

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: P907991

Luminaire Tested: DFN2DIP-HX3F0-030D070US840-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P907991
REPORT IS A COMBINATION OF REPORTS P900777 AND P897645
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX3F0-030D070US840-FLLONL
Description: 3 foot, Hexagon Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

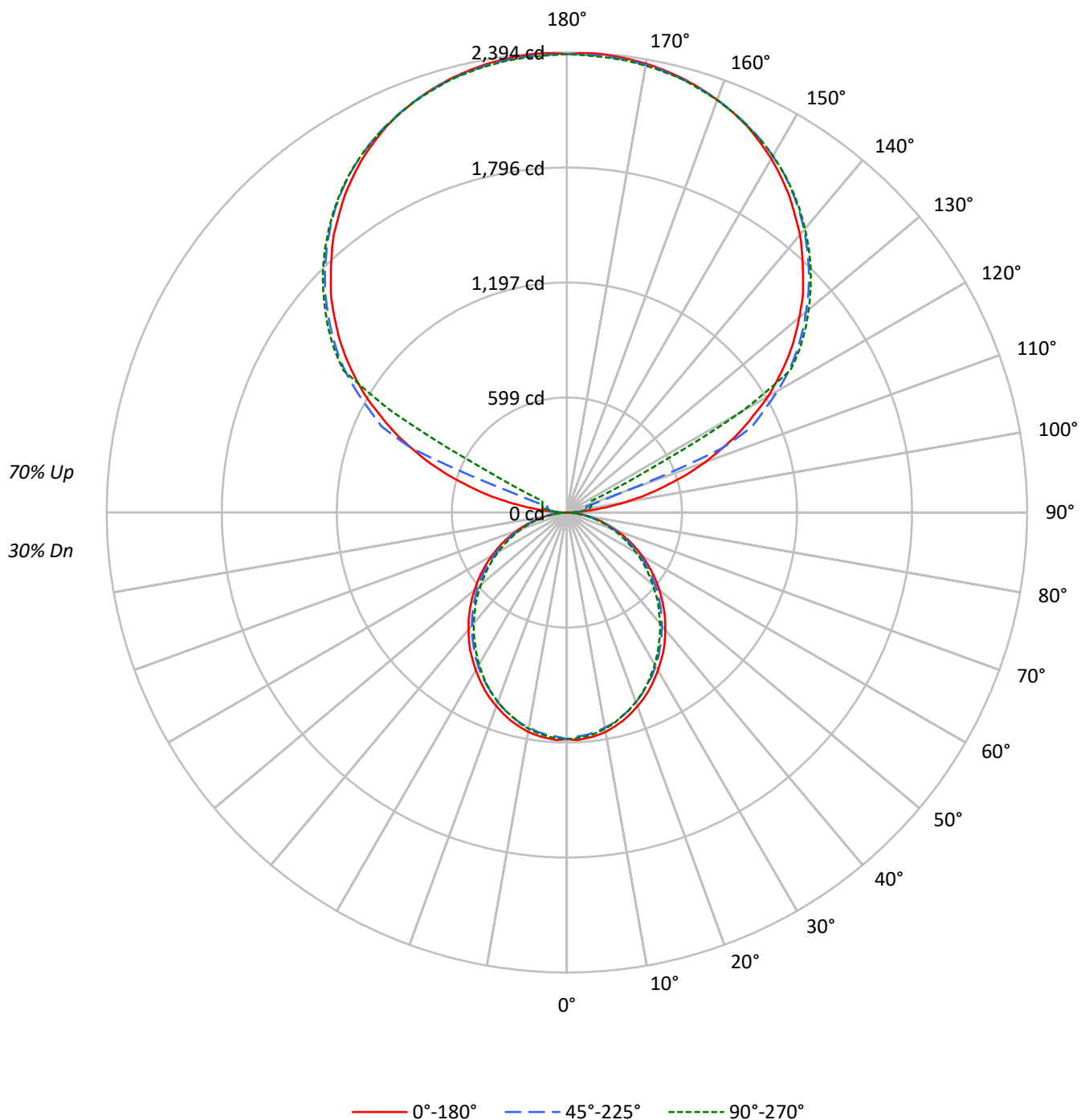
Lumens per Lamp: N/A
Luminaire Lumens: 9997.7 lumens
Efficiency: N/A
Efficacy: 129.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.84' x L: 3.28' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 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	102	102	102	102	92	92	92	92	72	72	72	54	54	54	38	38	38
1	93	89	85	82	84	80	77	74	63	61	59	48	46	45	33	33	32
2	85	78	72	67	76	70	65	61	55	52	49	42	40	38	29	28	27
3	77	68	61	56	69	62	56	51	49	45	41	37	34	32	26	24	23
4	71	60	53	47	63	54	48	43	43	39	35	33	30	27	23	21	20
5	65	54	46	40	58	48	42	37	39	34	30	29	26	23	21	19	17
6	60	48	40	35	53	43	37	32	35	30	26	27	23	20	19	17	15
7	55	43	35	30	49	39	32	28	31	26	23	24	21	18	17	15	13
8	51	39	32	26	46	35	29	24	28	24	20	22	19	16	16	14	12
9	47	36	28	23	42	32	26	22	26	21	18	20	17	14	15	12	11
10	44	32	26	21	40	30	23	19	24	19	16	19	15	13	14	11	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: 1531 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	111.0	1.1
10°-20°	312.2	3.1
20°-30°	458.8	4.6
30°-40°	532.8	5.3
40°-50°	532.2	5.3
50°-60°	464.1	4.6
60°-70°	343.1	3.4
70°-80°	194.1	1.9
80°-90°	55.4	0.6
90°-100°	78.7	0.8
100°-110°	293.3	2.9
110°-120°	777.8	7.8
120°-130°	1290.0	12.9
130°-140°	1370.3	13.7
140°-150°	1273.5	12.7
150°-160°	1023.9	10.2
160°-170°	659.7	6.6
170°-180°	227.1	2.3
0°-30°	881.9	8.8
0°-40°	1414.7	14.2
0°-60°	2411.0	24.1
0°-90°	3003.5	30.0
90°-120°	1149.7	11.5
90°-150°	5083.5	50.8
90°-180°	6994.0	70.0
0°-180°	9997.7	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	21	34	43	47	9
95°	112	55	67	76	74	133
105°	525	577	105	124	131	561
115°	993	1022	1065	266	142	977
125°	1403	1426	1459	1471	1476	1252
135°	1737	1764	1780	1797	1794	1342
145°	2015	2013	2042	2054	2046	1260
155°	2218	2203	2224	2234	2220	1022
165°	2337	2327	2332	2344	2332	660
175°	2391	2379	2382	2394	2377	228
180°	2386	2386	2386	2386	2386	

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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°	1.6	20.7	34.4	43.2	46.6
92.5°	43.2	36.3	41.4	44.9	46.6
95°	112.1	55.1	67.3	76.0	74.2
97.5°	201.9	60.5	88.0	93.3	94.9
100°	305.7	69.1	98.4	112.1	115.6
102.5°	419.4	416.2	101.9	120.8	126.0
105°	524.8	576.6	105.3	124.2	131.2
107.5°	647.3	690.4	108.9	127.7	134.7
110°	764.9	800.9	302.2	129.6	136.3

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	875.4	906.3	877.0	132.8	138.1
115°	992.6	1021.9	1065.1	265.9	141.7
117.5°	1094.5	1128.9	1158.4	911.4	459.2
120°	1208.4	1234.3	1265.5	1286.2	1053.1
122.5°	1304.9	1332.6	1367.4	1377.6	1379.4
125°	1403.4	1425.9	1458.8	1470.9	1475.9
127.5°	1493.2	1517.3	1543.4	1560.6	1562.3
130°	1577.8	1605.5	1624.4	1643.5	1641.8
132.5°	1664.2	1686.7	1705.6	1721.1	1719.5
135°	1736.7	1764.3	1779.8	1797.2	1793.7
137.5°	1812.5	1833.3	1850.7	1867.9	1862.8
140°	1886.7	1900.7	1919.6	1935.1	1926.5
142.5°	1949.0	1961.2	1983.5	1997.2	1988.6
145°	2014.7	2012.9	2042.2	2054.3	2045.7
147.5°	2071.4	2066.4	2095.7	2104.3	2097.5
150°	2126.8	2114.8	2142.4	2152.6	2144.0
152.5°	2173.3	2159.6	2185.5	2195.9	2183.8
155°	2218.3	2202.8	2223.5	2233.8	2220.1
157.5°	2254.5	2240.8	2256.3	2268.5	2254.5
160°	2285.7	2275.2	2285.7	2295.9	2283.8
162.5°	2313.2	2302.9	2311.5	2323.6	2308.0
165°	2337.3	2327.1	2332.2	2344.3	2332.2
167.5°	2356.4	2345.9	2351.3	2363.4	2347.8
170°	2372.0	2361.6	2365.0	2377.1	2361.6
172.5°	2382.3	2372.0	2375.5	2387.5	2372.0
175°	2390.9	2378.7	2382.3	2394.3	2377.1
177.5°	2394.3	2382.3	2384.1	2396.2	2380.6
180°	2385.7	2385.7	2385.7	2385.7	2385.7

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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	6.10	6.81	7.21	7.92	9.45	5.67	6.38	6.79	7.49	9.02
	3H	7.74	8.38	8.86	9.49	11.04	7.27	7.91	8.39	9.02	10.57
	4H	8.32	8.92	9.45	10.04	11.59	7.85	8.45	8.98	9.57	11.12
	6H	8.70	9.26	9.84	10.38	11.94	8.23	8.79	9.37	9.91	11.47
	8H	8.80	9.33	9.94	10.46	12.02	8.33	8.86	9.47	9.99	11.55
	12H	8.84	9.34	9.99	10.47	12.05	8.37	8.87	9.51	9.99	11.57
4H	2H	6.54	7.14	7.68	8.26	9.81	6.20	6.80	7.34	7.92	9.47
	3H	8.39	8.89	9.53	10.03	11.59	8.00	8.50	9.14	9.64	11.20
	4H	9.09	9.55	10.23	10.68	12.26	8.69	9.15	9.83	10.28	11.86
	6H	9.59	9.98	10.74	11.13	12.71	9.18	9.58	10.33	10.73	12.31
	8H	9.73	10.10	10.88	11.24	12.83	9.32	9.69	10.47	10.84	12.43
	12H	9.79	10.12	10.96	11.28	12.88	9.37	9.71	10.54	10.87	12.46
8H	4H	9.27	9.64	10.42	10.78	12.37	8.91	9.28	10.06	10.42	12.02
	6H	9.88	10.19	11.06	11.38	12.96	9.52	9.83	10.70	11.02	12.60
	8H	10.10	10.36	11.27	11.53	13.14	9.73	10.00	10.91	11.16	12.77
	12H	10.22	10.45	11.40	11.61	13.26	9.84	10.07	11.02	11.23	12.88
12H	4H	9.25	9.58	10.41	10.74	12.33	8.90	9.23	10.06	10.39	11.98
	6H	9.91	10.18	11.09	11.34	12.95	9.56	9.83	10.74	10.99	12.60
	8H	10.14	10.37	11.32	11.54	13.18	9.79	10.02	10.97	11.18	12.82

END OF REPORT