

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: P919502

Luminaire Tested: DFN2DIP-PN3F0-090D070US935-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P919502
REPORT IS A COMBINATION OF REPORTS P899580 AND P896399
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN3F0-090D070US935-RLLFLL
Description: 3 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

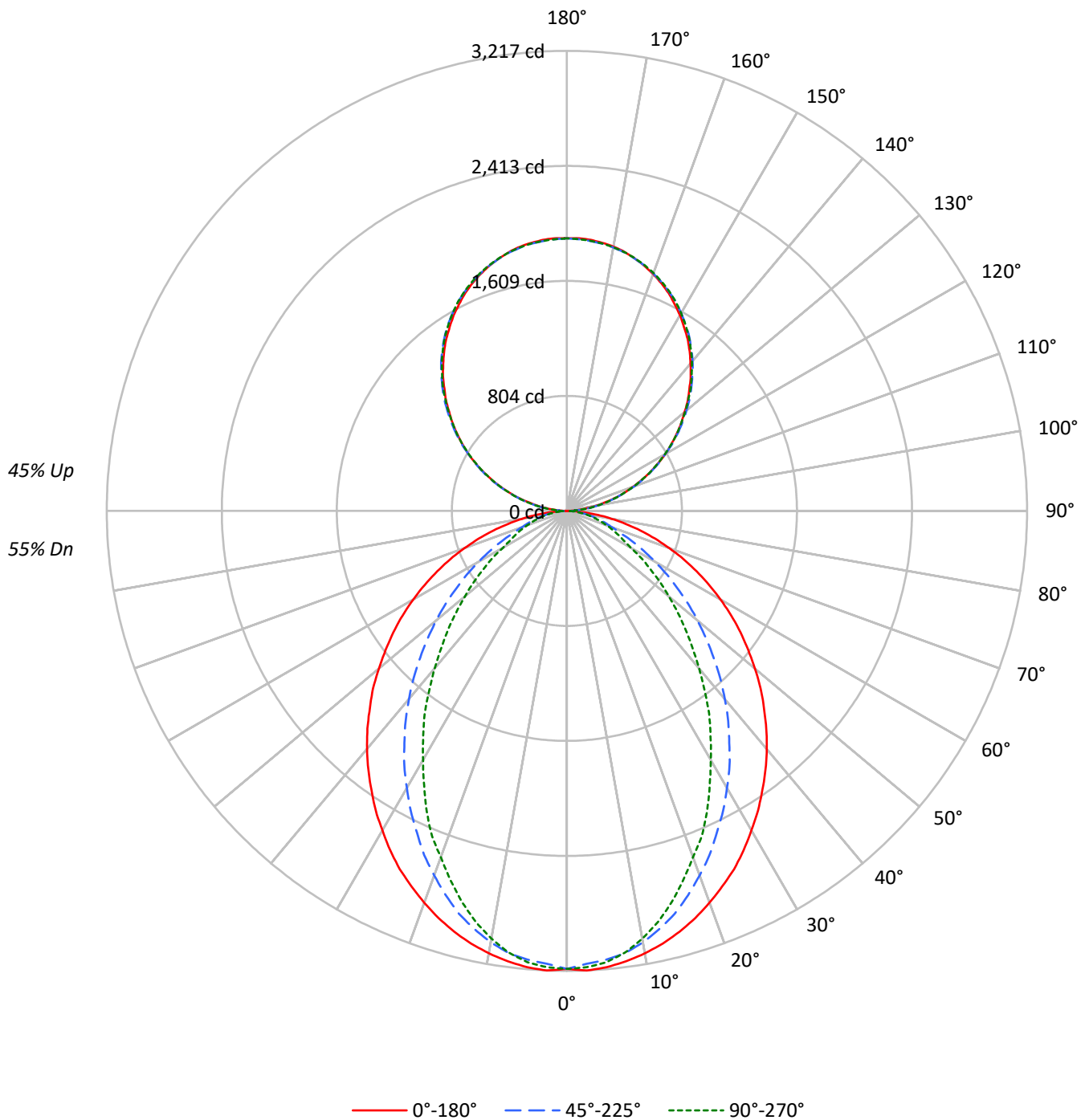
Lumens per Lamp: N/A
Luminaire Lumens: 11920.6 lumens
Efficiency: N/A
Efficacy: 80.9 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.96' x L: 3.11' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 147.3
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9954
Total Harmonic Distortion (THDi): 0.076
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	108	108	108	108	101	101	101	101	86	86	86	73	73	73	61	61	61
1	99	95	92	88	92	89	86	83	76	74	72	65	63	62	55	54	53
2	91	84	78	73	84	78	73	69	68	64	60	58	55	53	49	47	45
3	83	74	67	61	77	69	63	58	60	55	51	52	48	45	44	41	39
4	77	66	58	52	71	62	55	50	54	49	44	46	42	39	39	36	34
5	71	59	51	45	65	55	48	43	48	43	39	42	38	34	36	33	30
6	65	53	45	40	60	50	43	38	44	38	34	38	34	30	33	29	27
7	60	48	41	35	56	45	38	33	40	34	30	35	30	27	30	27	24
8	56	44	36	31	52	41	35	30	37	31	27	32	28	24	28	24	22
9	52	40	33	28	49	38	31	27	34	28	24	30	25	22	26	22	20
10	49	37	30	25	46	35	29	24	31	26	22	27	23	20	24	20	18

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3744	3744	3744
5°	3748	3682	3706
10°	3708	3607	3584
15°	3655	3485	3396
20°	3585	3318	3166
25°	3514	3132	2944
30°	3419	2941	2663
35°	3325	2736	2416
40°	3230	2524	2133
45°	3120	2289	1877
50°	3005	2052	1627
55°	2886	1800	1386
60°	2747	1536	1140
65°	2588	1268	1024
70°	2394	1018	924
75°	2150	892	837
80°	1798	740	721
85°	1221	481	532

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3120 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	300.2	2.5
10°-20°	824.0	6.9
20°-30°	1156.9	9.7
30°-40°	1261.0	10.6
40°-50°	1159.0	9.7
50°-60°	910.3	7.6
60°-70°	592.5	5.0
70°-80°	305.0	2.6
80°-90°	83.3	0.7
90°-100°	117.9	1.0
100°-110°	374.8	3.1
110°-120°	641.3	5.4
120°-130°	843.5	7.1
130°-140°	946.7	7.9
140°-150°	928.4	7.8
150°-160°	778.8	6.5
160°-170°	516.5	4.3
170°-180°	180.5	1.5
0°-30°	2281.0	19.1
0°-40°	3542.0	29.7
0°-60°	5611.3	47.1
0°-90°	6592.1	55.3
90°-120°	1134.1	9.5
90°-150°	3852.7	32.3
90°-180°	5328.0	44.7
0°-180°	11920.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3203	3203	3203	3203	3203	
5°	3203	3188	3150	3176	3168	304
15°	3046	3014	2916	2861	2832	858
25°	2765	2672	2481	2362	2319	1272
35°	2383	2235	1980	1797	1733	1491
45°	1948	1753	1449	1243	1174	1504
55°	1481	1255	942	768	713	1323
65°	1000	765	504	406	397	991
75°	533	330	232	212	209	564
85°	124	64	55	55	55	143
90°	2	21	56	53	55	12
95°	84	100	103	103	100	93
105°	346	350	354	357	357	365
115°	644	653	650	648	644	637
125°	936	950	946	941	939	837
135°	1211	1229	1232	1230	1226	936
145°	1470	1481	1491	1492	1486	918
155°	1681	1685	1691	1699	1694	774
165°	1828	1827	1827	1838	1830	516
175°	1903	1898	1895	1906	1896	181
180°	1906	1906	1906	1906	1906	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3202.7	3202.7	3202.7	3202.7	3202.7
2.5°	3217.1	3202.7	3170.6	3199.9	3194.0
5°	3202.7	3188.2	3150.4	3176.5	3167.9
7.5°	3176.5	3159.3	3118.7	3130.1	3115.6
10°	3141.8	3121.5	3063.7	3054.7	3037.5
12.5°	3098.4	3072.3	2993.9	2976.6	2944.6
15°	3046.1	3014.2	2915.8	2860.7	2831.8
17.5°	2985.3	2938.8	2817.0	2753.4	2707.0
20°	2915.8	2857.7	2712.7	2640.5	2576.5
22.5°	2840.4	2773.7	2605.5	2507.1	2463.7
25°	2765.1	2672.2	2481.0	2362.2	2318.6
27.5°	2675.3	2576.5	2365.0	2228.8	2162.1
30°	2579.6	2469.3	2237.4	2089.8	2011.4
32.5°	2486.7	2353.3	2115.9	1941.9	1869.3
35°	2382.6	2234.6	1979.7	1797.1	1733.1
37.5°	2281.0	2121.5	1852.1	1651.9	1579.7
40°	2173.8	2000.0	1718.6	1512.9	1437.6
42.5°	2063.6	1878.3	1585.4	1370.9	1298.6
45°	1947.7	1753.4	1449.2	1243.2	1173.7
47.5°	1837.6	1631.9	1318.9	1112.8	1049.2
50°	1715.9	1510.1	1191.3	991.1	930.5
52.5°	1596.9	1379.5	1069.5	878.2	823.2
55°	1480.9	1254.9	941.8	768.2	713.1
57.5°	1362.3	1130.4	829.1	666.7	620.3
60°	1240.4	1008.6	710.1	562.4	516.0
62.5°	1121.8	889.9	608.6	469.6	446.5
65°	1000.0	765.1	504.3	405.9	397.0
67.5°	884.1	649.1	405.9	356.4	347.8
70°	762.3	536.3	336.1	307.2	295.5
72.5°	646.4	431.7	281.0	258.0	252.2
75°	533.2	330.3	231.9	211.5	208.8
77.5°	420.3	234.6	182.6	171.0	165.1
80°	315.8	168.2	139.0	127.6	127.6
82.5°	220.2	113.1	95.7	89.8	89.8
85°	124.5	63.6	55.0	55.0	55.0
87.5°	46.4	23.1	23.1	20.3	20.3
90°	1.7	20.7	56.3	52.9	54.6
92.5°	35.6	48.3	50.0	51.7	51.7
95°	83.9	100.0	102.9	102.9	100.0
97.5°	139.7	154.5	160.9	160.9	160.9
100°	204.0	217.2	221.8	221.8	220.1
102.5°	271.8	281.5	287.9	289.6	287.9
105°	345.9	350.5	354.0	356.9	356.9
107.5°	419.5	426.4	426.4	427.6	419.5
110°	490.8	500.0	500.0	500.0	495.3

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	567.7	577.6	575.8	571.2	567.7
115°	643.6	652.8	650.0	648.2	643.6
117.5°	718.8	731.5	723.5	718.8	714.3
120°	794.7	807.4	794.7	794.7	789.5
122.5°	863.7	879.8	871.8	867.1	863.7
125°	936.1	950.5	945.9	940.7	939.0
127.5°	1006.8	1024.6	1018.3	1011.4	1006.8
130°	1072.9	1093.6	1090.7	1087.3	1080.9
132.5°	1147.0	1163.1	1164.2	1156.2	1151.6
135°	1210.8	1228.6	1232.1	1230.3	1225.7
137.5°	1282.0	1296.4	1299.2	1298.1	1291.2
140°	1344.7	1359.1	1367.1	1367.1	1360.8
142.5°	1409.0	1423.4	1428.0	1429.7	1423.4
145°	1470.0	1481.4	1490.6	1492.4	1486.1
147.5°	1524.6	1538.9	1545.8	1548.7	1542.4
150°	1580.9	1590.6	1597.0	1602.1	1597.0
152.5°	1630.8	1640.6	1648.6	1655.0	1648.6
155°	1680.8	1685.4	1690.7	1698.7	1693.5
157.5°	1724.0	1727.4	1730.3	1741.8	1733.7
160°	1762.5	1765.9	1767.6	1777.4	1770.5
162.5°	1798.1	1798.1	1799.8	1810.7	1802.7
165°	1828.5	1826.8	1826.8	1838.3	1830.2
167.5°	1856.1	1851.0	1851.0	1862.4	1854.4
170°	1876.8	1872.2	1870.5	1882.0	1872.2
172.5°	1891.2	1886.5	1884.8	1896.3	1886.5
175°	1902.6	1898.1	1894.6	1906.1	1896.3
177.5°	1909.0	1904.4	1900.9	1910.7	1900.9
180°	1906.1	1906.1	1906.1	1906.1	1906.1

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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	12.17	13.05	13.09	13.98	15.18	8.14	9.02	9.06	9.95	11.14
	3H	13.85	14.63	14.78	15.57	16.79	9.33	10.11	10.26	11.05	12.27
	4H	14.46	15.20	15.40	16.14	17.37	9.78	10.52	10.72	11.46	12.69
	6H	14.88	15.56	15.83	16.51	17.75	10.09	10.77	11.05	11.73	12.97
	8H	15.00	15.65	15.96	16.62	17.86	10.18	10.83	11.14	11.80	13.04
	12H	15.06	15.68	16.03	16.64	17.90	10.22	10.84	11.19	11.80	13.07
4H	2H	12.20	12.94	13.15	13.88	15.11	8.74	9.48	9.69	10.42	11.65
	3H	14.02	14.64	14.98	15.61	16.86	10.09	10.70	11.05	11.68	12.92
	4H	14.71	15.27	15.68	16.24	17.51	10.63	11.19	11.60	12.16	13.43
	6H	15.22	15.71	16.21	16.70	17.97	11.05	11.53	12.03	12.52	13.79
	8H	15.40	15.85	16.38	16.83	18.11	11.17	11.62	12.15	12.61	13.89
	12H	15.49	15.90	16.49	16.90	18.19	11.24	11.64	12.24	12.64	13.93
8H	4H	14.68	15.13	15.66	16.12	17.40	10.91	11.36	11.89	12.35	13.63
	6H	15.24	15.61	16.25	16.64	17.92	11.42	11.79	12.43	12.82	14.10
	8H	15.46	15.78	16.47	16.80	18.10	11.61	11.94	12.62	12.95	14.25
	12H	15.59	15.88	16.61	16.89	18.23	11.72	12.01	12.74	13.02	14.37
12H	4H	14.64	15.04	15.64	16.04	17.33	10.92	11.32	11.92	12.33	13.61
	6H	15.22	15.55	16.23	16.56	17.86	11.47	11.80	12.49	12.81	14.11
	8H	15.44	15.72	16.45	16.73	18.08	11.68	11.97	12.70	12.98	14.32