

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: P908064

Luminaire Tested: DFN2DIP-HX3F0-060D070US840-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P908064
REPORT IS A COMBINATION OF REPORTS P899264 AND P896089
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX3F0-060D070US840-RLLFLL
Description: 3 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

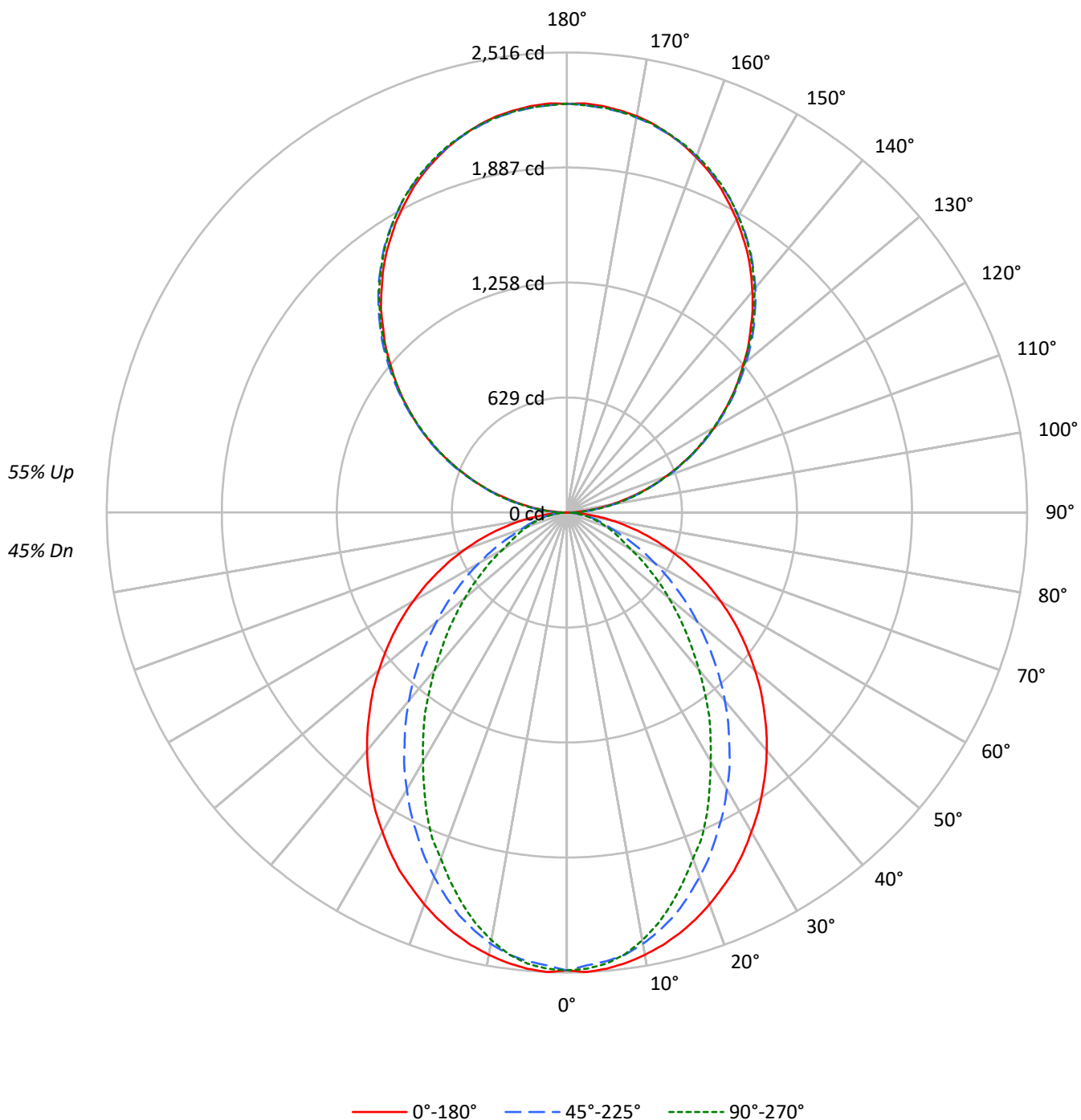
Lumens per Lamp: N/A
Luminaire Lumens: 11406.4 lumens
Efficiency: N/A
Efficacy: 103.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.84' x L: 3.28' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 110.1
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

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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	106	106	106	106	97	97	97	97	81	81	81	66	66	66	52	52	52
1	97	93	89	86	89	85	82	79	71	69	67	58	57	55	46	45	44
2	89	82	76	71	81	75	70	66	63	59	56	52	49	47	41	40	38
3	81	72	65	60	74	67	60	56	56	51	48	46	43	40	37	35	33
4	75	64	57	51	68	59	53	47	50	45	41	41	38	35	33	31	29
5	69	57	50	44	63	53	46	41	45	40	36	37	33	30	30	28	25
6	63	52	44	38	58	48	41	36	41	35	31	34	30	27	28	25	23
7	59	47	39	34	54	43	36	32	37	32	28	31	27	24	25	22	20
8	54	42	35	30	50	39	33	28	34	28	25	28	24	21	23	20	18
9	51	39	32	27	47	36	30	25	31	26	22	26	22	19	22	19	17
10	47	36	29	24	44	33	27	23	29	24	20	24	20	18	20	17	15

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2901	2901	2901
5°	2904	2853	2871
10°	2874	2795	2776
15°	2833	2700	2630
20°	2780	2571	2452
25°	2725	2427	2280
30°	2651	2279	2062
35°	2579	2120	1870
40°	2506	1956	1651
45°	2421	1774	1452
50°	2333	1590	1258
55°	2241	1395	1072
60°	2134	1190	881
65°	2011	983	791
70°	1862	789	714
75°	1675	691	646
80°	1404	574	555
85°	960	373	407

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 2421 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	234.7	2.1
10°-20°	644.3	5.6
20°-30°	904.6	7.9
30°-40°	986.1	8.6
40°-50°	906.3	7.9
50°-60°	711.7	6.2
60°-70°	463.3	4.1
70°-80°	238.5	2.1
80°-90°	67.2	0.6
90°-100°	138.3	1.2
100°-110°	439.6	3.9
110°-120°	752.2	6.6
120°-130°	989.3	8.7
130°-140°	1110.5	9.7
140°-150°	1088.9	9.5
150°-160°	913.5	8.0
160°-170°	605.8	5.3
170°-180°	211.7	1.9
0°-30°	1783.6	15.6
0°-40°	2769.6	24.3
0°-60°	4387.7	38.5
0°-90°	5156.7	45.2
90°-120°	1330.1	11.7
90°-150°	4518.8	39.6
90°-180°	6250.0	54.8
0°-180°	11406.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2504	2504	2504	2504	2504	
5°	2504	2493	2463	2484	2477	237
15°	2382	2357	2280	2237	2214	671
25°	2162	2090	1940	1847	1813	994
35°	1863	1747	1548	1405	1355	1166
45°	1523	1371	1133	972	918	1176
55°	1158	981	736	601	558	1035
65°	782	598	394	317	310	775
75°	417	258	181	165	163	441
85°	97	50	43	43	43	112
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°	2504.3	2504.3	2504.3	2504.3	2504.3
2.5°	2515.6	2504.3	2479.2	2502.0	2497.5
5°	2504.3	2493.0	2463.4	2483.9	2477.1
7.5°	2483.9	2470.3	2438.6	2447.5	2436.2
10°	2456.6	2440.7	2395.6	2388.6	2375.1
12.5°	2422.8	2402.3	2341.0	2327.5	2302.5
15°	2381.9	2356.8	2279.9	2236.9	2214.2
17.5°	2334.3	2297.9	2202.7	2152.9	2116.7
20°	2279.9	2234.4	2121.2	2064.7	2014.7
22.5°	2221.0	2168.8	2037.3	1960.4	1926.4
25°	2162.1	2089.5	1940.0	1847.1	1813.0
27.5°	2091.9	2014.7	1849.3	1742.7	1690.6
30°	2017.1	1930.8	1749.5	1634.1	1572.8
32.5°	1944.5	1840.2	1654.6	1518.4	1461.7
35°	1863.0	1747.4	1548.0	1405.1	1355.1
37.5°	1783.6	1658.8	1448.2	1291.7	1235.2
40°	1699.7	1563.9	1343.8	1183.0	1124.1
42.5°	1613.7	1468.6	1239.7	1071.9	1015.4
45°	1523.0	1371.0	1133.3	972.1	917.8
47.5°	1436.9	1276.1	1031.3	870.2	820.4
50°	1341.7	1180.8	931.5	775.0	727.6
52.5°	1248.6	1078.6	836.3	686.7	643.7
55°	1158.0	981.3	736.5	600.7	557.5
57.5°	1065.2	883.8	648.2	521.3	484.9
60°	970.0	788.7	555.2	439.8	403.4
62.5°	877.2	695.9	475.8	367.2	349.1
65°	781.9	598.2	394.4	317.4	310.4
67.5°	691.3	507.6	317.4	278.7	272.0
70°	596.0	419.3	262.8	240.2	231.1
72.5°	505.4	337.6	219.7	201.8	197.1
75°	417.0	258.2	181.3	165.4	163.3
77.5°	328.7	183.5	142.8	133.7	129.2
80°	246.9	131.5	108.7	99.8	99.8
82.5°	172.2	88.5	74.7	70.2	70.2
85°	97.4	49.8	43.0	43.0	43.0
87.5°	36.4	18.1	18.1	15.9	15.9
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	10.34	11.13	11.34	12.14	13.48	6.31	7.11	7.32	8.12	9.46
	3H	12.00	12.71	13.02	13.73	15.09	7.49	8.20	8.51	9.22	10.58
	4H	12.61	13.28	13.63	14.30	15.67	7.94	8.61	8.97	9.63	11.00
	6H	13.02	13.64	14.06	14.66	16.04	8.26	8.87	9.29	9.90	11.28
	8H	13.14	13.73	14.18	14.77	16.15	8.34	8.93	9.39	9.97	11.35
	12H	13.20	13.76	14.24	14.79	16.19	8.38	8.94	9.43	9.98	11.38
4H	2H	10.35	11.02	11.38	12.04	13.41	6.90	7.57	7.93	8.59	9.96
	3H	12.17	12.72	13.21	13.77	15.16	8.24	8.80	9.28	9.85	11.23
	4H	12.85	13.36	13.90	14.40	15.81	8.78	9.29	9.83	10.34	11.74
	6H	13.36	13.79	14.41	14.86	16.26	9.20	9.63	10.25	10.70	12.10
	8H	13.53	13.94	14.58	14.99	16.41	9.32	9.73	10.38	10.79	12.20
	12H	13.62	13.98	14.69	15.06	16.48	9.38	9.75	10.46	10.82	12.24
8H	4H	12.81	13.22	13.87	14.28	15.70	9.06	9.47	10.11	10.52	11.94
	6H	13.37	13.71	14.45	14.81	16.22	9.57	9.90	10.65	11.00	12.42
	8H	13.58	13.88	14.67	14.96	16.39	9.75	10.05	10.84	11.13	12.57
	12H	13.71	13.97	14.81	15.05	16.53	9.87	10.13	10.96	11.21	12.68
12H	4H	12.76	13.13	13.84	14.21	15.63	9.06	9.43	10.13	10.50	11.92
	6H	13.35	13.64	14.43	14.73	16.16	9.61	9.91	10.70	10.99	12.43
	8H	13.56	13.82	14.65	14.90	16.37	9.82	10.08	10.91	11.16	12.63