

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: P907993

Luminaire Tested: DFN2DIP-HX3F0-030D070US840-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P907993
REPORT IS A COMBINATION OF REPORTS P900778 AND P897645
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX3F0-030D070US840-RLLONL
Description: 3 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

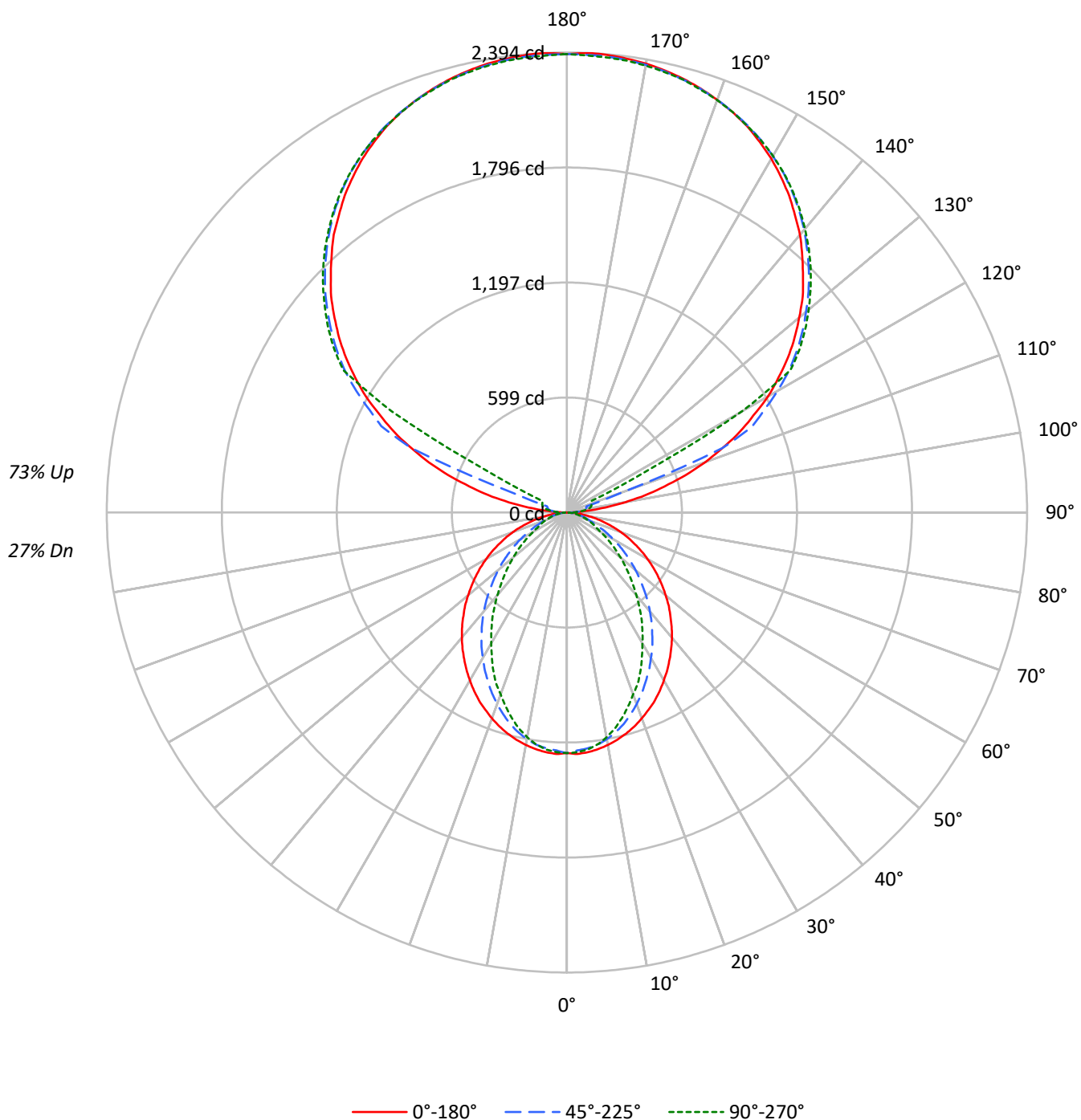
Lumens per Lamp: N/A
Luminaire Lumens: 9573.5 lumens
Efficiency: N/A
Efficacy: 124.2 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.84' x L: 3.28' x H: 0.1')
CIE Type: Semi-Indirect

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	91	91	91	91	71	71	71	52	52	52	35	35	35
1	93	89	85	82	83	79	76	74	62	60	58	46	45	44	31	31	30
2	85	78	72	67	75	70	65	61	55	51	49	41	39	37	28	27	26
3	77	69	62	56	69	62	56	51	48	44	41	36	34	31	25	23	22
4	71	61	53	48	63	55	48	43	43	39	35	32	29	27	22	21	19
5	65	54	46	41	58	49	42	37	39	34	30	29	26	23	20	18	17
6	60	48	41	35	53	44	37	32	35	30	26	26	23	21	18	16	15
7	55	44	36	31	49	39	33	28	31	27	23	24	21	18	17	15	13
8	51	40	32	27	46	36	29	25	29	24	21	22	19	16	16	13	12
9	48	36	29	24	43	33	26	22	26	22	18	20	17	15	14	12	11
10	44	33	26	22	40	30	24	20	24	20	16	19	15	13	13	11	10

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1450	1450	1450
5°	1452	1426	1436
10°	1437	1397	1388
15°	1417	1350	1315
20°	1390	1286	1226
25°	1362	1213	1140
30°	1326	1139	1031
35°	1290	1060	935
40°	1253	978	826
45°	1211	887	726
50°	1167	795	629
55°	1120	697	536
60°	1067	595	441
65°	1006	491	395
70°	931	395	357
75°	837	346	323
80°	702	287	277
85°	480	187	204

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°	117.4	1.2
10°-20°	322.1	3.4
20°-30°	452.3	4.7
30°-40°	493.0	5.1
40°-50°	453.1	4.7
50°-60°	355.9	3.7
60°-70°	231.6	2.4
70°-80°	119.2	1.2
80°-90°	34.6	0.4
90°-100°	78.7	0.8
100°-110°	293.3	3.1
110°-120°	777.8	8.1
120°-130°	1290.0	13.5
130°-140°	1370.3	14.3
140°-150°	1273.5	13.3
150°-160°	1023.9	10.7
160°-170°	659.7	6.9
170°-180°	227.1	2.4
0°-30°	891.8	9.3
0°-40°	1384.8	14.5
0°-60°	2193.8	22.9
0°-90°	2579.3	26.9
90°-120°	1149.7	12.0
90°-150°	5083.5	53.1
90°-180°	6994.0	73.1
0°-180°	9573.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1252	1252	1252	1252	1252	
5°	1252	1246	1232	1242	1238	119
15°	1191	1178	1140	1118	1107	336
25°	1081	1045	970	924	906	497
35°	932	874	774	703	678	583
45°	762	686	567	486	459	588
55°	579	491	368	300	279	517
65°	391	299	197	159	155	388
75°	208	129	91	83	82	220
85°	49	25	22	22	22	56
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°	1252.1	1252.1	1252.1	1252.1	1252.1
2.5°	1257.8	1252.1	1239.6	1251.0	1248.8
5°	1252.1	1246.5	1231.7	1241.9	1238.5
7.5°	1241.9	1235.2	1219.3	1223.8	1218.1
10°	1228.3	1220.4	1197.8	1194.3	1187.6
12.5°	1211.3	1201.1	1170.5	1163.8	1151.2
15°	1190.9	1178.4	1139.9	1118.4	1107.1
17.5°	1167.1	1149.0	1101.4	1076.5	1058.3
20°	1139.9	1117.2	1060.6	1032.4	1007.3
22.5°	1110.5	1084.4	1018.7	980.2	963.2
25°	1081.1	1044.7	970.0	923.5	906.5
27.5°	1045.9	1007.3	924.6	871.4	845.3
30°	1008.6	965.4	874.7	817.1	786.4
32.5°	972.2	920.1	827.3	759.2	730.8
35°	931.5	873.6	774.0	702.6	677.6
37.5°	891.8	829.4	724.1	645.8	617.6
40°	849.9	781.9	672.0	591.5	562.1
42.5°	806.8	734.4	619.9	535.9	507.7
45°	761.5	685.5	566.6	486.0	458.9
47.5°	718.4	638.0	515.6	435.1	410.2
50°	670.9	590.4	465.7	387.5	363.8
52.5°	624.3	539.4	418.2	343.4	321.8
55°	579.0	490.6	368.2	300.3	278.8
57.5°	532.6	441.9	324.2	260.6	242.5
60°	484.9	394.4	277.6	219.8	201.8
62.5°	438.6	347.9	237.9	183.6	174.6
65°	390.9	299.1	197.1	158.6	155.2
67.5°	345.7	253.8	158.6	139.4	135.9
70°	298.0	209.6	131.4	120.1	115.5
72.5°	252.7	168.7	109.9	100.9	98.6
75°	208.4	129.2	90.7	82.7	81.6
77.5°	164.3	91.7	71.4	66.9	64.5
80°	123.5	65.7	54.3	49.9	49.9
82.5°	86.0	44.2	37.4	35.1	35.1
85°	48.7	24.8	21.5	21.5	21.5
87.5°	18.2	9.0	9.0	8.0	8.0
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	5.72	6.40	6.86	7.52	9.09	1.70	2.37	2.84	3.50	5.06
	3H	7.38	7.98	8.53	9.12	10.70	2.87	3.47	4.02	4.61	6.19
	4H	7.98	8.55	9.13	9.68	11.27	3.31	3.88	4.47	5.02	6.60
	6H	8.38	8.91	9.55	10.04	11.64	3.62	4.15	4.78	5.28	6.88
	8H	8.50	9.00	9.67	10.15	11.74	3.70	4.20	4.87	5.35	6.95
	12H	8.56	9.03	9.72	10.17	11.79	3.74	4.21	4.91	5.36	6.97
4H	2H	5.72	6.29	6.88	7.43	9.01	2.27	2.84	3.43	3.97	5.56
	3H	7.53	8.00	8.69	9.16	10.76	3.60	4.08	4.77	5.24	6.84
	4H	8.21	8.64	9.38	9.79	11.41	4.14	4.58	5.31	5.72	7.34
	6H	8.71	9.08	9.88	10.25	11.86	4.55	4.92	5.72	6.09	7.70
	8H	8.87	9.22	10.05	10.38	12.01	4.67	5.02	5.84	6.18	7.81
	12H	8.96	9.27	10.15	10.45	12.08	4.72	5.04	5.91	6.21	7.84
8H	4H	8.16	8.51	9.33	9.67	11.30	4.40	4.75	5.58	5.91	7.54
	6H	8.71	9.00	9.91	10.21	11.83	4.91	5.20	6.10	6.40	8.02
	8H	8.92	9.17	10.12	10.36	12.00	5.10	5.35	6.29	6.53	8.17
	12H	9.05	9.27	10.25	10.45	12.13	5.20	5.42	6.41	6.60	8.28
12H	4H	8.11	8.42	9.30	9.60	11.23	4.40	4.72	5.59	5.89	7.52
	6H	8.69	8.94	9.89	10.12	11.76	4.96	5.21	6.15	6.39	8.03
	8H	8.90	9.12	10.10	10.30	11.97	5.16	5.38	6.36	6.55	8.23

END OF REPORT