

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: P908476

Luminaire Tested: DFN2DIP-PN3F0-050D070US840-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P908476
REPORT IS A COMBINATION OF REPORTS P899571 AND P896399
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN3F0-050D070US840-FLLFLL
Description: 3 foot, Pentagon Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

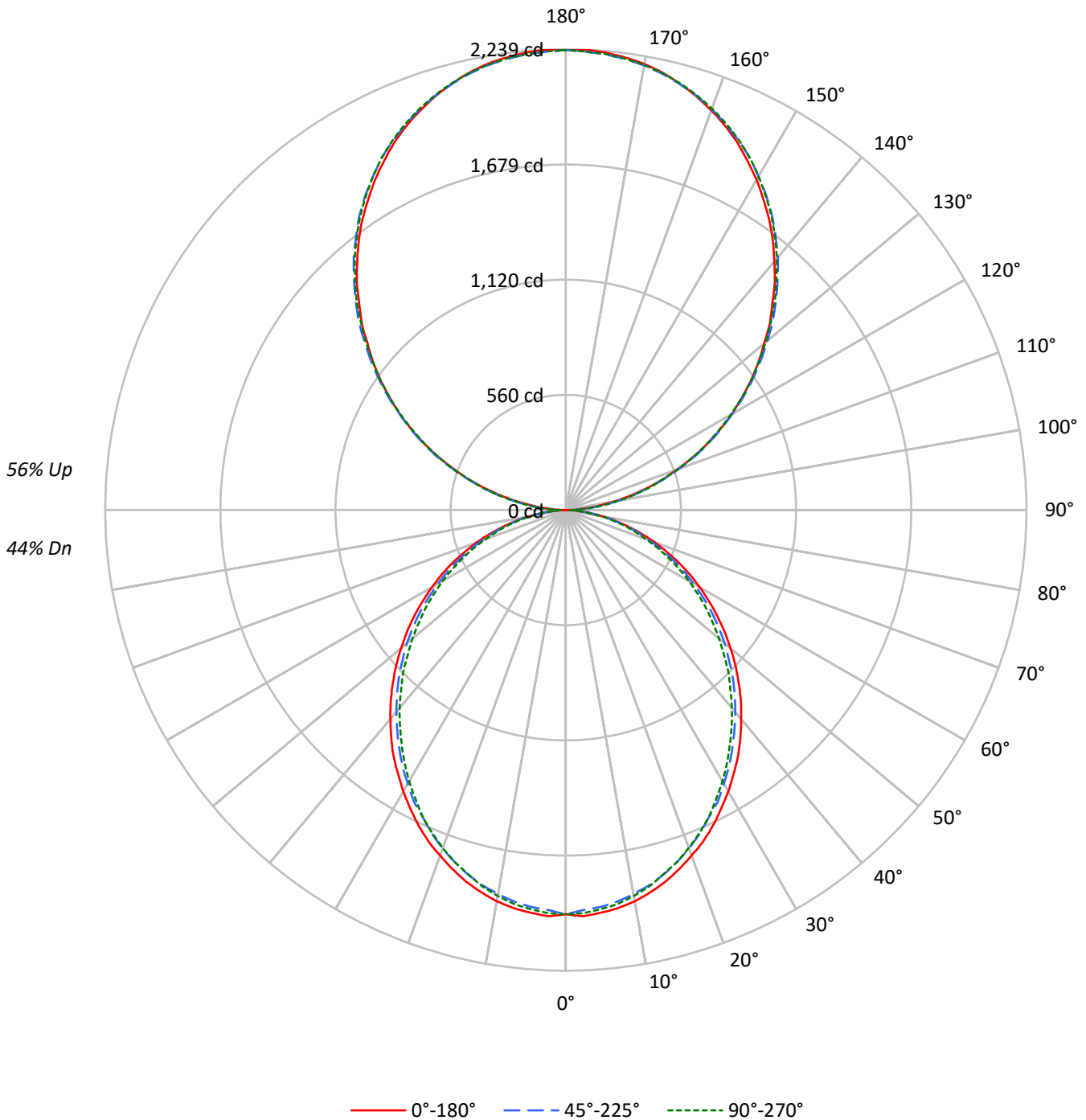
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 11255.0 lumens
Efficiency: N/A
Efficacy: 113.3 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.96' x L: 3.11' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 99.3
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

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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					0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0		
RCR																										
0	106	106	106	106	97	97	97	97	80	80	80	65	65	65	51	51	51	44								
1	97	92	88	85	88	85	81	78	70	68	66	57	56	54	45	44	43	37								
2	88	81	74	69	80	74	69	64	62	58	55	50	48	45	40	38	36	31								
3	80	71	64	58	73	65	59	54	54	50	46	44	41	38	35	33	31	27								
4	73	63	55	49	67	58	51	45	48	43	39	40	36	33	31	29	27	23								
5	67	56	48	42	61	51	44	39	43	38	34	35	31	28	28	25	23	20								
6	62	50	42	36	57	46	39	34	39	33	29	32	28	25	26	23	20	17								
7	57	45	37	32	52	42	35	30	35	30	26	29	25	22	23	20	18	15								
8	53	41	33	28	49	38	31	26	32	27	23	27	23	20	22	19	16	14								
9	49	37	30	25	45	35	28	23	29	24	20	24	20	18	20	17	15	12								
10	46	34	27	22	42	32	25	21	27	22	18	23	19	16	18	15	13	11								

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2297	2297	2297
5°	2299	2263	2279
10°	2279	2231	2247
15°	2244	2193	2198
20°	2198	2140	2148
25°	2151	2077	2090
30°	2093	2019	2016
35°	2038	1950	1938
40°	1971	1881	1864
45°	1903	1811	1788
50°	1830	1738	1701
55°	1753	1653	1620
60°	1665	1553	1528
65°	1569	1449	1418
70°	1448	1322	1300
75°	1280	1170	1190
80°	1076	975	982
85°	759	645	640

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°
 Vertical Angle: 90°
 Luminance: 2214 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	184.9	1.6
10°-20°	520.3	4.6
20°-30°	764.6	6.8
30°-40°	888.1	7.9
40°-50°	887.0	7.9
50°-60°	773.4	6.9
60°-70°	571.7	5.1
70°-80°	323.5	2.9
80°-90°	91.7	0.8
90°-100°	138.3	1.2
100°-110°	439.6	3.9
110°-120°	752.2	6.7
120°-130°	989.3	8.8
130°-140°	1110.5	9.9
140°-150°	1088.9	9.7
150°-160°	913.5	8.1
160°-170°	605.8	5.4
170°-180°	211.7	1.9
0°-30°	1469.8	13.1
0°-40°	2357.9	20.9
0°-60°	4018.3	35.7
0°-90°	5005.2	44.5
90°-120°	1330.1	11.8
90°-150°	4518.8	40.1
90°-180°	6250.0	55.5
0°-180°	11255.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1965	1965	1965	1965	1965	
5°	1965	1957	1936	1952	1948	187
15°	1870	1859	1834	1842	1833	527
25°	1693	1678	1646	1649	1646	779
35°	1460	1442	1411	1400	1390	912
45°	1188	1175	1147	1126	1118	917
55°	899	888	865	843	833	804
65°	606	595	576	559	550	600
75°	317	314	304	293	297	339
85°	77	76	74	68	66	86
90°	2	24	66	62	64	11
95°	98	117	121	121	117	109
105°	406	411	415	419	419	428
115°	755	766	762	760	755	747
125°	1098	1115	1109	1103	1101	981
135°	1420	1441	1445	1443	1438	1098
145°	1724	1738	1748	1750	1743	1077
155°	1972	1977	1983	1992	1986	907
165°	2145	2143	2143	2156	2147	605
175°	2232	2226	2222	2236	2224	212
180°	2236	2236	2236	2236	2236	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1964.7	1964.7	1964.7	1964.7	1964.7
2.5°	1976.1	1966.7	1945.9	1964.7	1961.2
5°	1964.7	1957.3	1936.4	1951.5	1947.9
7.5°	1951.5	1940.3	1919.5	1934.7	1930.9
10°	1930.9	1917.6	1895.0	1910.0	1904.4
12.5°	1902.4	1891.2	1868.6	1877.9	1874.1
15°	1870.3	1859.1	1834.4	1842.1	1832.6
17.5°	1830.6	1819.4	1794.7	1804.1	1794.7
20°	1787.2	1775.9	1749.5	1755.0	1747.7
22.5°	1743.8	1726.8	1702.1	1702.1	1698.3
25°	1692.7	1677.7	1645.6	1649.2	1645.6
27.5°	1636.0	1622.8	1598.3	1592.7	1583.3
30°	1579.4	1564.3	1536.0	1530.4	1522.8
32.5°	1518.9	1507.7	1477.4	1466.0	1458.4
35°	1460.4	1441.6	1411.3	1399.9	1390.5
37.5°	1394.2	1377.3	1347.0	1333.7	1324.3
40°	1326.4	1311.1	1280.8	1263.9	1256.4
42.5°	1260.2	1245.0	1214.9	1195.8	1184.6
45°	1188.4	1175.2	1146.7	1126.1	1118.4
47.5°	1118.4	1105.2	1075.0	1054.1	1042.9
50°	1044.7	1035.3	1008.9	982.4	972.9
52.5°	972.9	959.7	935.2	914.4	901.2
55°	899.4	888.0	865.3	842.6	833.2
57.5°	825.6	816.2	791.5	768.9	761.2
60°	751.8	744.5	718.0	697.1	691.6
62.5°	680.1	666.9	648.0	629.1	621.6
65°	606.5	595.1	576.2	559.3	549.8
67.5°	531.0	521.4	504.5	491.3	483.6
70°	461.0	453.4	436.4	423.1	415.8
72.5°	389.3	381.6	372.2	359.0	353.4
75°	317.3	313.7	304.1	292.9	296.7
77.5°	253.2	245.5	241.8	236.1	230.6
80°	189.0	187.0	183.2	177.6	173.8
82.5°	128.5	128.5	126.6	119.1	119.1
85°	77.4	75.5	73.7	68.0	66.1
87.5°	34.0	30.3	26.5	20.8	18.9
90°	2.0	24.2	66.0	62.0	64.0
92.5°	41.8	56.7	58.7	60.7	60.7
95°	98.4	117.2	120.7	120.7	117.2
97.5°	163.8	181.3	188.7	188.7	188.7
100°	239.2	254.8	260.1	260.1	258.1
102.5°	318.8	330.2	337.7	339.7	337.7
105°	405.8	411.1	415.2	418.6	418.6
107.5°	492.0	500.1	500.1	501.5	492.0
110°	575.6	586.4	586.4	586.4	581.0



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	665.9	677.4	675.4	669.9	665.9
115°	754.9	765.7	762.3	760.3	754.9
117.5°	843.1	858.0	848.6	843.1	837.8
120°	932.1	947.0	932.1	932.1	926.0
122.5°	1013.0	1031.9	1022.5	1017.0	1013.0
125°	1097.9	1114.8	1109.4	1103.4	1101.4
127.5°	1180.8	1201.7	1194.4	1186.3	1180.8
130°	1258.4	1282.6	1279.3	1275.3	1267.8
132.5°	1345.3	1364.2	1365.5	1356.1	1350.7
135°	1420.2	1441.0	1445.1	1443.0	1437.6
137.5°	1503.7	1520.6	1523.9	1522.6	1514.5
140°	1577.2	1594.1	1603.5	1603.5	1596.1
142.5°	1652.6	1669.5	1674.9	1676.9	1669.5
145°	1724.1	1737.6	1748.4	1750.4	1743.0
147.5°	1788.2	1805.0	1813.1	1816.4	1809.1
150°	1854.2	1865.6	1873.1	1879.2	1873.1
152.5°	1912.8	1924.3	1933.7	1941.2	1933.7
155°	1971.5	1976.8	1983.0	1992.4	1986.3
157.5°	2022.1	2026.1	2029.4	2043.0	2033.5
160°	2067.2	2071.2	2073.3	2084.7	2076.6
162.5°	2109.0	2109.0	2111.0	2123.7	2114.4
165°	2144.7	2142.6	2142.6	2156.2	2146.7
167.5°	2177.1	2171.0	2171.0	2184.4	2175.0
170°	2201.3	2196.0	2193.9	2207.4	2196.0
172.5°	2218.2	2212.7	2210.7	2224.2	2212.7
175°	2231.6	2226.2	2222.2	2235.6	2224.2
177.5°	2239.1	2233.6	2229.6	2241.1	2229.6
180°	2235.6	2235.6	2235.6	2235.6	2235.6



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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	9.59	10.40	10.59	11.41	12.76	9.15	9.96	10.15	10.97	12.32
	3H	11.24	11.97	12.25	12.99	14.36	10.75	11.48	11.77	12.51	13.88
	4H	11.82	12.51	12.84	13.54	14.91	11.33	12.02	12.36	13.05	14.43
	6H	12.21	12.85	13.25	13.88	15.27	11.72	12.36	12.76	13.39	14.78
	8H	12.31	12.92	13.35	13.96	15.35	11.82	12.43	12.86	13.47	14.86
	12H	12.36	12.93	13.40	13.97	15.38	11.86	12.44	12.91	13.48	14.88
4H	2H	10.04	10.73	11.07	11.75	13.13	9.69	10.38	10.72	11.40	12.78
	3H	11.89	12.47	12.93	13.52	14.91	11.49	12.07	12.53	13.12	14.51
	4H	12.60	13.13	13.65	14.17	15.59	12.18	12.71	13.23	13.76	15.17
	6H	13.11	13.56	14.16	14.63	16.04	12.68	13.14	13.74	14.21	15.61
	8H	13.25	13.68	14.31	14.74	16.16	12.83	13.25	13.88	14.31	15.73
	12H	13.32	13.70	14.40	14.78	16.21	12.88	13.27	13.96	14.34	15.77
8H	4H	12.79	13.21	13.85	14.27	15.70	12.42	12.84	13.48	13.90	15.33
	6H	13.41	13.76	14.49	14.86	16.28	13.04	13.39	14.12	14.49	15.91
	8H	13.63	13.93	14.72	15.02	16.46	13.24	13.55	14.33	14.64	16.08
	12H	13.75	14.02	14.84	15.10	16.58	13.35	13.62	14.44	14.71	16.18
12H	4H	12.77	13.16	13.85	14.23	15.66	12.41	12.79	13.49	13.87	15.30
	6H	13.44	13.75	14.53	14.83	16.27	13.07	13.38	14.16	14.47	15.91
	8H	13.67	13.94	14.77	15.03	16.51	13.30	13.57	14.39	14.66	16.13