

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: P907990

Luminaire Tested: DFN2DIP-HX3F0-030D070US840-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P907990
REPORT IS A COMBINATION OF REPORTS P899257 AND P896089
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX3F0-030D070US840-FLLFLL
Description: 3 foot, Hexagon Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

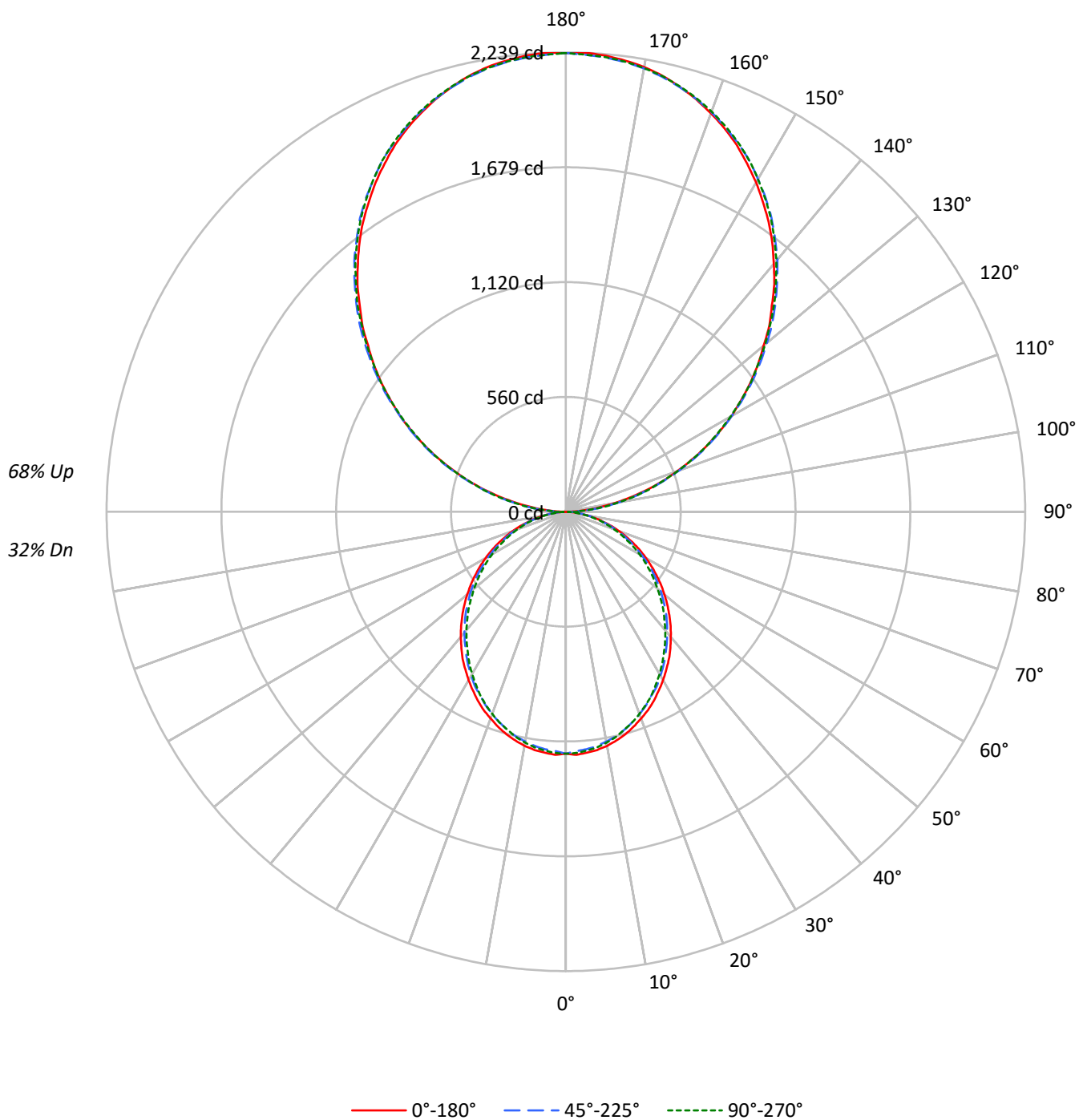
Lumens per Lamp: N/A
Luminaire Lumens: 9255.5 lumens
Efficiency: N/A
Efficacy: 120.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.84' x L: 3.28' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 77.1
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.983
Total Harmonic Distortion (THDi): 0.073
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	103	103	103	103	93	93	93	93	74	74	74	56	56	56	40	40	40
1	94	90	86	82	84	81	78	75	64	62	60	49	48	47	35	34	34
2	85	78	72	67	77	71	66	61	56	53	50	43	41	39	31	30	28
3	78	69	62	56	70	62	56	51	50	45	42	38	35	33	28	26	24
4	71	61	53	47	64	55	48	43	44	39	36	34	31	28	25	23	21
5	65	54	46	40	59	49	42	37	39	34	31	30	27	24	22	20	18
6	60	48	40	35	54	44	37	32	35	30	27	27	24	21	20	18	16
7	55	43	36	30	50	40	33	28	32	27	23	25	21	19	18	16	14
8	51	39	32	27	46	36	29	25	29	24	21	23	19	17	17	14	13
9	48	36	29	24	43	33	26	22	27	22	18	21	17	15	15	13	11
10	44	33	26	21	40	30	24	20	24	20	16	19	16	13	14	12	10

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1365	1365	1365
5°	1367	1346	1355
10°	1355	1326	1336
15°	1335	1304	1306
20°	1307	1272	1276
25°	1280	1235	1241
30°	1246	1200	1198
35°	1213	1160	1151
40°	1173	1118	1107
45°	1134	1077	1062
50°	1090	1034	1010
55°	1044	983	961
60°	993	924	906
65°	936	862	841
70°	864	786	770
75°	765	696	704
80°	645	580	580
85°	458	384	376

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°	111.0	1.2
10°-20°	312.2	3.4
20°-30°	458.8	5.0
30°-40°	532.8	5.8
40°-50°	532.2	5.7
50°-60°	464.1	5.0
60°-70°	343.1	3.7
70°-80°	194.1	2.1
80°-90°	57.6	0.6
90°-100°	138.3	1.5
100°-110°	439.6	4.7
110°-120°	752.2	8.1
120°-130°	989.3	10.7
130°-140°	1110.5	12.0
140°-150°	1088.9	11.8
150°-160°	913.5	9.9
160°-170°	605.8	6.5
170°-180°	211.7	2.3
0°-30°	881.9	9.5
0°-40°	1414.7	15.3
0°-60°	2411.0	26.0
0°-90°	3005.7	32.5
90°-120°	1330.1	14.4
90°-150°	4518.8	48.8
90°-180°	6250.0	67.5
0°-180°	9255.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1179	1179	1179	1179	1179	
5°	1179	1174	1162	1171	1169	112
15°	1122	1116	1101	1105	1100	316
25°	1016	1007	987	990	987	467
35°	876	865	847	840	834	547
45°	713	705	688	676	671	550
55°	540	533	519	506	500	482
65°	364	357	346	336	330	360
75°	190	188	182	176	178	203
85°	46	45	44	41	40	52
90°	2	24	66	62	64	9
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°	1178.8	1178.8	1178.8	1178.8	1178.8
2.5°	1185.7	1180.0	1167.5	1178.8	1176.7
5°	1178.8	1174.4	1161.9	1170.9	1168.7
7.5°	1170.9	1164.2	1151.7	1160.8	1158.5
10°	1158.5	1150.5	1137.0	1146.0	1142.7
12.5°	1141.5	1134.7	1121.2	1126.7	1124.5
15°	1122.2	1115.5	1100.7	1105.2	1099.5
17.5°	1098.3	1091.7	1076.8	1082.5	1076.8
20°	1072.3	1065.5	1049.7	1053.0	1048.5
22.5°	1046.3	1036.1	1021.3	1021.3	1019.0
25°	1015.6	1006.6	987.3	989.6	987.3
27.5°	981.6	973.6	959.0	955.6	950.0
30°	947.7	938.6	921.6	918.2	913.6
32.5°	911.4	904.6	886.5	879.6	875.0
35°	876.3	864.9	846.8	839.9	834.2
37.5°	836.6	826.4	808.2	800.2	794.6
40°	795.8	786.7	768.5	758.4	753.9
42.5°	756.1	747.0	728.9	717.5	710.7
45°	713.1	705.1	688.0	675.6	671.1
47.5°	671.1	663.2	645.0	632.5	625.7
50°	626.8	621.2	605.3	589.5	583.8
52.5°	583.8	575.8	561.2	548.7	540.7
55°	539.7	532.8	519.2	505.6	500.0
57.5°	495.3	489.7	474.9	461.3	456.8
60°	451.1	446.7	430.8	418.3	415.0
62.5°	408.1	400.1	388.8	377.5	372.9
65°	364.0	357.1	345.8	335.6	329.9
67.5°	318.6	312.9	302.7	294.8	290.2
70°	276.6	272.1	261.9	253.9	249.4
72.5°	233.6	228.9	223.3	215.4	212.1
75°	190.4	188.2	182.5	175.7	178.0
77.5°	151.9	147.3	145.0	141.7	138.4
80°	113.4	112.2	109.9	106.5	104.3
82.5°	77.1	77.1	76.0	71.4	71.4
85°	46.5	45.3	44.2	40.8	39.7
87.5°	20.4	18.2	15.9	12.5	11.3
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	6.42	7.14	7.51	8.24	9.74	5.99	6.72	7.09	7.81	9.31
	3H	8.06	8.71	9.17	9.81	11.33	7.59	8.24	8.70	9.34	10.86
	4H	8.64	9.25	9.75	10.36	11.88	8.17	8.79	9.28	9.89	11.41
	6H	9.03	9.59	10.15	10.70	12.23	8.56	9.12	9.68	10.23	11.76
	8H	9.12	9.66	10.25	10.78	12.31	8.65	9.19	9.78	10.31	11.84
	12H	9.16	9.68	10.29	10.79	12.34	8.69	9.20	9.82	10.31	11.87
4H	2H	6.86	7.48	7.98	8.58	10.10	6.52	7.13	7.64	8.24	9.76
	3H	8.71	9.22	9.83	10.35	11.89	8.32	8.83	9.44	9.96	11.50
	4H	9.41	9.88	10.54	11.00	12.56	9.01	9.48	10.14	10.60	12.15
	6H	9.91	10.31	11.05	11.45	13.00	9.50	9.91	10.64	11.05	12.60
	8H	10.05	10.43	11.19	11.56	13.13	9.64	10.02	10.78	11.15	12.72
	12H	10.11	10.46	11.27	11.60	13.17	9.70	10.04	10.85	11.18	12.75
8H	4H	9.59	9.97	10.73	11.10	12.67	9.23	9.61	10.37	10.74	12.31
	6H	10.21	10.52	11.37	11.69	13.26	9.85	10.16	11.01	11.34	12.90
	8H	10.42	10.69	11.59	11.85	13.43	10.06	10.33	11.22	11.48	13.07
	12H	10.54	10.78	11.71	11.93	13.55	10.16	10.40	11.33	11.55	13.17
12H	4H	9.57	9.91	10.72	11.06	12.63	9.22	9.56	10.37	10.71	12.28
	6H	10.24	10.51	11.40	11.66	13.24	9.89	10.16	11.05	11.31	12.90
	8H	10.46	10.70	11.63	11.85	13.47	10.11	10.35	11.28	11.50	13.12