

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: P905336

Luminaire Tested: DFN2DIP-HX3F0-060D070US835-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P905336
REPORT IS A COMBINATION OF REPORTS P899264 AND P896089
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX3F0-060D070US835-RLLFLL
Description: 3 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

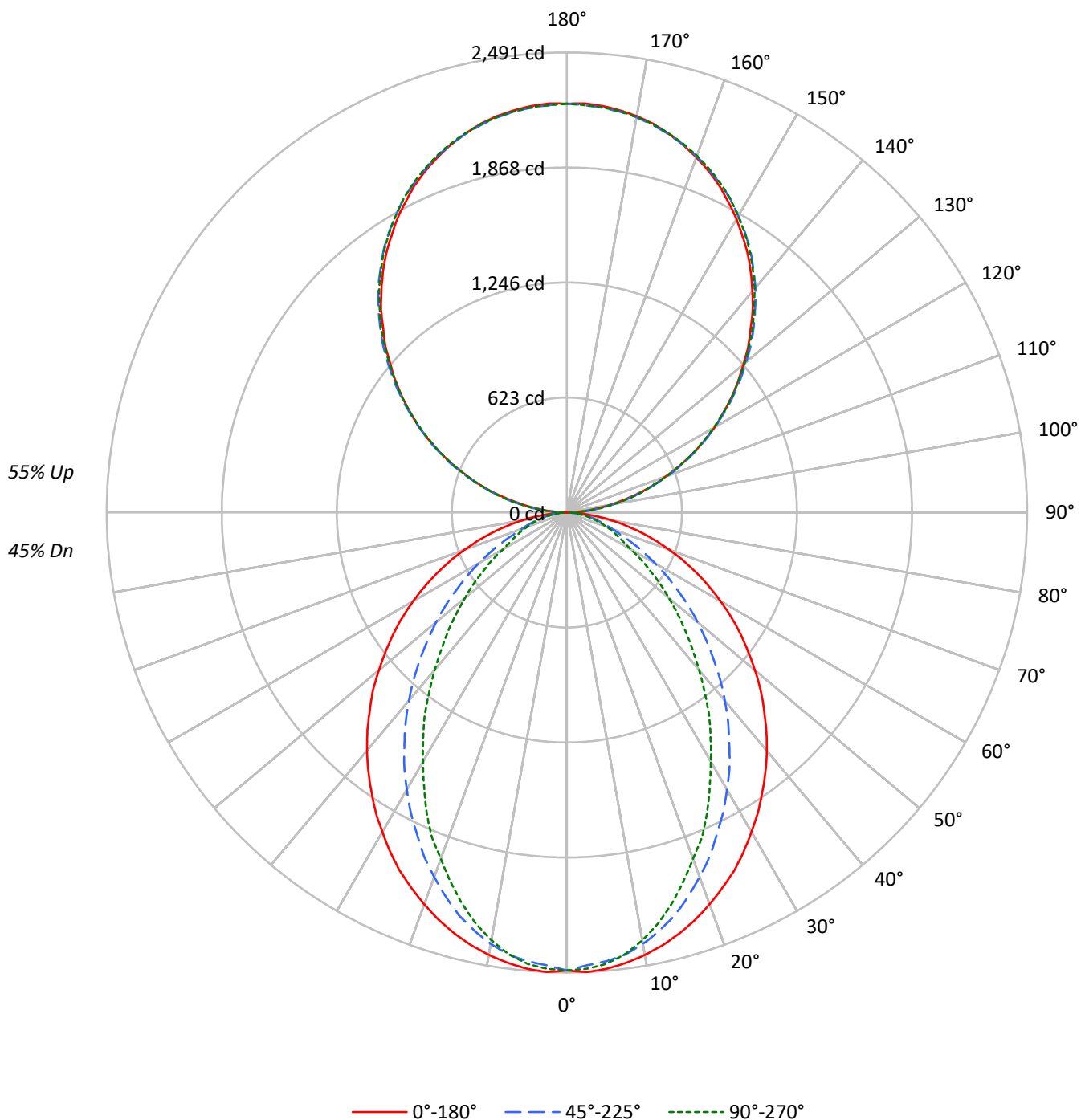
Lumens per Lamp: N/A
Luminaire Lumens: 11295.0 lumens
Efficiency: N/A
Efficacy: 102.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.84' x L: 3.28' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 110.1
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9933
Total Harmonic Distortion (THDi): 0.066
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					0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10
RCR																				
0	106	106	106	106	97	97	97	97	81	81	81	66	66	66	52	52	52	45	45	45
1	97	93	89	86	89	85	82	79	71	69	67	58	57	55	46	45	44	39	39	39
2	89	82	76	71	81	75	70	66	63	59	56	52	49	47	41	40	38	33	33	33
3	81	72	65	60	74	67	60	56	56	51	48	46	43	40	37	35	33	29	29	29
4	75	64	57	51	68	59	53	47	50	45	41	41	38	35	33	31	29	25	25	25
5	69	57	50	44	63	53	46	41	45	40	36	37	33	30	30	28	25	22	22	22
6	63	52	44	38	58	48	41	36	41	35	31	34	30	27	28	25	23	20	20	20
7	59	47	39	34	54	43	36	32	37	32	28	31	27	24	25	22	20	18	18	18
8	54	42	35	30	50	39	33	28	34	28	25	28	24	21	23	20	18	16	16	16
9	51	39	32	27	47	36	30	25	31	26	22	26	22	19	22	19	17	14	14	14
10	47	36	29	24	44	33	27	23	29	24	20	24	20	18	20	17	15	13	13	13

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2872	2872	2872
5°	2876	2825	2843
10°	2846	2768	2749
15°	2806	2674	2605
20°	2752	2546	2428
25°	2698	2403	2257
30°	2625	2257	2042
35°	2554	2099	1852
40°	2481	1937	1635
45°	2397	1757	1438
50°	2310	1575	1246
55°	2219	1381	1062
60°	2113	1179	872
65°	1992	973	783
70°	1844	781	706
75°	1659	685	640
80°	1390	568	549
85°	950	370	404

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2397 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	232.4	2.1
10°-20°	638.0	5.6
20°-30°	895.7	7.9
30°-40°	976.4	8.6
40°-50°	897.4	7.9
50°-60°	704.8	6.2
60°-70°	458.8	4.1
70°-80°	236.1	2.1
80°-90°	66.6	0.6
90°-100°	137.0	1.2
100°-110°	435.3	3.9
110°-120°	744.9	6.6
120°-130°	979.6	8.7
130°-140°	1099.6	9.7
140°-150°	1078.3	9.5
150°-160°	904.5	8.0
160°-170°	599.9	5.3
170°-180°	209.7	1.9
0°-30°	1766.2	15.6
0°-40°	2742.6	24.3
0°-60°	4344.8	38.5
0°-90°	5106.3	45.2
90°-120°	1317.2	11.7
90°-150°	4474.7	39.6
90°-180°	6189.0	54.8
0°-180°	11295.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2480	2480	2480	2480	2480	
5°	2480	2469	2439	2460	2453	235
15°	2359	2334	2258	2215	2193	665
25°	2141	2069	1921	1829	1795	985
35°	1845	1730	1533	1391	1342	1155
45°	1508	1358	1122	963	909	1165
55°	1147	972	729	595	552	1025
65°	774	592	390	314	307	768
75°	413	256	180	164	162	437
85°	96	49	43	43	43	111
90°	2	24	65	61	63	11
95°	97	116	120	120	116	108
105°	402	407	411	414	414	424
115°	748	758	755	753	748	739
125°	1087	1104	1099	1093	1091	972
135°	1406	1427	1431	1429	1424	1087
145°	1707	1721	1731	1733	1726	1067
155°	1952	1958	1964	1973	1967	899
165°	2124	2122	2122	2135	2126	599
175°	2210	2204	2200	2214	2202	210
180°	2214	2214	2214	2214	2214	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2479.8	2479.8	2479.8	2479.8	2479.8
2.5°	2491.0	2479.8	2455.0	2477.6	2473.1
5°	2479.8	2468.6	2439.3	2459.6	2452.9
7.5°	2459.6	2446.2	2414.8	2423.6	2412.4
10°	2432.6	2416.9	2372.2	2365.3	2351.9
12.5°	2399.1	2378.8	2318.1	2304.8	2280.0
15°	2358.6	2333.8	2257.6	2215.0	2192.6
17.5°	2311.5	2275.5	2181.2	2131.9	2096.0
20°	2257.6	2212.6	2100.5	2044.5	1995.0
22.5°	2199.3	2147.6	2017.4	1941.2	1907.6
25°	2141.0	2069.1	1921.0	1829.1	1795.3
27.5°	2071.5	1995.0	1831.2	1725.7	1674.1
30°	1997.4	1911.9	1732.4	1618.1	1557.4
32.5°	1925.5	1822.2	1638.4	1503.6	1447.4
35°	1844.8	1730.3	1532.9	1391.4	1341.9
37.5°	1766.2	1642.6	1434.1	1279.1	1223.1
40°	1683.1	1548.6	1330.7	1171.4	1113.1
42.5°	1597.9	1454.3	1227.6	1061.4	1005.5
45°	1508.1	1357.6	1122.2	962.6	908.8
47.5°	1422.9	1263.6	1021.2	861.7	812.4
50°	1328.6	1169.3	922.4	767.4	720.5
52.5°	1236.4	1068.1	828.1	680.0	637.4
55°	1146.7	971.7	729.3	594.8	552.1
57.5°	1054.8	875.2	641.9	516.2	480.2
60°	960.5	781.0	549.8	435.5	399.5
62.5°	868.6	689.1	471.2	363.6	345.7
65°	774.3	592.4	390.5	314.3	307.4
67.5°	684.5	502.6	314.3	276.0	269.3
70°	590.2	415.2	260.2	237.9	228.8
72.5°	500.5	334.3	217.6	199.8	195.2
75°	412.9	255.7	179.5	163.8	161.7
77.5°	325.5	181.7	141.4	132.4	127.9
80°	244.5	130.2	107.6	98.8	98.8
82.5°	170.5	87.6	74.0	69.5	69.5
85°	96.4	49.3	42.6	42.6	42.6
87.5°	36.0	17.9	17.9	15.7	15.7
90°	2.0	24.0	65.4	61.4	63.4
92.5°	41.4	56.1	58.1	60.1	60.1
95°	97.4	116.1	119.5	119.5	116.1
97.5°	162.2	179.5	186.9	186.9	186.9
100°	236.9	252.3	257.6	257.6	255.6
102.5°	315.7	327.0	334.4	336.4	334.4
105°	401.8	407.1	411.1	414.5	414.5
107.5°	487.2	495.2	495.2	496.6	487.2
110°	570.0	580.7	580.7	580.7	575.3

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	659.4	670.8	668.8	663.4	659.4
115°	747.5	758.2	754.9	752.9	747.5
117.5°	834.9	849.6	840.3	834.9	829.6
120°	923.0	937.7	923.0	923.0	917.0
122.5°	1003.1	1021.8	1012.5	1007.1	1003.1
125°	1087.2	1103.9	1098.6	1092.6	1090.6
127.5°	1169.3	1190.0	1182.7	1174.7	1169.3
130°	1246.1	1270.1	1266.8	1262.8	1255.4
132.5°	1332.2	1350.9	1352.2	1342.9	1337.5
135°	1406.3	1426.9	1431.0	1428.9	1423.6
137.5°	1489.0	1505.7	1509.0	1507.7	1499.7
140°	1561.8	1578.5	1587.8	1587.8	1580.5
142.5°	1636.5	1653.2	1658.5	1660.5	1653.2
145°	1707.3	1720.6	1731.3	1733.3	1726.0
147.5°	1770.7	1787.4	1795.4	1798.7	1791.4
150°	1836.1	1847.4	1854.8	1860.8	1854.8
152.5°	1894.1	1905.5	1914.8	1922.2	1914.8
155°	1952.2	1957.5	1963.6	1972.9	1966.9
157.5°	2002.3	2006.3	2009.6	2023.0	2013.6
160°	2047.0	2051.0	2053.0	2064.3	2056.3
162.5°	2088.4	2088.4	2090.4	2103.0	2093.7
165°	2123.7	2121.7	2121.7	2135.1	2125.7
167.5°	2155.8	2149.8	2149.8	2163.1	2153.8
170°	2179.8	2174.5	2172.5	2185.8	2174.5
172.5°	2196.5	2191.1	2189.1	2202.5	2191.1
175°	2209.8	2204.5	2200.5	2213.8	2202.5
177.5°	2217.2	2211.8	2207.8	2219.2	2207.8
180°	2213.8	2213.8	2213.8	2213.8	2213.8

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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	10.30	11.10	11.31	12.11	13.45	6.28	7.07	7.28	8.08	9.42
	3H	11.97	12.68	12.98	13.70	15.06	7.46	8.17	8.47	9.19	10.55
	4H	12.57	13.24	13.60	14.26	15.63	7.91	8.58	8.93	9.60	10.97
	6H	12.98	13.60	14.02	14.63	16.01	8.22	8.84	9.26	9.86	11.25
	8H	13.11	13.69	14.15	14.74	16.11	8.31	8.90	9.35	9.94	11.31
	12H	13.16	13.72	14.21	14.76	16.16	8.35	8.91	9.40	9.94	11.34
4H	2H	10.32	10.99	11.35	12.01	13.38	6.87	7.54	7.90	8.56	9.93
	3H	12.13	12.69	13.17	13.74	15.12	8.21	8.76	9.25	9.81	11.20
	4H	12.82	13.33	13.86	14.37	15.77	8.75	9.26	9.80	10.30	11.71
	6H	13.32	13.76	14.38	14.83	16.23	9.16	9.60	10.22	10.67	12.07
	8H	13.49	13.90	14.55	14.96	16.37	9.29	9.70	10.35	10.75	12.17
	12H	13.58	13.95	14.66	15.02	16.44	9.35	9.72	10.42	10.79	12.21
8H	4H	12.78	13.19	13.84	14.25	15.66	9.02	9.43	10.08	10.49	11.90
	6H	13.34	13.67	14.42	14.77	16.19	9.53	9.87	10.61	10.97	12.38
	8H	13.55	13.84	14.64	14.93	16.36	9.72	10.02	10.81	11.10	12.53
	12H	13.68	13.94	14.77	15.02	16.49	9.83	10.09	10.92	11.17	12.64
12H	4H	12.73	13.10	13.81	14.17	15.59	9.02	9.39	10.10	10.47	11.89
	6H	13.31	13.61	14.40	14.69	16.12	9.58	9.88	10.67	10.96	12.39
	8H	13.53	13.79	14.62	14.86	16.34	9.78	10.05	10.88	11.12	12.60