

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: P908014

Luminaire Tested: DFN2DIP-HX3F0-040D070US840-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P908014
REPORT IS A COMBINATION OF REPORTS P899259 AND P896089
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX3F0-040D070US840-FLLFLL
Description: 3 foot, Hexagon Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

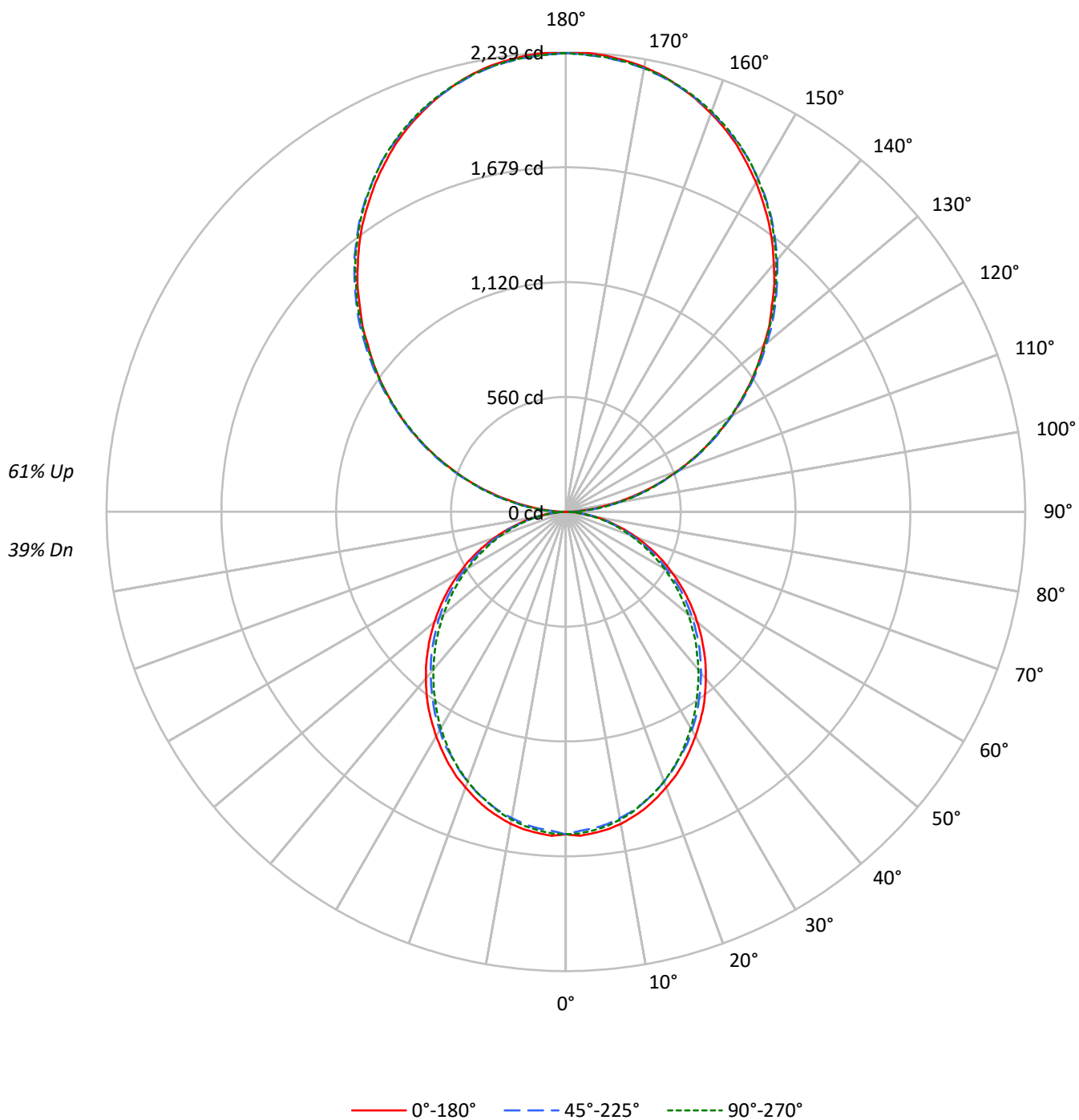
Lumens per Lamp: N/A
Luminaire Lumens: 10255.2 lumens
Efficiency: N/A
Efficacy: 116.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.84' x L: 3.28' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 87.9
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9968
Total Harmonic Distortion (THDi): 0.064
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	95	95	95	95	77	77	77	61	61	61	46	46	46
1	95	91	87	84	86	83	80	77	68	65	63	54	52	51	41	40	39
2	87	79	73	68	79	72	67	63	59	56	52	47	45	42	36	34	33
3	79	70	63	57	72	64	58	53	52	48	44	42	38	36	32	30	28
4	72	62	54	48	65	56	50	44	46	41	37	37	33	31	28	26	24
5	66	55	47	41	60	50	43	38	41	36	32	33	29	27	26	23	21
6	61	49	41	36	55	45	38	33	37	32	28	30	26	23	23	20	18
7	56	44	37	31	51	41	34	29	34	28	25	27	23	20	21	18	16
8	52	40	33	27	47	37	30	26	31	26	22	25	21	18	19	17	15
9	49	37	29	24	44	34	27	23	28	23	19	23	19	16	18	15	13
10	45	34	26	22	41	31	25	20	26	21	18	21	17	15	17	14	12

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1821	1821	1821
5°	1823	1794	1806
10°	1807	1769	1781
15°	1780	1738	1742
20°	1743	1697	1702
25°	1706	1647	1655
30°	1661	1601	1597
35°	1618	1546	1535
40°	1564	1491	1476
45°	1511	1436	1416
50°	1453	1378	1346
55°	1392	1311	1282
60°	1324	1232	1208
65°	1248	1149	1121
70°	1152	1048	1027
75°	1020	928	939
80°	860	773	773
85°	610	512	501

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 2103 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	147.9	1.4
10°-20°	416.2	4.1
20°-30°	611.7	6.0
30°-40°	710.5	6.9
40°-50°	709.6	6.9
50°-60°	618.7	6.0
60°-70°	457.4	4.5
70°-80°	258.8	2.5
80°-90°	74.6	0.7
90°-100°	138.3	1.3
100°-110°	439.6	4.3
110°-120°	752.2	7.3
120°-130°	989.3	9.6
130°-140°	1110.5	10.8
140°-150°	1088.9	10.6
150°-160°	913.5	8.9
160°-170°	605.8	5.9
170°-180°	211.7	2.1
0°-30°	1175.9	11.5
0°-40°	1886.3	18.4
0°-60°	3214.6	31.3
0°-90°	4005.4	39.1
90°-120°	1330.1	13.0
90°-150°	4518.8	44.1
90°-180°	6250.0	60.9
0°-180°	10255.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1572	1572	1572	1572	1572	
5°	1572	1566	1549	1561	1558	149
15°	1496	1487	1468	1474	1466	421
25°	1354	1342	1316	1319	1316	623
35°	1168	1153	1129	1120	1112	730
45°	951	940	917	901	895	734
55°	720	710	692	674	667	643
65°	485	476	461	447	440	480
75°	254	251	243	234	237	271
85°	62	60	59	54	53	69
90°	2	24	66	62	64	10
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°	1571.8	1571.8	1571.8	1571.8	1571.8
2.5°	1580.9	1573.4	1556.7	1571.8	1568.9
5°	1571.8	1565.8	1549.1	1561.2	1558.3
7.5°	1561.2	1552.2	1535.5	1547.7	1544.7
10°	1544.7	1534.1	1516.0	1528.0	1523.5
12.5°	1521.9	1512.9	1494.8	1502.4	1499.2
15°	1496.2	1487.2	1467.5	1473.6	1466.1
17.5°	1464.5	1455.5	1435.8	1443.3	1435.8
20°	1429.7	1420.7	1399.6	1404.0	1398.2
22.5°	1395.0	1381.4	1361.7	1361.7	1358.7
25°	1354.1	1342.1	1316.5	1319.4	1316.5
27.5°	1308.8	1298.2	1278.7	1274.1	1266.7
30°	1263.5	1251.4	1228.8	1224.3	1218.2
32.5°	1215.2	1206.2	1181.9	1172.9	1166.7
35°	1168.3	1153.3	1129.0	1119.9	1112.4
37.5°	1115.4	1101.8	1077.5	1067.0	1059.4
40°	1061.1	1048.8	1024.6	1011.2	1005.1
42.5°	1008.1	995.9	971.9	956.6	947.7
45°	950.7	940.2	917.4	900.9	894.7
47.5°	894.7	884.1	860.0	843.3	834.4
50°	835.8	828.2	807.1	785.9	778.3
52.5°	778.3	767.8	748.2	731.5	720.9
55°	719.5	710.3	692.3	674.1	666.6
57.5°	660.5	653.0	633.2	615.1	609.0
60°	601.5	595.5	574.4	557.7	553.2
62.5°	544.1	533.5	518.5	503.3	497.3
65°	485.2	476.1	461.0	447.4	439.9
67.5°	424.7	417.1	403.6	393.0	387.0
70°	368.8	362.7	349.1	338.5	332.5
72.5°	311.4	305.3	297.8	287.2	282.7
75°	253.9	251.0	243.3	234.3	237.3
77.5°	202.5	196.4	193.4	188.8	184.4
80°	151.2	149.6	146.5	142.1	139.1
82.5°	102.8	102.8	101.4	95.2	95.2
85°	61.9	60.5	59.0	54.3	52.9
87.5°	27.3	24.2	21.2	16.7	15.0
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	8.20	8.97	9.25	10.03	11.44	7.77	8.55	8.82	9.60	11.02
	3H	9.85	10.54	10.90	11.60	13.04	9.38	10.07	10.44	11.13	12.57
	4H	10.43	11.08	11.49	12.14	13.59	9.96	10.61	11.03	11.68	13.12
	6H	10.82	11.42	11.89	12.48	13.94	10.35	10.95	11.42	12.01	13.47
	8H	10.92	11.49	12.00	12.57	14.02	10.45	11.02	11.53	12.10	13.55
	12H	10.96	11.50	12.04	12.58	14.05	10.48	11.03	11.57	12.10	13.58
4H	2H	8.65	9.31	9.73	10.37	11.81	8.31	8.96	9.38	10.02	11.47
	3H	10.50	11.05	11.58	12.14	13.59	10.11	10.66	11.19	11.75	13.20
	4H	11.20	11.71	12.29	12.79	14.26	10.80	11.30	11.89	12.38	13.86
	6H	11.71	12.14	12.80	13.24	14.71	11.30	11.73	12.40	12.84	14.31
	8H	11.85	12.25	12.95	13.35	14.84	11.44	11.85	12.54	12.94	14.43
	12H	11.92	12.28	13.03	13.39	14.88	11.50	11.86	12.61	12.97	14.46
8H	4H	11.39	11.79	12.49	12.89	14.38	11.03	11.43	12.13	12.53	14.02
	6H	12.01	12.34	13.13	13.48	14.96	11.65	11.98	12.77	13.12	14.60
	8H	12.22	12.51	13.35	13.63	15.14	11.86	12.15	12.98	13.27	14.77
	12H	12.35	12.60	13.47	13.72	15.26	11.97	12.22	13.09	13.34	14.88
12H	4H	11.37	11.74	12.48	12.84	14.34	11.02	11.39	12.13	12.49	13.99
	6H	12.04	12.33	13.16	13.45	14.95	11.69	11.98	12.81	13.10	14.60
	8H	12.27	12.52	13.40	13.64	15.18	11.91	12.17	13.04	13.28	14.83