

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: P928946

Luminaire Tested: DFN2DIP-HX4F0-070D090US935-RLLONL

Issue Date: 12/12/2024

Test Information

Test Method: LM-79-2019
Report Number: P928946
REPORT IS A COMBINATION OF REPORTS P900916 AND P896187
Test Lab: INNOVATION CENTER
Issue Date: 12/12/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX4F0-070D090US935-RLLONL
Description: 4 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

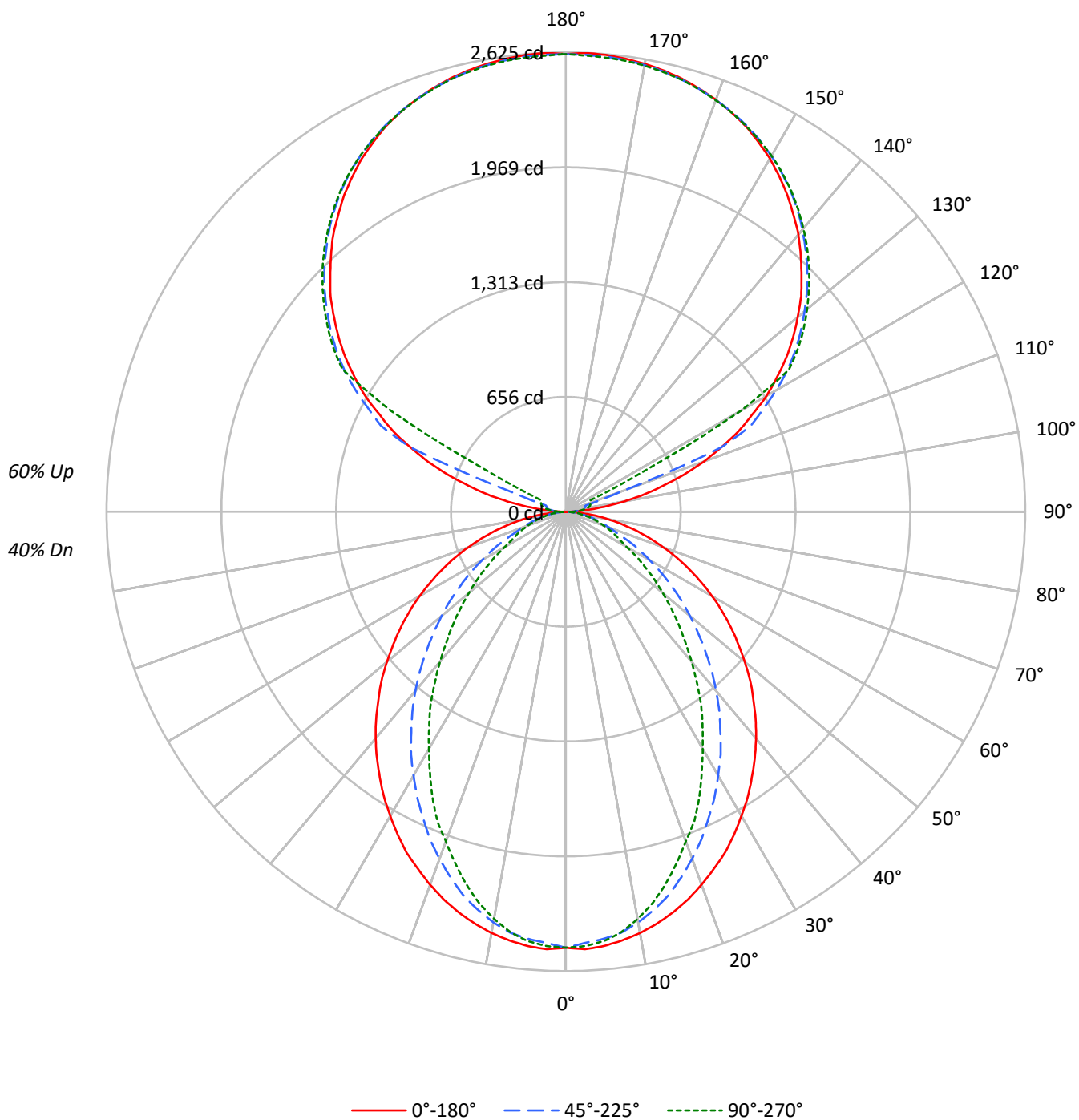
Lumens per Lamp: N/A
Luminaire Lumens: 12794.4 lumens
Efficiency: N/A
Efficacy: 95.3 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.54' x L: 4.09' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 134.2
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9972
Total Harmonic Distortion (THDi): 0.128
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
RCR																					
0	105	105	105	105		95	95	95	95		78	78	78		62	62	62		47	47	47
1	96	92	88	85		87	84	81	78		69	67	65		55	53	52		42	41	40
2	88	81	75	70		80	74	69	64		61	57	54		49	46	44		38	36	35
3	80	71	64	59		73	65	59	54		54	49	46		43	40	38		34	32	30
4	74	63	56	50		67	58	51	46		48	43	39		39	35	33		30	28	26
5	68	56	49	43		61	52	45	40		43	38	34		35	31	28		27	25	23
6	62	51	43	37		57	47	40	35		39	34	30		32	28	25		25	22	20
7	58	46	38	33		52	42	35	31		35	30	26		29	25	22		23	20	18
8	54	42	34	29		49	38	32	27		32	27	24		27	23	20		21	18	16
9	50	38	31	26		45	35	29	24		30	25	21		24	21	18		20	17	15
10	47	35	28	23		43	32	26	22		27	22	19		23	19	16		18	16	14

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1852	1852	1852
5°	1855	1823	1835
10°	1837	1787	1775
15°	1812	1728	1683
20°	1779	1647	1570
25°	1745	1556	1460
30°	1699	1463	1322
35°	1654	1362	1200
40°	1608	1258	1060
45°	1555	1143	934
50°	1500	1026	810
55°	1443	902	691
60°	1376	771	569
65°	1300	639	512
70°	1208	516	464
75°	1092	455	422
80°	924	382	367
85°	646	256	276

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1555 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	233.5	1.8
10°-20°	640.9	5.0
20°-30°	899.8	7.0
30°-40°	980.8	7.7
40°-50°	901.5	7.0
50°-60°	708.0	5.5
60°-70°	460.8	3.6
70°-80°	237.2	1.9
80°-90°	65.2	0.5
90°-100°	86.2	0.7
100°-110°	321.5	2.5
110°-120°	852.6	6.7
120°-130°	1414.1	11.1
130°-140°	1502.1	11.7
140°-150°	1396.0	10.9
150°-160°	1122.4	8.8
160°-170°	723.2	5.7
170°-180°	248.9	1.9
0°-30°	1774.1	13.9
0°-40°	2754.9	21.5
0°-60°	4364.3	34.1
0°-90°	5127.5	40.1
90°-120°	1260.3	9.9
90°-150°	5572.4	43.6
90°-180°	7667.0	59.9
0°-180°	12794.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2491	2491	2491	2491	2491	
5°	2491	2480	2450	2471	2464	236
15°	2369	2344	2268	2225	2202	668
25°	2151	2078	1930	1837	1803	989
35°	1853	1738	1540	1398	1348	1160
45°	1515	1364	1127	967	913	1170
55°	1152	976	732	597	555	1029
65°	778	595	392	316	309	771
75°	415	257	180	164	162	439
85°	97	50	43	43	43	111
90°	2	23	38	47	51	12
95°	123	60	74	83	81	146
105°	575	632	116	136	144	615
115°	1088	1120	1168	291	155	1071
125°	1538	1563	1599	1612	1618	1372
135°	1904	1934	1951	1970	1966	1471
145°	2208	2206	2239	2252	2242	1381
155°	2432	2415	2437	2449	2434	1121
165°	2562	2551	2557	2570	2557	724
175°	2621	2608	2611	2625	2606	249
180°	2615	2615	2615	2615	2615	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2491.0	2491.0	2491.0	2491.0	2491.0
2.5°	2502.2	2491.0	2466.1	2488.8	2484.2
5°	2491.0	2479.7	2450.3	2470.6	2463.9
7.5°	2470.6	2457.2	2425.7	2434.5	2423.3
10°	2443.6	2427.8	2382.8	2375.9	2362.5
12.5°	2409.9	2389.5	2328.6	2315.1	2290.3
15°	2369.2	2344.3	2267.8	2225.0	2202.5
17.5°	2321.9	2285.8	2191.1	2141.5	2105.4
20°	2267.8	2222.6	2110.0	2053.7	2004.0
22.5°	2209.2	2157.3	2026.4	1949.9	1916.2
25°	2150.6	2078.4	1929.6	1837.3	1803.4
27.5°	2080.8	2004.0	1839.4	1733.5	1681.6
30°	2006.4	1920.5	1740.2	1625.4	1564.4
32.5°	1934.2	1830.4	1645.7	1510.4	1453.9
35°	1853.0	1738.0	1539.8	1397.7	1348.0
37.5°	1774.2	1650.0	1440.5	1284.8	1228.6
40°	1690.7	1555.6	1336.7	1176.7	1118.1
42.5°	1605.1	1460.9	1233.1	1066.2	1010.0
45°	1514.9	1363.7	1127.2	967.0	912.9
47.5°	1429.3	1269.3	1025.8	865.6	816.1
50°	1334.6	1174.6	926.5	770.9	723.8
52.5°	1242.0	1072.9	831.8	683.0	640.2
55°	1151.8	976.0	732.5	597.4	554.7
57.5°	1059.5	879.2	644.8	518.5	482.4
60°	964.8	784.5	552.2	437.5	401.3
62.5°	872.5	692.2	473.3	365.2	347.2
65°	777.7	595.0	392.3	315.7	308.8
67.5°	687.6	504.9	315.7	277.2	270.5
70°	592.9	417.1	261.4	238.9	229.8
72.5°	502.7	335.8	218.6	200.7	196.1
75°	414.7	256.8	180.3	164.5	162.4
77.5°	326.9	182.4	142.1	132.9	128.5
80°	245.6	130.8	108.1	99.3	99.3
82.5°	171.3	88.0	74.4	69.8	69.8
85°	96.9	49.5	42.8	42.8	42.8
87.5°	36.1	17.9	17.9	15.8	15.8
90°	1.8	22.7	37.7	47.4	51.0
92.5°	47.4	39.8	45.4	49.2	51.0
95°	123.0	60.4	73.7	83.3	81.4
97.5°	221.4	66.3	96.4	102.2	104.0
100°	335.0	75.8	107.9	123.0	126.7
102.5°	459.8	456.2	111.7	132.3	138.2
105°	575.2	632.1	115.5	136.2	143.8
107.5°	709.6	756.8	119.3	140.0	147.7
110°	838.4	878.0	331.2	142.0	149.5

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	959.5	993.4	961.3	145.6	151.4
115°	1088.0	1120.2	1167.6	291.4	155.2
117.5°	1199.7	1237.5	1269.8	999.1	503.3
120°	1324.6	1353.0	1387.2	1409.8	1154.3
122.5°	1430.6	1460.9	1498.8	1510.0	1512.1
125°	1538.3	1563.1	1599.0	1612.3	1617.9
127.5°	1636.8	1663.3	1691.9	1710.7	1712.5
130°	1729.6	1760.0	1780.6	1801.5	1799.7
132.5°	1824.2	1848.9	1869.6	1886.7	1884.9
135°	1903.8	1934.1	1950.9	1970.1	1966.3
137.5°	1986.9	2009.6	2028.7	2047.5	2041.9
140°	2068.2	2083.5	2104.2	2121.2	2111.9
142.5°	2136.6	2149.8	2174.3	2189.4	2180.0
145°	2208.5	2206.4	2238.6	2251.9	2242.4
147.5°	2270.7	2265.1	2297.2	2306.7	2299.2
150°	2331.4	2318.2	2348.5	2359.7	2350.3
152.5°	2382.4	2367.3	2395.6	2407.1	2393.8
155°	2431.6	2414.8	2437.4	2448.7	2433.6
157.5°	2471.4	2456.3	2473.4	2486.7	2471.4
160°	2505.5	2494.1	2505.5	2516.8	2503.5
162.5°	2535.6	2524.4	2533.8	2547.1	2530.0
165°	2562.2	2550.9	2556.6	2569.8	2556.6
167.5°	2583.1	2571.6	2577.4	2590.7	2573.6
170°	2600.1	2588.7	2592.5	2605.7	2588.7
172.5°	2611.4	2600.1	2603.9	2617.2	2600.1
175°	2620.8	2607.5	2611.4	2624.6	2605.7
177.5°	2624.6	2611.4	2613.4	2626.7	2609.6
180°	2615.2	2615.2	2615.2	2615.2	2615.2

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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	8.29	9.04	9.33	10.09	11.50	4.26	5.02	5.30	6.06	7.47
	3H	9.96	10.63	11.01	11.69	13.12	5.44	6.12	6.50	7.17	8.60
	4H	10.57	11.20	11.63	12.26	13.70	5.89	6.53	6.96	7.59	9.02
	6H	10.98	11.57	12.06	12.63	14.08	6.21	6.80	7.29	7.86	9.31
	8H	11.11	11.67	12.19	12.74	14.18	6.30	6.86	7.38	7.94	9.38
	12H	11.17	11.70	12.25	12.77	14.23	6.34	6.87	7.43	7.94	9.41
4H	2H	8.30	8.94	9.37	9.99	11.43	4.85	5.49	5.92	6.54	7.98
	3H	10.12	10.65	11.20	11.74	13.18	6.19	6.72	7.27	7.81	9.25
	4H	10.81	11.30	11.89	12.37	13.84	6.74	7.23	7.82	8.30	9.77
	6H	11.32	11.74	12.41	12.84	14.30	7.16	7.57	8.25	8.67	10.13
	8H	11.50	11.89	12.59	12.98	14.45	7.28	7.67	8.38	8.76	10.24
	12H	11.59	11.94	12.70	13.04	14.53	7.35	7.70	8.46	8.80	10.29
8H	4H	10.77	11.16	11.87	12.25	13.73	7.01	7.40	8.11	8.49	9.97
	6H	11.34	11.66	12.45	12.79	14.27	7.53	7.85	8.65	8.99	10.46
	8H	11.55	11.84	12.68	12.95	14.44	7.72	8.01	8.85	9.12	10.61
	12H	11.69	11.94	12.81	13.05	14.58	7.84	8.09	8.97	9.20	10.73
12H	4H	10.72	11.07	11.83	12.18	13.66	7.02	7.37	8.13	8.47	9.95
	6H	11.31	11.59	12.43	12.71	14.20	7.58	7.86	8.70	8.98	10.47
	8H	11.53	11.78	12.65	12.89	14.42	7.79	8.04	8.91	9.15	10.68

END OF REPORT