

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: P927426

Luminaire Tested: DFN2DIP-HX4F0-100D070US835-RLLONL

Issue Date: 12/12/2024

Test Information

Test Method: LM-79-2019
Report Number: P927426
REPORT IS A COMBINATION OF REPORTS P900886 AND P896187
Test Lab: INNOVATION CENTER
Issue Date: 12/12/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX4F0-100D070US835-RLLONL
Description: 4 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

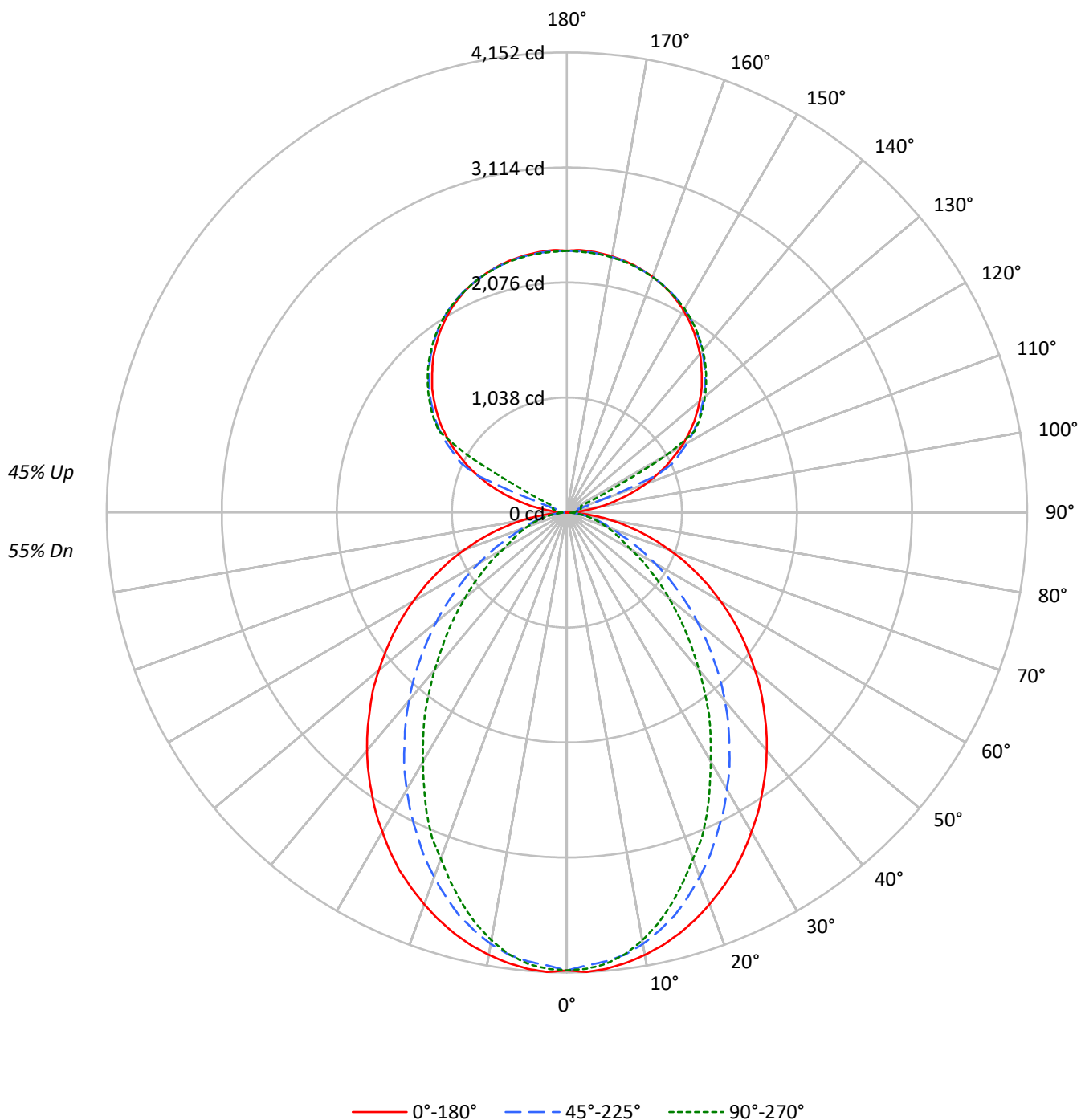
Lumens per Lamp: N/A
Luminaire Lumens: 15430.0 lumens
Efficiency: N/A
Efficacy: 101.9 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.54' x L: 4.09' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 151.4
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.946
Total Harmonic Distortion (THDi): 0.132
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		0			
RCR																						
0	108	108	108	108		101	101	101	101		86	86	86		73	73	73		61	61	61	55
1	99	95	92	88		92	89	86	83		76	74	72		65	63	62		55	53	52	47
2	91	84	78	73		84	78	73	69		68	64	60		58	55	52		49	47	45	41
3	83	74	67	61		77	69	63	58		60	55	51		52	48	45		44	41	39	35
4	77	66	58	52		71	62	55	50		54	48	44		46	42	39		39	36	34	31
5	70	59	51	45		65	55	48	43		48	43	39		42	38	34		36	33	30	27
6	65	53	45	40		60	50	43	38		44	38	34		38	34	30		33	29	27	24
7	60	48	41	35		56	45	38	33		40	34	30		35	30	27		30	27	24	21
8	56	44	36	31		52	41	35	30		37	31	27		32	28	24		28	24	22	19
9	52	40	33	28		49	38	31	27		34	28	24		29	25	22		26	22	20	18
10	49	37	30	25		46	35	29	24		31	26	22		27	23	20		24	20	18	16

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3073	3073	3073
5°	3078	3025	3044
10°	3048	2966	2945
15°	3006	2868	2792
20°	2951	2733	2604
25°	2895	2582	2423
30°	2818	2427	2193
35°	2744	2260	1991
40°	2668	2088	1759
45°	2580	1896	1549
50°	2489	1703	1344
55°	2394	1496	1147
60°	2284	1280	944
65°	2157	1060	850
70°	2004	855	769
75°	1811	755	700
80°	1532	634	608
85°	1071	425	458

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 2580 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	387.3	2.5
10°-20°	1063.3	6.9
20°-30°	1492.9	9.7
30°-40°	1627.4	10.5
40°-50°	1495.7	9.7
50°-60°	1174.7	7.6
60°-70°	764.6	5.0
70°-80°	393.6	2.6
80°-90°	104.6	0.7
90°-100°	77.9	0.5
100°-110°	290.4	1.9
110°-120°	770.2	5.0
120°-130°	1277.4	8.3
130°-140°	1356.9	8.8
140°-150°	1261.1	8.2
150°-160°	1013.9	6.6
160°-170°	653.3	4.2
170°-180°	224.9	1.5
0°-30°	2943.6	19.1
0°-40°	4571.0	29.6
0°-60°	7241.3	46.9
0°-90°	8504.1	55.1
90°-120°	1138.5	7.4
90°-150°	5033.8	32.6
90°-180°	6926.0	44.9
0°-180°	15430.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	4133	4133	4133	4133	4133	
5°	4133	4114	4066	4099	4088	392
15°	3931	3890	3763	3692	3654	1108
25°	3568	3448	3202	3048	2992	1641
35°	3075	2884	2555	2319	2236	1924
45°	2514	2263	1870	1604	1515	1941
55°	1911	1620	1216	991	920	1708
65°	1290	987	651	524	512	1279
75°	688	426	299	273	269	728
85°	161	82	71	71	71	184
90°	2	20	34	43	46	15
95°	111	55	67	75	74	131
105°	520	571	104	123	130	555
115°	983	1012	1055	263	140	968
125°	1390	1412	1444	1456	1462	1239
135°	1720	1747	1762	1780	1776	1328
145°	1995	1993	2022	2034	2026	1248
155°	2197	2181	2202	2212	2198	1012
165°	2314	2304	2309	2321	2309	654
175°	2368	2356	2359	2371	2354	225
180°	2362	2362	2362	2362	2362	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	4133.0	4133.0	4133.0	4133.0	4133.0
2.5°	4151.6	4133.0	4091.7	4129.4	4121.9
5°	4133.0	4114.3	4065.5	4099.3	4088.1
7.5°	4099.3	4077.0	4024.6	4039.3	4020.7
10°	4054.4	4028.2	3953.6	3942.1	3919.9
12.5°	3998.5	3964.7	3863.5	3841.3	3800.0
15°	3931.0	3889.7	3762.7	3691.7	3654.4
17.5°	3852.4	3792.5	3635.4	3553.2	3493.3
20°	3762.7	3687.7	3500.8	3407.6	3325.0
22.5°	3665.5	3579.4	3362.3	3235.4	3179.4
25°	3568.3	3448.5	3201.6	3048.4	2992.1
27.5°	3452.4	3325.0	3052.0	2876.2	2790.1
30°	3329.0	3186.5	2887.3	2696.9	2595.7
32.5°	3209.2	3036.9	2730.6	2506.0	2412.3
35°	3074.6	2883.8	2554.8	2319.1	2236.5
37.5°	2943.7	2737.7	2390.1	2131.8	2038.5
40°	2805.2	2581.0	2217.9	1952.4	1855.2
42.5°	2663.1	2423.8	2046.1	1769.1	1675.8
45°	2513.5	2262.7	1870.3	1604.4	1514.7
47.5°	2371.5	2106.0	1702.0	1436.1	1354.0
50°	2214.3	1948.8	1537.3	1279.0	1200.8
52.5°	2060.7	1780.2	1380.2	1133.3	1062.3
55°	1911.1	1619.5	1215.5	991.3	920.2
57.5°	1758.0	1458.7	1069.9	860.3	800.4
60°	1600.8	1301.6	916.3	725.8	665.9
62.5°	1447.6	1148.4	785.3	606.0	576.2
65°	1290.5	987.3	650.8	523.8	512.3
67.5°	1140.9	837.7	523.8	459.9	448.8
70°	983.7	692.1	433.7	396.4	381.4
72.5°	834.1	557.1	362.7	332.9	325.4
75°	688.1	426.2	299.2	273.0	269.4
77.5°	542.5	302.8	235.7	220.6	213.1
80°	407.5	217.1	179.4	164.7	164.7
82.5°	284.1	146.0	123.4	115.9	115.9
85°	160.7	82.1	71.0	71.0	71.0
87.5°	59.9	29.8	29.8	26.2	26.2
90°	1.6	20.5	34.1	42.8	46.1
92.5°	42.8	35.9	41.0	44.5	46.1
95°	111.0	54.6	66.6	75.3	73.5
97.5°	199.9	59.9	87.1	92.4	94.0
100°	302.7	68.4	97.4	111.0	114.5
102.5°	415.3	412.1	100.9	119.6	124.8
105°	519.7	571.0	104.3	123.0	129.9
107.5°	641.0	683.7	107.8	126.5	133.4
110°	757.4	793.1	299.2	128.3	135.0

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	866.8	897.4	868.4	131.5	136.8
115°	982.9	1011.9	1054.7	263.3	140.3
117.5°	1083.8	1117.9	1147.1	902.5	454.7
120°	1196.6	1222.2	1253.1	1273.6	1042.8
122.5°	1292.2	1319.6	1354.0	1364.1	1365.9
125°	1389.7	1412.0	1444.5	1456.5	1461.5
127.5°	1478.6	1502.5	1528.3	1545.4	1547.0
130°	1562.4	1589.8	1608.5	1627.4	1625.8
132.5°	1647.9	1670.2	1688.9	1704.3	1702.7
135°	1719.7	1747.1	1762.4	1779.6	1776.2
137.5°	1794.8	1815.4	1832.6	1849.7	1844.6
140°	1868.3	1882.1	1900.8	1916.2	1907.7
142.5°	1930.0	1942.0	1964.1	1977.7	1969.2
145°	1995.0	1993.2	2022.2	2034.2	2025.7
147.5°	2051.2	2046.2	2075.2	2083.7	2077.0
150°	2106.0	2094.1	2121.5	2131.6	2123.1
152.5°	2152.1	2138.5	2164.1	2174.4	2162.5
155°	2196.6	2181.3	2201.8	2212.0	2198.4
157.5°	2232.5	2218.9	2234.3	2246.3	2232.5
160°	2263.4	2253.0	2263.4	2273.5	2261.5
162.5°	2290.6	2280.4	2288.9	2300.9	2285.5
165°	2314.5	2304.4	2309.4	2321.4	2309.4
167.5°	2333.4	2323.0	2328.3	2340.3	2324.9
170°	2348.8	2338.5	2341.9	2353.9	2338.5
172.5°	2359.0	2348.8	2352.3	2364.2	2348.8
175°	2367.5	2355.5	2359.0	2370.9	2353.9
177.5°	2370.9	2359.0	2360.8	2372.8	2357.3
180°	2362.4	2362.4	2362.4	2362.4	2362.4

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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	11.51	12.39	12.43	13.32	14.52	7.49	8.36	8.41	9.29	10.49
	3H	13.20	13.98	14.13	14.92	16.14	8.68	9.46	9.61	10.40	11.63
	4H	13.81	14.54	14.75	15.49	16.72	9.13	9.87	10.08	10.82	12.05
	6H	14.23	14.91	15.19	15.86	17.11	9.46	10.14	10.42	11.09	12.34
	8H	14.36	15.01	15.32	15.97	17.22	9.55	10.20	10.52	11.17	12.41
	12H	14.42	15.04	15.39	16.00	17.27	9.60	10.21	10.57	11.18	12.44
4H	2H	11.54	12.28	12.49	13.22	14.45	8.09	8.83	9.04	9.77	11.01
	3H	13.37	13.99	14.33	14.96	16.21	9.44	10.06	10.40	11.03	12.28
	4H	14.07	14.63	15.04	15.60	16.87	10.00	10.55	10.97	11.53	12.80
	6H	14.59	15.07	15.57	16.06	17.33	10.42	10.90	11.40	11.89	13.16
	8H	14.76	15.21	15.75	16.20	17.48	10.55	11.00	11.53	11.99	13.27
	12H	14.86	15.26	15.86	16.27	17.56	10.62	11.02	11.62	12.03	13.32
8H	4H	14.04	14.49	15.02	15.48	16.76	10.28	10.73	11.26	11.72	13.00
	6H	14.61	14.98	15.62	16.01	17.29	10.80	11.17	11.81	12.20	13.48
	8H	14.82	15.15	15.84	16.17	17.47	10.99	11.32	12.01	12.34	13.64
	12H	14.97	15.25	15.99	16.26	17.61	11.12	11.40	12.14	12.42	13.76
12H	4H	13.99	14.40	14.99	15.40	16.69	10.29	10.69	11.29	11.70	12.98
	6H	14.58	14.91	15.60	15.93	17.23	10.85	11.18	11.87	12.20	13.50
	8H	14.81	15.09	15.83	16.10	17.45	11.07	11.35	12.09	12.36	13.71