

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: P905426

Luminaire Tested: DFN2DIP-HX4F0-040D100US835-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P905426
REPORT IS A COMBINATION OF REPORTS P899407 AND P896188
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX4F0-040D100US835-FLLFL
Description: 4 foot, Hexagon Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

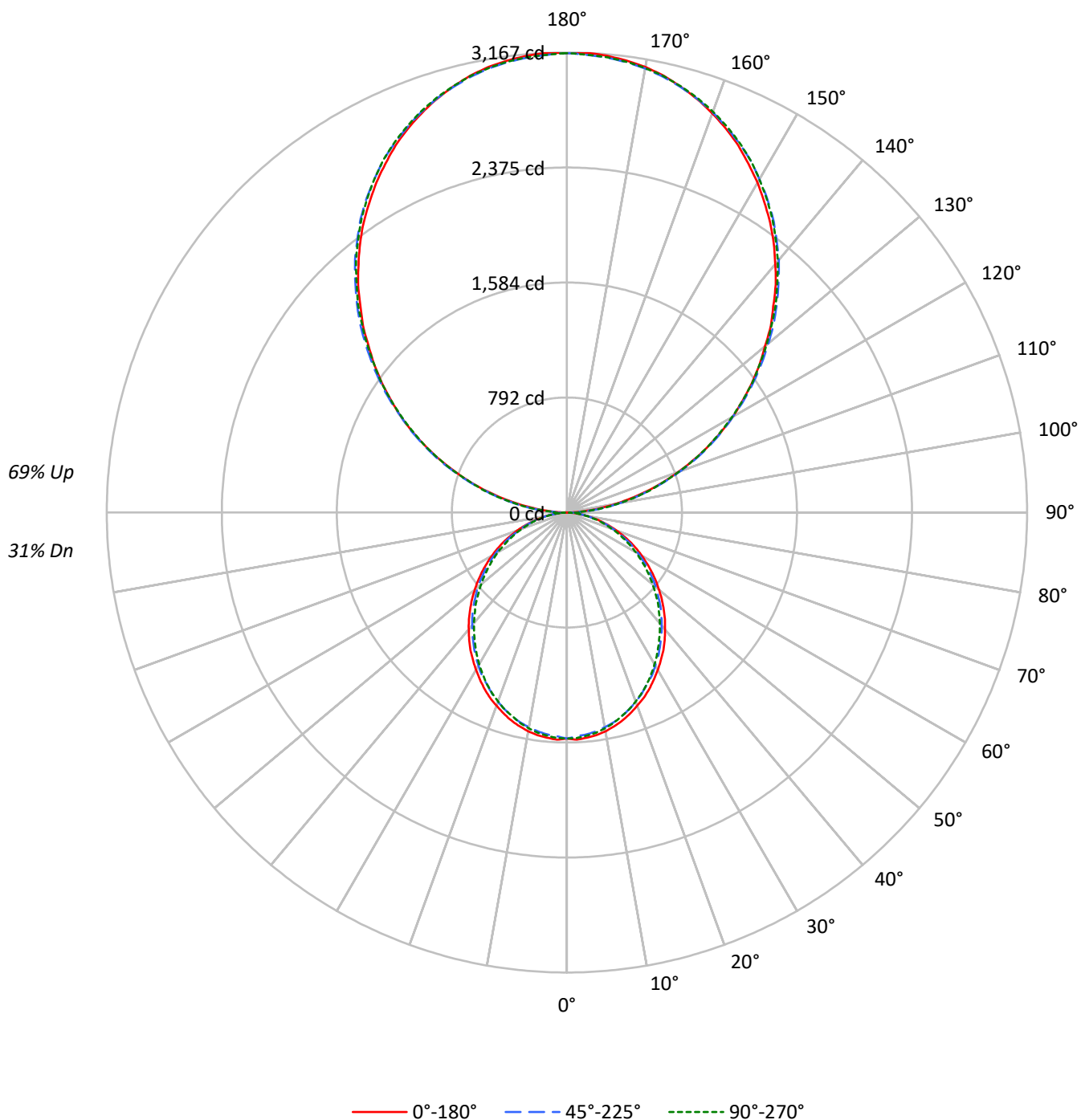
Lumens per Lamp: N/A
Luminaire Lumens: 12810.0 lumens
Efficiency: N/A
Efficacy: 140.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.54' x L: 4.09' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 91
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9977
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	30	10
RCR																	
0	103	103	103	103	92	92	92	92	73	73	73	55	55	55	39	39	39
1	94	89	86	82	84	80	77	74	64	61	60	48	47	46	34	33	33
2	85	78	72	67	76	70	65	61	56	52	49	42	40	38	30	29	27
3	78	68	61	56	69	62	56	51	49	45	41	37	35	32	27	25	23
4	71	60	53	47	63	55	48	43	44	39	35	33	30	28	24	22	20
5	65	54	46	40	58	49	42	37	39	34	30	30	26	24	21	19	17
6	60	48	40	35	54	44	37	32	35	30	26	27	23	21	19	17	15
7	55	43	36	30	49	39	33	28	32	27	23	24	21	18	18	15	14
8	51	39	32	27	46	36	29	24	29	24	20	22	19	16	16	14	12
9	47	36	28	24	43	32	26	22	26	21	18	20	17	15	15	13	11
10	44	33	26	21	40	30	24	19	24	19	16	19	15	13	14	12	10

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1157	1157	1157
5°	1159	1141	1149
10°	1150	1126	1133
15°	1133	1108	1109
20°	1110	1082	1084
25°	1088	1051	1056
30°	1059	1023	1019
35°	1032	989	980
40°	999	955	944
45°	966	921	906
50°	930	885	863
55°	892	844	823
60°	850	795	777
65°	803	744	723
70°	744	682	664
75°	662	608	611
80°	563	513	508
85°	409	349	338

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 2385 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	146.5	1.1
10°-20°	412.2	3.2
20°-30°	605.7	4.7
30°-40°	703.5	5.5
40°-50°	702.6	5.5
50°-60°	612.7	4.8
60°-70°	452.9	3.5
70°-80°	256.2	2.0
80°-90°	76.6	0.6
90°-100°	195.7	1.5
100°-110°	621.8	4.9
110°-120°	1064.1	8.3
120°-130°	1399.5	10.9
130°-140°	1570.9	12.3
140°-150°	1540.4	12.0
150°-160°	1292.2	10.1
160°-170°	856.9	6.7
170°-180°	299.5	2.3
0°-30°	1164.4	9.1
0°-40°	1867.9	14.6
0°-60°	3183.2	24.8
0°-90°	3969.0	31.0
90°-120°	1881.6	14.7
90°-150°	6392.4	49.9
90°-180°	8841.0	69.0
0°-180°	12810.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1556	1556	1556	1556	1556	
5°	1556	1550	1534	1546	1543	148
15°	1482	1473	1453	1459	1452	417
25°	1341	1329	1304	1306	1304	617
35°	1157	1142	1118	1109	1102	722
45°	941	931	908	892	886	727
55°	712	703	686	668	660	637
65°	480	471	456	443	436	475
75°	251	248	241	232	235	268
85°	61	60	58	54	52	68
90°	3	34	93	88	91	13
95°	139	166	171	171	166	155
105°	574	582	587	592	592	606
115°	1068	1083	1078	1076	1068	1056
125°	1553	1577	1569	1561	1558	1388
135°	2009	2038	2044	2041	2034	1553
145°	2439	2458	2473	2476	2466	1524
155°	2789	2796	2805	2818	2810	1284
165°	3034	3031	3031	3050	3037	856
175°	3157	3149	3144	3163	3146	300
180°	3163	3163	3163	3163	3163	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1556.4	1556.4	1556.4	1556.4	1556.4
2.5°	1565.5	1558.0	1541.5	1556.4	1553.6
5°	1556.4	1550.5	1534.0	1545.9	1543.1
7.5°	1545.9	1537.0	1520.5	1532.6	1529.6
10°	1529.6	1519.1	1501.2	1513.1	1508.6
12.5°	1507.0	1498.1	1480.2	1487.7	1484.6
15°	1481.6	1472.7	1453.2	1459.2	1451.8
17.5°	1450.2	1441.3	1421.8	1429.2	1421.8
20°	1415.7	1406.8	1385.9	1390.3	1384.5
22.5°	1381.4	1367.9	1348.4	1348.4	1345.4
25°	1340.9	1329.0	1303.6	1306.5	1303.6
27.5°	1296.0	1285.5	1266.2	1261.7	1254.3
30°	1251.2	1239.2	1216.8	1212.3	1206.3
32.5°	1203.3	1194.4	1170.4	1161.4	1155.3
35°	1156.9	1142.0	1118.0	1109.0	1101.5
37.5°	1104.5	1091.0	1067.0	1056.6	1049.1
40°	1050.7	1038.6	1014.6	1001.3	995.3
42.5°	998.3	986.2	962.4	947.3	938.4
45°	941.4	931.0	908.4	892.1	886.0
47.5°	886.0	875.5	851.6	835.1	826.2
50°	827.6	820.1	799.2	778.2	770.7
52.5°	770.7	760.3	740.9	724.4	713.9
55°	712.5	703.4	685.5	667.5	660.1
57.5°	654.0	646.6	627.0	609.1	603.1
60°	595.6	589.7	568.8	552.3	547.8
62.5°	538.8	528.3	513.4	498.4	492.4
65°	480.5	471.4	456.5	443.0	435.6
67.5°	420.6	413.0	399.7	389.2	383.2
70°	365.2	359.2	345.7	335.2	329.3
72.5°	308.4	302.3	294.9	284.4	279.9
75°	251.4	248.5	240.9	232.0	235.0
77.5°	200.5	194.5	191.5	187.0	182.6
80°	149.7	148.1	145.1	140.7	137.7
82.5°	101.8	101.8	100.4	94.3	94.3
85°	61.3	59.9	58.4	53.8	52.4
87.5°	27.0	24.0	21.0	16.5	14.9
90°	2.9	34.3	93.4	87.7	90.6
92.5°	59.1	80.1	83.0	85.8	85.8
95°	139.2	165.9	170.7	170.7	165.9
97.5°	231.7	256.5	267.0	267.0	267.0
100°	338.5	360.4	368.0	368.0	365.2
102.5°	451.0	467.2	477.7	480.5	477.7
105°	574.0	581.6	587.3	592.1	592.1
107.5°	696.0	707.5	707.5	709.4	696.0
110°	814.3	829.5	829.5	829.5	821.9

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	942.0	958.2	955.4	947.7	942.0
115°	1067.9	1083.1	1078.4	1075.5	1067.9
117.5°	1192.8	1213.8	1200.4	1192.8	1185.1
120°	1318.6	1339.6	1318.6	1318.6	1310.1
122.5°	1433.0	1459.7	1446.4	1438.8	1433.0
125°	1553.2	1577.0	1569.4	1560.8	1558.0
127.5°	1670.5	1700.0	1689.5	1678.1	1670.5
130°	1780.1	1814.4	1809.7	1803.9	1793.5
132.5°	1903.1	1929.8	1931.7	1918.4	1910.7
135°	2008.9	2038.5	2044.2	2041.4	2033.7
137.5°	2127.2	2151.0	2155.8	2153.9	2142.4
140°	2231.1	2254.9	2268.3	2268.3	2257.8
142.5°	2337.9	2361.7	2369.3	2372.2	2361.7
145°	2438.9	2458.0	2473.3	2476.1	2465.6
147.5°	2529.5	2553.4	2564.8	2569.6	2559.1
150°	2623.0	2639.2	2649.7	2658.2	2649.7
152.5°	2705.9	2722.1	2735.5	2746.0	2735.5
155°	2788.9	2796.5	2805.1	2818.4	2809.8
157.5°	2860.4	2866.1	2870.9	2889.9	2876.6
160°	2924.3	2930.0	2932.8	2949.0	2937.6
162.5°	2983.4	2983.4	2986.2	3004.3	2991.0
165°	3033.9	3031.0	3031.0	3050.1	3036.8
167.5°	3079.7	3071.1	3071.1	3090.2	3076.8
170°	3114.0	3106.4	3103.5	3122.6	3106.4
172.5°	3137.8	3130.2	3127.3	3146.4	3130.2
175°	3156.9	3149.3	3143.6	3162.6	3146.4
177.5°	3167.4	3159.8	3154.0	3170.2	3154.0
180°	3162.6	3162.6	3162.6	3162.6	3162.6

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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	5.70	6.41	6.80	7.51	9.03	5.26	5.98	6.37	7.08	8.60
	3H	7.35	7.98	8.46	9.09	10.63	6.87	7.51	7.99	8.62	10.16
	4H	7.93	8.53	9.05	9.64	11.19	7.45	8.06	8.58	9.17	10.71
	6H	8.32	8.88	9.45	9.99	11.54	7.84	8.40	8.98	9.52	11.07
	8H	8.42	8.95	9.56	10.08	11.63	7.95	8.48	9.08	9.61	11.15
	12H	8.46	8.97	9.60	10.09	11.66	7.98	8.49	9.12	9.61	11.18
4H	2H	6.14	6.75	7.27	7.86	9.40	5.79	6.40	6.93	7.51	9.05
	3H	7.99	8.50	9.13	9.64	11.19	7.60	8.11	8.74	9.24	10.80
	4H	8.70	9.17	9.84	10.29	11.87	8.30	8.76	9.44	9.89	11.46
	6H	9.21	9.61	10.36	10.76	12.32	8.80	9.20	9.95	10.35	11.91
	8H	9.36	9.73	10.50	10.87	12.45	8.94	9.32	10.09	10.46	12.04
	12H	9.42	9.76	10.58	10.91	12.50	9.00	9.34	10.16	10.49	12.08
8H	4H	8.89	9.26	10.03	10.40	11.98	8.53	8.90	9.67	10.04	11.62
	6H	9.51	9.82	10.68	11.00	12.58	9.15	9.46	10.32	10.64	12.22
	8H	9.73	10.00	10.91	11.16	12.76	9.36	9.63	10.54	10.79	12.39
	12H	9.86	10.10	11.03	11.25	12.89	9.47	9.71	10.65	10.87	12.50
12H	4H	8.87	9.20	10.03	10.36	11.94	8.51	8.85	9.68	10.00	11.59
	6H	9.54	9.81	10.71	10.97	12.57	9.19	9.46	10.36	10.62	12.22
	8H	9.78	10.01	10.95	11.17	12.81	9.42	9.66	10.60	10.82	12.45