	1879.8
140°	1904.0	1918.1	1937.2	1952.8	1944.1
142.5°	1966.9	1979.1	2001.6	2015.5	2006.8
145°	2033.1	2031.2	2060.8	2073.0	2064.3
147.5°	2090.4	2085.3	2114.8	2123.5	2116.7
150°	2146.3	2134.0	2162.0	2172.3	2163.6
152.5°	2193.3	2179.3	2205.4	2216.0	2203.8
155°	2238.5	2223.0	2243.9	2254.2	2240.4
157.5°	2275.1	2261.3	2277.0	2289.2	2275.1
160°	2306.6	2296.1	2306.6	2316.9	2304.7
162.5°	2334.3	2324.0	2332.6	2344.8	2329.1
165°	2358.8	2348.4	2353.6	2365.7	2353.6
167.5°	2377.9	2367.4	2372.8	2385.0	2369.3
170°	2393.7	2383.1	2386.7	2398.9	2383.1
172.5°	2404.1	2393.7	2397.2	2409.4	2393.7
175°	2412.7	2400.5	2404.1	2416.2	2398.9
177.5°	2416.2	2404.1	2405.8	2418.1	2402.4
180°	2407.5	2407.5	2407.5	2407.5	2407.5

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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	8.32	9.12	9.34	10.15	11.52	7.89	8.69	8.90	9.71	11.08
	3H	9.98	10.69	11.00	11.73	13.12	9.50	10.22	10.53	11.26	12.64
	4H	10.56	11.24	11.60	12.28	13.67	10.09	10.77	11.13	11.80	13.20
	6H	10.96	11.58	12.01	12.62	14.03	10.48	11.11	11.53	12.15	13.56
	8H	11.06	11.66	12.11	12.71	14.12	10.59	11.18	11.64	12.24	13.64
	12H	11.11	11.67	12.16	12.72	14.15	10.63	11.19	11.68	12.24	13.67
4H	2H	8.77	9.46	9.82	10.49	11.89	8.43	9.11	9.48	10.15	11.54
	3H	10.64	11.20	11.69	12.27	13.68	10.24	10.81	11.30	11.87	13.28
	4H	11.35	11.87	12.41	12.92	14.35	10.94	11.46	12.00	12.52	13.95
	6H	11.86	12.31	12.93	13.38	14.81	11.45	11.90	12.52	12.97	14.40
	8H	12.01	12.42	13.08	13.50	14.94	11.59	12.01	12.66	13.08	14.53
	12H	12.08	12.45	13.16	13.54	14.99	11.65	12.03	12.74	13.12	14.57
8H	4H	11.54	11.96	12.61	13.03	14.47	11.18	11.60	12.25	12.67	14.11
	6H	12.17	12.51	13.26	13.63	15.06	11.80	12.15	12.90	13.26	14.70
	8H	12.39	12.69	13.49	13.79	15.25	12.02	12.32	13.12	13.42	14.88
	12H	12.52	12.78	13.62	13.87	15.37	12.13	12.40	13.23	13.49	14.99
12H	4H	11.52	11.90	12.61	12.98	14.43	11.17	11.55	12.26	12.63	14.08
	6H	12.20	12.50	13.30	13.60	15.05	11.84	12.15	12.94	13.24	14.70
	8H	12.44	12.70	13.54	13.79	15.29	12.08	12.35	13.18	13.44	14.93

END OF REPORT