

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: P909152

Luminaire Tested: DFN2DIP-SQ3F0-060D070US840-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P909152
REPORT IS A COMBINATION OF REPORTS P899919 AND P896733
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ3F0-060D070US840-FLLFLL
Description: 3 foot, Square Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

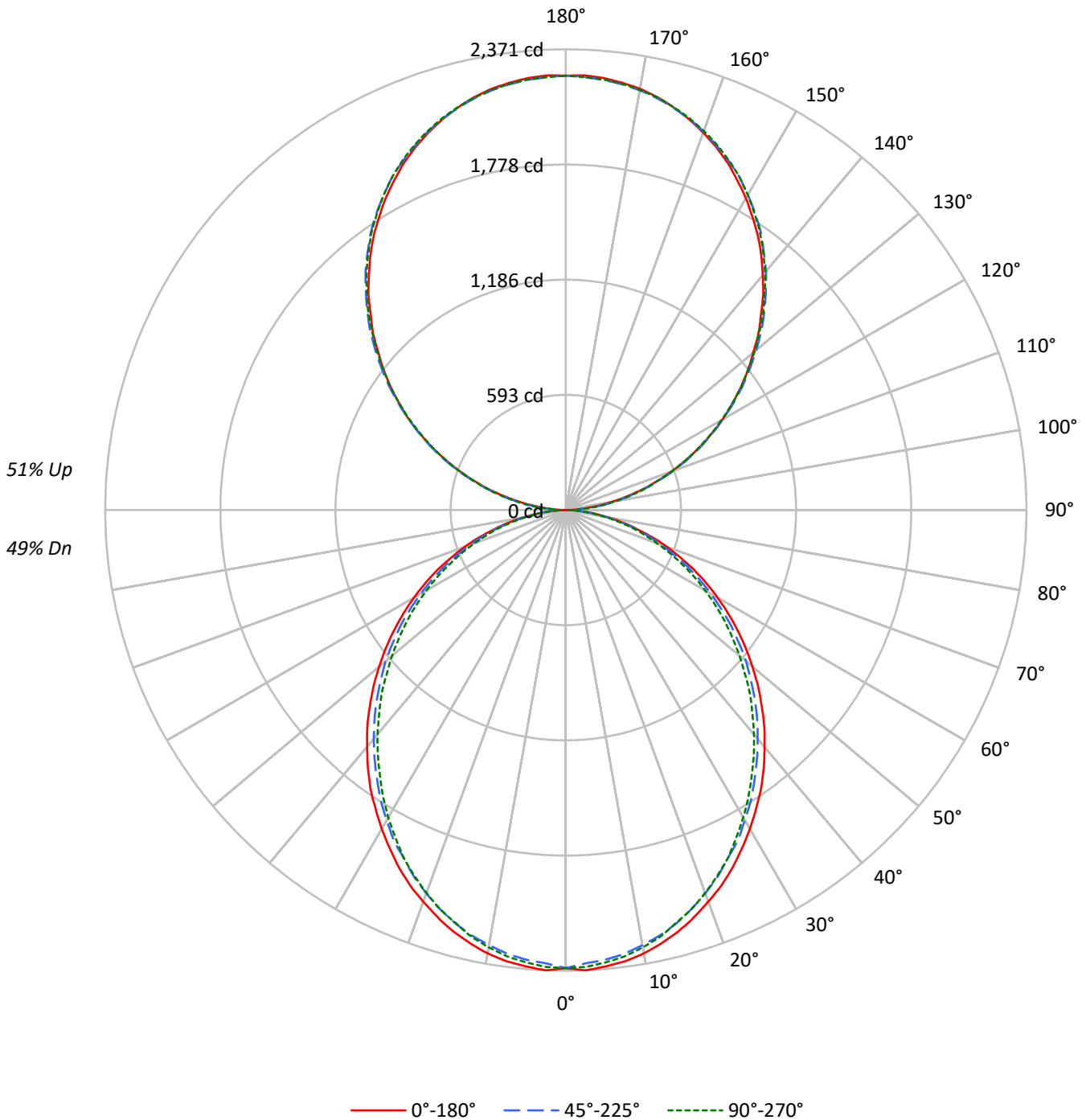
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 12254.7 lumens
Efficiency: N/A
Efficacy: 115.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.06' x L: 3.06' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 105.9
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9971
Total Harmonic Distortion (THDi): 0.049
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	0
RCR																					
0	107	107	107	107	98	98	98	98	83	83	83	68	68	68	55	55	55	49			49
1	98	93	89	86	90	86	83	80	73	70	68	60	59	57	49	48	47	41			41
2	89	81	75	70	82	75	70	65	64	60	56	53	50	48	43	41	39	35			35
3	81	72	64	58	74	66	60	55	56	51	47	47	43	40	38	36	33	29			29
4	74	63	55	49	68	59	52	46	50	45	40	42	38	34	34	31	29	25			25
5	68	56	48	42	62	52	45	40	45	39	35	37	33	30	31	28	25	22			22
6	63	51	43	37	58	47	40	35	40	35	30	34	29	26	28	25	22	19			19
7	58	46	38	32	53	42	35	30	36	31	27	31	26	23	25	22	20	17			17
8	54	41	34	28	49	39	32	27	33	28	24	28	24	21	23	20	18	15			15
9	50	38	30	25	46	35	29	24	30	25	21	26	22	19	22	18	16	14			14
10	47	35	28	23	43	32	26	22	28	23	19	24	20	17	20	17	14	12			12

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2701	2701	2701
5°	2704	2662	2681
10°	2680	2624	2644
15°	2639	2579	2586
20°	2584	2517	2527
25°	2529	2444	2459
30°	2461	2375	2373
35°	2397	2295	2282
40°	2317	2213	2195
45°	2238	2131	2106
50°	2151	2045	2003
55°	2060	1946	1909
60°	1957	1828	1800
65°	1844	1706	1672
70°	1701	1557	1534
75°	1502	1378	1405
80°	1263	1150	1161
85°	889	762	760

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°
 Vertical Angle: 90°
 Luminance: 2248 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	221.9	1.8
10°-20°	624.4	5.1
20°-30°	917.5	7.5
30°-40°	1065.7	8.7
40°-50°	1064.4	8.7
50°-60°	928.1	7.6
60°-70°	686.1	5.6
70°-80°	388.2	3.2
80°-90°	108.8	0.9
90°-100°	138.3	1.1
100°-110°	439.6	3.6
110°-120°	752.2	6.1
120°-130°	989.3	8.1
130°-140°	1110.5	9.1
140°-150°	1088.9	8.9
150°-160°	913.5	7.5
160°-170°	605.8	4.9
170°-180°	211.7	1.7
0°-30°	1763.8	14.4
0°-40°	2829.5	23.1
0°-60°	4821.9	39.3
0°-90°	6004.9	49.0
90°-120°	1330.1	10.9
90°-150°	4518.8	36.9
90°-180°	6250.0	51.0
0°-180°	12254.7	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2358	2358	2358	2358	2358	
5°	2358	2349	2324	2342	2337	224
15°	2244	2231	2201	2210	2199	632
25°	2031	2013	1975	1979	1975	935
35°	1752	1730	1694	1680	1668	1094
45°	1426	1410	1376	1351	1342	1101
55°	1079	1066	1038	1011	1000	965
65°	728	714	692	671	660	720
75°	381	376	365	351	356	406
85°	93	91	88	82	79	104
90°	2	24	66	62	64	12
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	



TEST NUMBER: P909152

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2357.6	2357.6	2357.6	2357.6	2357.6
2.5°	2371.4	2360.1	2335.0	2357.6	2353.3
5°	2357.6	2348.7	2323.7	2341.8	2337.4
7.5°	2341.8	2328.3	2303.3	2321.6	2317.0
10°	2317.0	2301.2	2273.9	2292.0	2285.2
12.5°	2282.9	2269.4	2242.2	2253.5	2249.0
15°	2244.3	2230.9	2201.3	2210.5	2199.2
17.5°	2196.8	2183.3	2153.7	2164.9	2153.7
20°	2144.6	2131.1	2099.3	2106.1	2097.2
22.5°	2092.6	2072.1	2042.6	2042.6	2038.0
25°	2031.2	2013.3	1974.7	1979.0	1974.7
27.5°	1963.2	1947.3	1917.9	1911.3	1900.0
30°	1895.4	1877.0	1843.2	1836.4	1827.3
32.5°	1822.7	1809.3	1772.9	1759.2	1750.1
35°	1752.5	1729.9	1693.5	1679.8	1668.5
37.5°	1673.1	1652.6	1616.4	1600.4	1589.1
40°	1591.5	1573.3	1537.0	1516.8	1507.6
42.5°	1512.2	1493.9	1457.8	1435.0	1421.5
45°	1426.1	1410.2	1376.0	1351.3	1342.1
47.5°	1342.1	1326.3	1290.0	1265.0	1251.4
50°	1253.6	1242.3	1210.6	1178.8	1167.5
52.5°	1167.5	1151.7	1122.3	1097.3	1081.5
55°	1079.2	1065.5	1038.3	1011.2	999.9
57.5°	990.8	979.5	949.9	922.7	913.5
60°	902.2	893.3	861.6	836.6	829.8
62.5°	816.1	800.2	777.6	755.0	745.9
65°	727.8	714.2	691.6	671.1	659.7
67.5°	637.1	625.6	605.4	589.6	580.4
70°	553.2	544.1	523.6	507.8	498.9
72.5°	467.1	458.0	446.7	430.8	424.0
75°	380.7	376.5	364.9	351.4	356.0
77.5°	303.8	294.7	290.0	283.4	276.6
80°	226.8	224.4	219.8	213.1	208.5
82.5°	154.2	154.2	152.0	142.9	142.9
85°	92.8	90.7	88.5	81.5	79.4
87.5°	40.9	36.4	31.7	25.0	22.6
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	10.60	11.45	11.56	12.43	13.71	10.15	11.00	11.12	11.98	13.27
	3H	12.25	13.02	13.23	14.00	15.31	11.76	12.53	12.74	13.51	14.82
	4H	12.84	13.56	13.83	14.55	15.87	12.34	13.07	13.33	14.06	15.37
	6H	13.23	13.90	14.23	14.90	16.22	12.73	13.40	13.73	14.40	15.72
	8H	13.33	13.97	14.34	14.98	16.31	12.83	13.47	13.84	14.48	15.81
	12H	13.38	13.98	14.39	14.99	16.34	12.87	13.47	13.88	14.48	15.83
4H	2H	11.05	11.78	12.05	12.77	14.09	10.70	11.42	11.69	12.41	13.73
	3H	12.91	13.52	13.92	14.54	15.87	12.50	13.11	13.51	14.13	15.46
	4H	13.62	14.17	14.64	15.19	16.54	13.20	13.75	14.21	14.77	16.12
	6H	14.13	14.61	15.16	15.65	17.00	13.70	14.18	14.72	15.21	16.56
	8H	14.28	14.72	15.30	15.75	17.12	13.84	14.29	14.87	15.32	16.68
	12H	14.35	14.75	15.39	15.80	17.17	13.90	14.30	14.94	15.35	16.72
8H	4H	13.81	14.26	14.84	15.29	16.65	13.44	13.88	14.46	14.91	16.28
	6H	14.44	14.81	15.49	15.88	17.24	14.05	14.42	15.10	15.49	16.86
	8H	14.66	14.98	15.71	16.04	17.42	14.26	14.59	15.32	15.64	17.03
	12H	14.78	15.07	15.84	16.12	17.54	14.37	14.66	15.43	15.71	17.13
12H	4H	13.80	14.20	14.84	15.25	16.62	13.43	13.83	14.47	14.88	16.25
	6H	14.47	14.79	15.52	15.85	17.23	14.09	14.42	15.15	15.48	16.86
	8H	14.70	14.99	15.77	16.04	17.46	14.32	14.61	15.38	15.66	17.08