

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: P905430

Luminaire Tested: DFN2DIP-HX4F0-040D120US835-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P905430
REPORT IS A COMBINATION OF REPORTS P899443 AND P896188
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX4F0-040D120US835-FLLFLL
Description: 4 foot, Hexagon Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

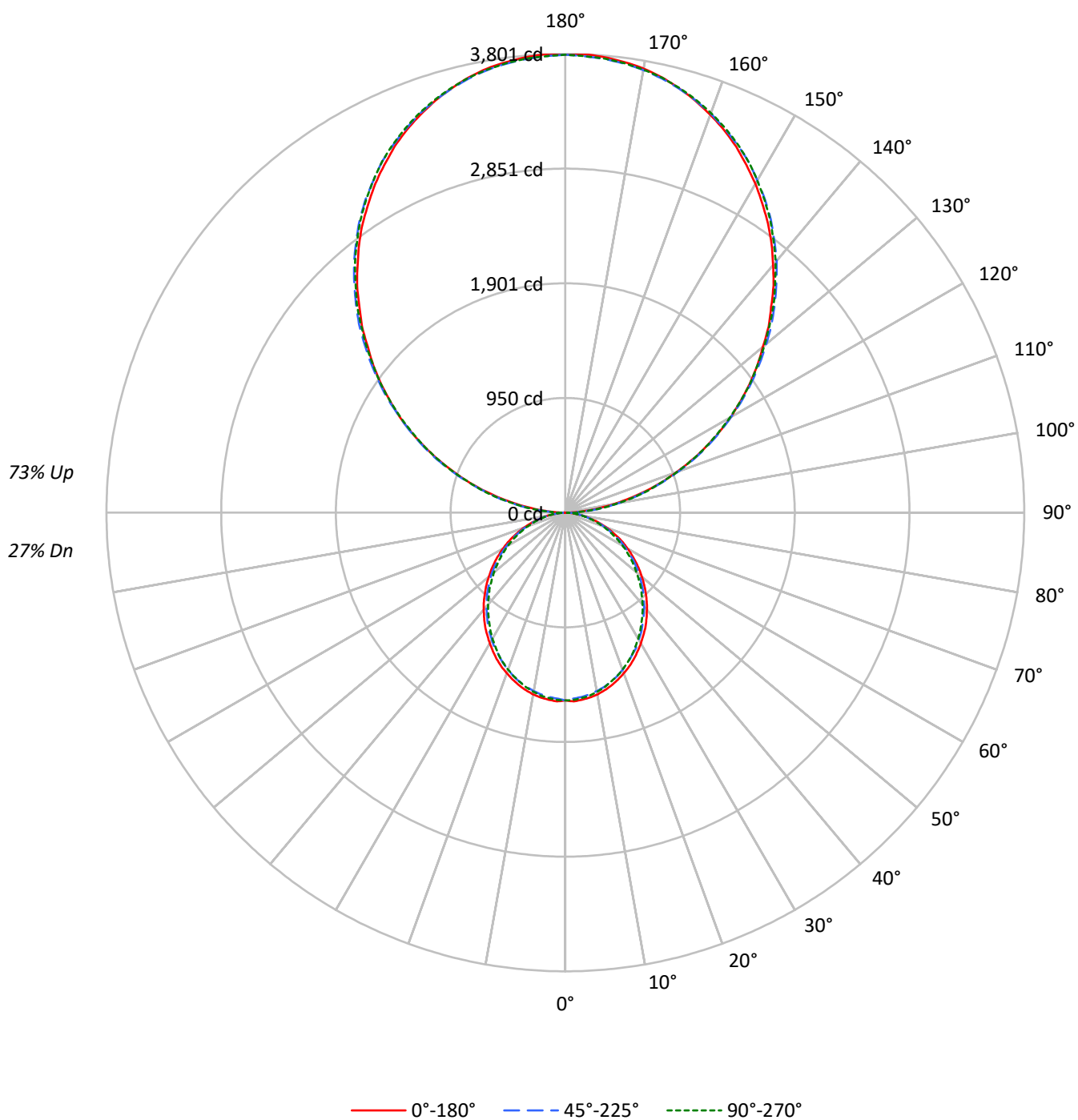
Lumens per Lamp: N/A
Luminaire Lumens: 14580.0 lumens
Efficiency: N/A
Efficacy: 136.9 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.54' x L: 4.09' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 106.5
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	102	102	102	102	91	91	91	91	71	71	71	52	52	52	35	35	35
1	93	88	85	81	83	79	76	73	62	60	58	46	44	43	31	30	30
2	84	77	71	66	75	69	64	60	54	51	48	40	38	36	27	26	25
3	77	68	61	55	68	61	55	50	48	44	40	35	33	30	24	23	21
4	70	60	52	47	62	54	47	42	42	38	34	32	29	26	22	20	18
5	64	53	45	40	57	48	41	36	38	33	29	28	25	22	19	17	16
6	59	48	40	34	53	43	36	31	34	29	25	25	22	20	18	16	14
7	55	43	35	30	49	39	32	27	31	26	22	23	20	17	16	14	12
8	51	39	31	26	45	35	28	24	28	23	20	21	18	15	15	13	11
9	47	35	28	23	42	32	26	21	25	21	17	19	16	14	14	11	10
10	44	32	25	21	39	29	23	19	23	19	16	18	15	12	13	10	9

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: 2862 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	146.5	1.0
10°-20°	412.2	2.8
20°-30°	605.7	4.2
30°-40°	703.5	4.8
40°-50°	702.6	4.8
50°-60°	612.7	4.2
60°-70°	452.9	3.1
70°-80°	256.2	1.8
80°-90°	78.4	0.5
90°-100°	234.8	1.6
100°-110°	746.2	5.1
110°-120°	1276.9	8.8
120°-130°	1679.4	11.5
130°-140°	1885.0	12.9
140°-150°	1848.5	12.7
150°-160°	1550.6	10.6
160°-170°	1028.3	7.1
170°-180°	359.4	2.5
0°-30°	1164.4	8.0
0°-40°	1867.9	12.8
0°-60°	3183.2	21.8
0°-90°	3970.8	27.2
90°-120°	2257.9	15.5
90°-150°	7670.8	52.6
90°-180°	10609.0	72.8
0°-180°	14580.0	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	41	112	105	109	14
95°	167	199	205	205	199	186
105°	689	698	705	710	710	727
115°	1281	1300	1294	1291	1281	1267
125°	1864	1892	1883	1873	1870	1666
135°	2411	2446	2453	2450	2440	1863
145°	2927	2950	2968	2971	2959	1829
155°	3347	3356	3366	3382	3372	1540
165°	3641	3637	3637	3660	3644	1027
175°	3788	3779	3772	3795	3776	360
180°	3795	3795	3795	3795	3795	

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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°	3.4	41.2	112.1	105.3	108.7
92.5°	70.9	96.1	99.5	103.0	103.0
95°	167.0	199.1	204.8	204.8	199.1
97.5°	278.0	307.8	320.4	320.4	320.4
100°	406.2	432.5	441.6	441.6	438.2
102.5°	541.2	560.6	573.2	576.7	573.2
105°	688.8	697.9	704.8	710.5	710.5
107.5°	835.2	849.0	849.0	851.2	835.2
110°	977.1	995.4	995.4	995.4	986.3

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1130.4	1149.9	1146.4	1137.3	1130.4
115°	1281.4	1299.8	1294.0	1290.6	1281.4
117.5°	1431.3	1456.5	1440.5	1431.3	1422.2
120°	1582.4	1607.5	1582.4	1582.4	1572.1
122.5°	1719.7	1751.7	1735.7	1726.5	1719.7
125°	1863.8	1892.4	1883.3	1873.0	1869.5
127.5°	2004.6	2040.0	2027.4	2013.7	2004.6
130°	2136.1	2177.3	2171.6	2164.7	2152.1
132.5°	2283.7	2315.8	2318.0	2302.0	2292.9
135°	2410.7	2446.2	2453.1	2449.6	2440.5
137.5°	2552.6	2581.2	2586.9	2584.6	2570.9
140°	2677.3	2705.9	2721.9	2721.9	2709.3
142.5°	2805.5	2834.1	2843.2	2846.6	2834.1
145°	2926.7	2949.6	2967.9	2971.4	2958.8
147.5°	3035.4	3064.0	3077.8	3083.5	3070.9
150°	3147.6	3167.0	3179.6	3189.9	3179.6
152.5°	3247.1	3266.5	3282.6	3295.2	3282.6
155°	3346.6	3355.8	3366.1	3382.1	3371.8
157.5°	3432.5	3439.3	3445.0	3467.9	3451.9
160°	3509.1	3516.0	3519.4	3538.9	3525.1
162.5°	3580.0	3580.0	3583.5	3605.2	3589.2
165°	3640.7	3637.3	3637.3	3660.1	3644.1
167.5°	3695.6	3685.3	3685.3	3708.2	3692.2
170°	3736.8	3727.6	3724.2	3747.1	3727.6
172.5°	3765.4	3756.2	3752.8	3775.7	3756.2
175°	3788.3	3779.1	3772.3	3795.1	3775.7
177.5°	3800.9	3791.7	3784.8	3804.3	3784.8
180°	3795.1	3795.1	3795.1	3795.1	3795.1

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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	5.17	5.86	6.30	6.98	8.54	4.74	5.43	5.87	6.55	8.11
	3H	6.82	7.43	7.96	8.57	10.14	6.34	6.96	7.48	8.09	9.67
	4H	7.40	7.98	8.55	9.11	10.70	6.92	7.51	8.07	8.64	10.22
	6H	7.79	8.33	8.95	9.46	11.06	7.31	7.85	8.47	8.99	10.58
	8H	7.89	8.40	9.05	9.55	11.14	7.41	7.93	8.57	9.08	10.66
	12H	7.93	8.42	9.09	9.56	11.17	7.45	7.94	8.61	9.08	10.69
4H	2H	5.61	6.20	6.77	7.33	8.91	5.27	5.85	6.42	6.98	8.57
	3H	7.46	7.95	8.62	9.11	10.70	7.07	7.56	8.23	8.71	10.31
	4H	8.17	8.62	9.33	9.76	11.38	7.76	8.21	8.93	9.36	10.97
	6H	8.68	9.06	9.84	10.23	11.83	8.27	8.65	9.43	9.82	11.42
	8H	8.82	9.18	9.99	10.34	11.96	8.41	8.77	9.58	9.93	11.55
	12H	8.89	9.21	10.07	10.38	12.01	8.46	8.79	9.65	9.96	11.59
8H	4H	8.35	8.71	9.52	9.87	11.49	7.99	8.35	9.16	9.51	11.13
	6H	8.98	9.27	10.17	10.48	12.10	8.61	8.91	9.80	10.11	11.73
	8H	9.20	9.46	10.39	10.64	12.28	8.83	9.09	10.02	10.27	11.91
	12H	9.32	9.55	10.52	10.73	12.40	8.94	9.16	10.13	10.34	12.01
12H	4H	8.33	8.66	9.51	9.83	11.45	7.98	8.30	9.16	9.47	11.10
	6H	9.01	9.27	10.20	10.45	12.08	8.65	8.91	9.85	10.09	11.73
	8H	9.24	9.47	10.44	10.65	12.32	8.88	9.11	10.08	10.29	11.96

END OF REPORT