

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: P927568

Luminaire Tested: DFN2DIP-HX4F0-050D070US840-FLLONL

Issue Date: 12/12/2024

Test Information

Test Method: LM-79-2019
Report Number: P927568
REPORT IS A COMBINATION OF REPORTS P900875 AND P896187
Test Lab: INNOVATION CENTER
Issue Date: 12/12/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX4F0-050D070US840-FLLONL
Description: 4 foot, Hexagon Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

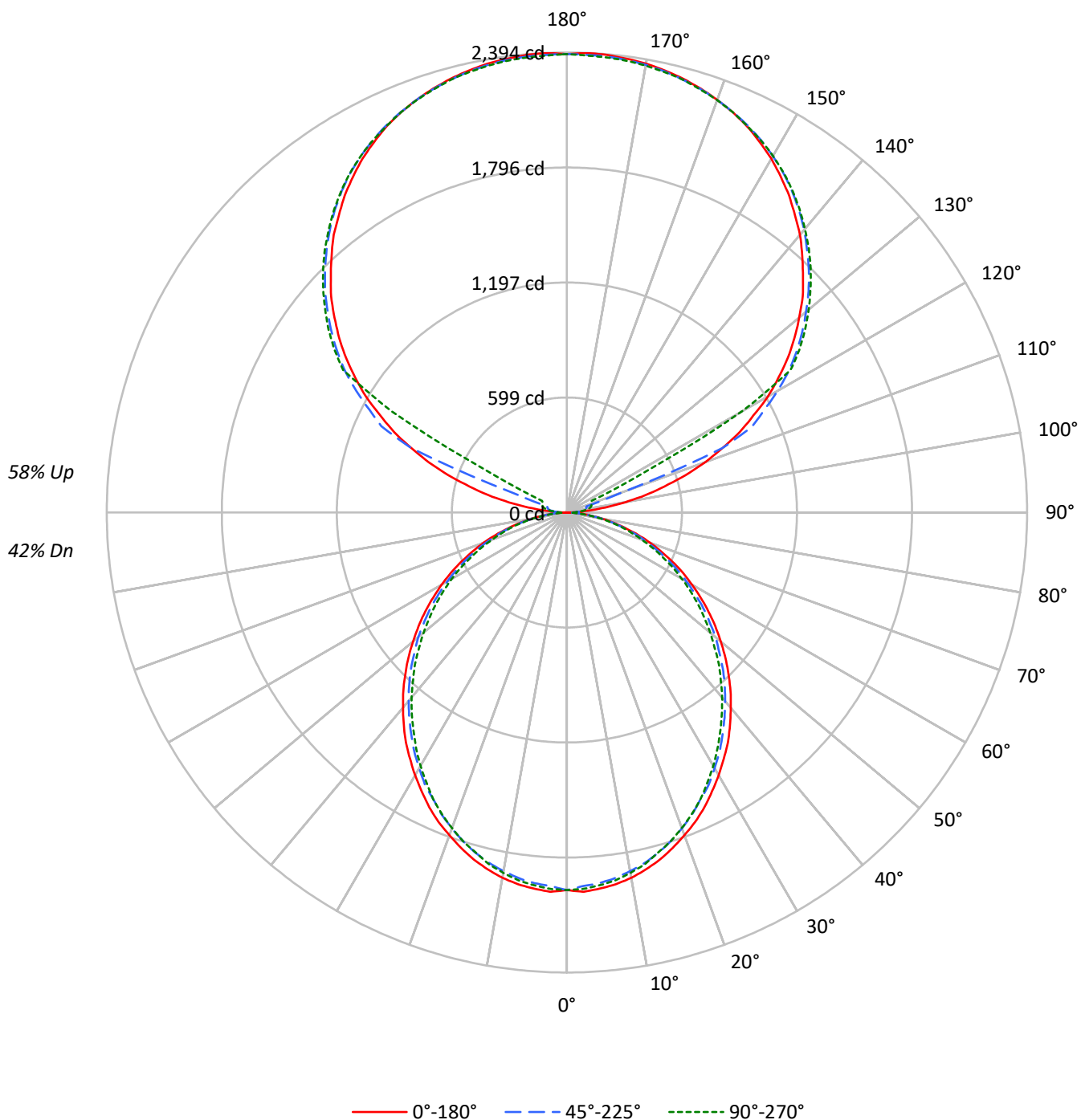
Lumens per Lamp: N/A
Luminaire Lumens: 11996.4 lumens
Efficiency: N/A
Efficacy: 125.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.54' x L: 4.09' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 95.7
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9957
Total Harmonic Distortion (THDi): 0.049
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
RCR																	
0	105	105	105	105	96	96	96	96	79	79	79		63	63	63		49
1	96	92	88	84	87	84	80	78	69	67	65		55	54	52		43
2	87	80	74	69	79	73	68	64	60	57	53		49	46	44		38
3	80	70	63	57	72	64	58	53	53	49	45		43	40	37		33
4	73	62	54	48	66	57	50	45	47	42	38		38	35	32		30
5	67	55	47	41	61	51	44	39	42	37	33		34	30	27		27
6	62	50	42	36	56	46	39	33	38	33	29		31	27	24		24
7	57	45	37	31	52	41	34	29	34	29	25		28	24	21		22
8	53	41	33	28	48	37	31	26	31	26	22		26	22	19		20
9	49	37	30	25	45	34	28	23	29	24	20		24	20	17		19
10	46	34	27	22	42	31	25	21	26	21	18		22	18	15		18

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1461	1461	1461
5°	1463	1441	1450
10°	1451	1421	1431
15°	1430	1398	1400
20°	1402	1366	1369
25°	1373	1327	1332
30°	1337	1291	1286
35°	1303	1248	1238
40°	1261	1205	1191
45°	1220	1162	1144
50°	1174	1117	1089
55°	1126	1065	1038
60°	1073	1003	980
65°	1014	939	912
70°	939	860	839
75°	835	767	771
80°	711	648	641
85°	516	441	426

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 1227 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	184.9	1.5
10°-20°	520.3	4.3
20°-30°	764.6	6.4
30°-40°	888.0	7.4
40°-50°	886.9	7.4
50°-60°	773.4	6.4
60°-70°	571.7	4.8
70°-80°	323.4	2.7
80°-90°	89.6	0.7
90°-100°	78.7	0.7
100°-110°	293.2	2.4
110°-120°	777.7	6.5
120°-130°	1289.9	10.8
130°-140°	1370.2	11.4
140°-150°	1273.4	10.6
150°-160°	1023.8	8.5
160°-170°	659.7	5.5
170°-180°	227.1	1.9
0°-30°	1469.7	12.3
0°-40°	2357.8	19.7
0°-60°	4018.0	33.5
0°-90°	5002.7	41.7
90°-120°	1149.6	9.6
90°-150°	5083.2	42.4
90°-180°	6994.0	58.3
0°-180°	11996.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1965	1965	1965	1965	1965	
5°	1965	1957	1936	1951	1948	186
15°	1870	1859	1834	1842	1832	527
25°	1693	1678	1646	1649	1646	779
35°	1460	1442	1411	1400	1390	912
45°	1188	1175	1147	1126	1118	917
55°	899	888	865	843	833	804
65°	606	595	576	559	550	600
75°	317	314	304	293	297	339
85°	77	76	74	68	66	86
90°	2	21	34	43	47	11
95°	112	55	67	76	74	133
105°	525	577	105	124	131	561
115°	992	1022	1065	266	142	977
125°	1403	1426	1459	1471	1476	1252
135°	1737	1764	1780	1797	1794	1341
145°	2015	2013	2042	2054	2046	1260
155°	2218	2203	2223	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°	1964.6	1964.6	1964.6	1964.6	1964.6
2.5°	1976.0	1966.6	1945.8	1964.6	1961.0
5°	1964.6	1957.2	1936.3	1951.3	1947.8
7.5°	1951.3	1940.1	1919.3	1934.6	1930.7
10°	1930.7	1917.5	1894.9	1909.8	1904.3
12.5°	1902.3	1891.1	1868.4	1877.8	1874.0
15°	1870.1	1858.9	1834.3	1842.0	1832.5
17.5°	1830.5	1819.3	1794.6	1804.0	1794.6
20°	1787.0	1775.8	1749.4	1754.9	1747.6
22.5°	1743.7	1726.7	1702.0	1702.0	1698.2
25°	1692.6	1677.6	1645.5	1649.1	1645.5
27.5°	1635.9	1622.6	1598.2	1592.6	1583.2
30°	1579.3	1564.2	1535.9	1530.3	1522.7
32.5°	1518.8	1507.6	1477.3	1465.9	1458.4
35°	1460.3	1441.5	1411.2	1399.8	1390.4
37.5°	1394.1	1377.2	1346.9	1333.6	1324.3
40°	1326.3	1311.0	1280.7	1263.9	1256.3
42.5°	1260.1	1244.9	1214.8	1195.7	1184.5
45°	1188.3	1175.1	1146.6	1126.0	1118.4
47.5°	1118.4	1105.1	1074.9	1054.0	1042.8
50°	1044.6	1035.2	1008.8	982.3	972.8
52.5°	972.8	959.6	935.2	914.4	901.1
55°	899.3	887.9	865.2	842.6	833.2
57.5°	825.5	816.1	791.5	768.9	761.2
60°	751.8	744.4	718.0	697.1	691.5
62.5°	680.1	666.9	648.0	629.1	621.5
65°	606.5	595.1	576.2	559.2	549.7
67.5°	531.0	521.4	504.5	491.3	483.6
70°	461.0	453.4	436.3	423.1	415.7
72.5°	389.3	381.6	372.2	359.0	353.3
75°	317.3	313.6	304.1	292.8	296.7
77.5°	253.2	245.5	241.7	236.1	230.5
80°	189.0	187.0	183.2	177.6	173.8
82.5°	128.4	128.4	126.6	119.1	119.1
85°	77.4	75.5	73.7	68.0	66.1
87.5°	34.0	30.3	26.5	20.8	18.9
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	416.1	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°	764.8	800.9	302.1	129.6	136.3

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	875.3	906.2	876.9	132.8	138.1
115°	992.5	1021.8	1065.0	265.9	141.7
117.5°	1094.4	1128.9	1158.3	911.3	459.2
120°	1208.3	1234.2	1265.4	1286.1	1053.0
122.5°	1304.9	1332.5	1367.3	1377.5	1379.3
125°	1403.3	1425.8	1458.7	1470.8	1475.8
127.5°	1493.1	1517.2	1543.3	1560.5	1562.2
130°	1577.7	1605.4	1624.3	1643.3	1641.7
132.5°	1664.0	1686.6	1705.5	1721.0	1719.4
135°	1736.6	1764.2	1779.7	1797.0	1793.6
137.5°	1812.4	1833.2	1850.6	1867.8	1862.7
140°	1886.6	1900.5	1919.4	1935.0	1926.4
142.5°	1948.9	1961.0	1983.3	1997.1	1988.5
145°	2014.6	2012.7	2042.0	2054.1	2045.6
147.5°	2071.3	2066.3	2095.5	2104.1	2097.4
150°	2126.6	2114.6	2142.3	2152.5	2143.9
152.5°	2173.2	2159.5	2185.3	2195.7	2183.7
155°	2218.1	2202.7	2223.4	2233.7	2219.9
157.5°	2254.4	2240.6	2256.2	2268.3	2254.4
160°	2285.6	2275.1	2285.6	2295.8	2283.7
162.5°	2313.0	2302.7	2311.3	2323.4	2307.9
165°	2337.2	2327.0	2332.0	2344.1	2332.0
167.5°	2356.3	2345.8	2351.1	2363.2	2347.7
170°	2371.8	2361.4	2364.9	2377.0	2361.4
172.5°	2382.1	2371.8	2375.4	2387.4	2371.8
175°	2390.7	2378.6	2382.1	2394.1	2377.0
177.5°	2394.1	2382.1	2383.9	2396.1	2380.4
180°	2385.6	2385.6	2385.6	2385.6	2385.6

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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	7.77	8.56	8.80	9.59	10.98	7.34	8.13	8.36	9.16	10.55
	3H	9.43	10.14	10.46	11.18	12.58	8.95	9.66	9.99	10.71	12.11
	4H	10.01	10.68	11.06	11.73	13.14	9.54	10.21	10.59	11.25	12.67
	6H	10.41	11.03	11.47	12.08	13.50	9.93	10.55	10.99	11.60	13.02
	8H	10.51	11.10	11.57	12.17	13.58	10.04	10.63	11.10	11.69	13.11
	12H	10.56	11.12	11.63	12.18	13.62	10.08	10.64	11.14	11.70	13.14
4H	2H	8.22	8.90	9.28	9.94	11.35	7.88	8.55	8.93	9.60	11.01
	3H	10.09	10.65	11.15	11.72	13.14	9.69	10.25	10.75	11.33	12.75
	4H	10.80	11.31	11.87	12.37	13.82	10.39	10.91	11.46	11.97	13.42
	6H	11.31	11.75	12.39	12.84	14.28	10.90	11.34	11.98	12.43	13.87
	8H	11.46	11.87	12.54	12.95	14.41	11.05	11.46	12.12	12.54	13.99
	12H	11.53	11.90	12.62	12.99	14.46	11.11	11.48	12.20	12.57	14.03
8H	4H	10.99	11.40	12.07	12.48	13.94	10.63	11.04	11.71	12.12	13.58
	6H	11.62	11.96	12.72	13.08	14.53	11.26	11.60	12.36	12.72	14.17
	8H	11.84	12.14	12.95	13.24	14.72	11.47	11.77	12.58	12.87	14.35
	12H	11.97	12.23	13.08	13.33	14.84	11.58	11.85	12.69	12.95	14.46
12H	4H	10.97	11.34	12.07	12.44	13.90	10.62	10.99	11.71	12.09	13.55
	6H	11.65	11.95	12.76	13.05	14.52	11.30	11.60	12.40	12.70	14.17
	8H	11.89	12.15	13.00	13.25	14.76	11.53	11.79	12.64	12.89	14.40