

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: P905183

Luminaire Tested: DFN2DIP-HX2F0-030D060US835-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P905183
REPORT IS A COMBINATION OF REPORTS P900713 AND P897595
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX2F0-030D060US835-FLLONL
Description: 2 foot, Hexagon Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

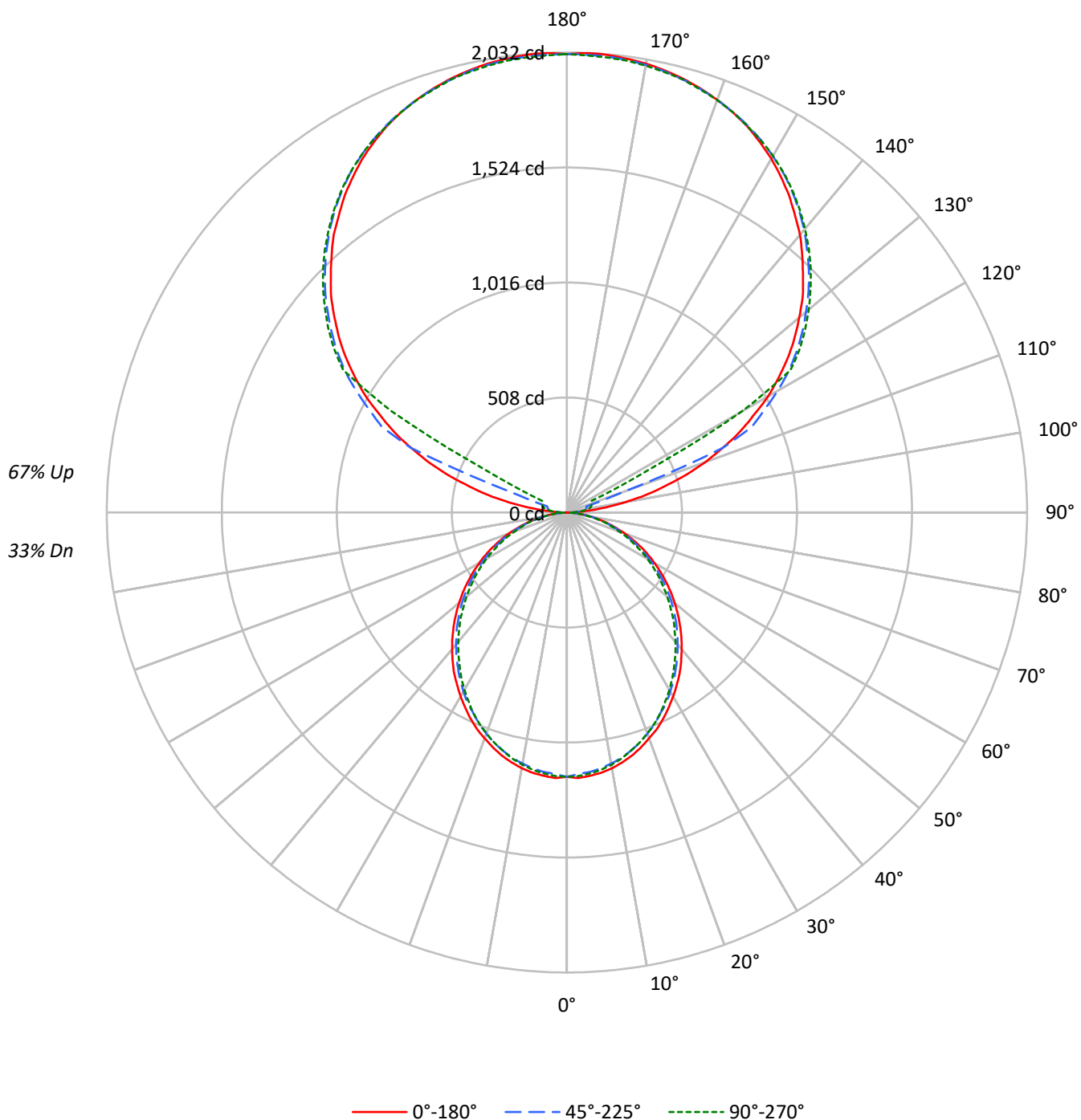
Lumens per Lamp: N/A
Luminaire Lumens: 8910.0 lumens
Efficiency: N/A
Efficacy: 121.1 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 1.99' x L: 2.3' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 73.6
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9951
Total Harmonic Distortion (THDi): 0.07
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	93	93	93	93	74	74	74	57	57	57	41	41	41
1	94	90	86	83	85	81	78	75	65	63	61	50	48	47	36	35	34
2	86	78	72	67	77	71	66	62	57	53	50	44	41	39	32	30	29
3	78	69	62	56	70	62	56	51	50	46	42	39	36	33	28	26	25
4	71	61	53	47	64	55	49	43	44	40	36	34	31	28	25	23	21
5	65	54	46	40	59	49	42	37	40	35	31	31	27	25	23	20	18
6	60	48	41	35	54	44	37	32	36	31	27	28	24	21	20	18	16
7	56	44	36	30	50	40	33	28	32	27	23	25	22	19	19	16	14
8	51	39	32	27	46	36	29	25	29	24	21	23	19	17	17	15	13
9	48	36	29	24	43	33	26	22	27	22	19	21	18	15	16	13	12
10	45	33	26	21	40	30	24	20	25	20	17	19	16	14	15	12	11

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2750	2750	2750
5°	2750	2705	2725
10°	2724	2663	2683
15°	2679	2612	2621
20°	2621	2545	2557
25°	2563	2465	2484
30°	2490	2391	2392
35°	2422	2305	2295
40°	2338	2217	2203
45°	2255	2129	2108
50°	2163	2036	1999
55°	2067	1929	1898
60°	1957	1803	1781
65°	1838	1671	1644
70°	1685	1511	1495
75°	1476	1319	1351
80°	1222	1073	1091
85°	830	673	675

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2255 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	109.9	1.2
10°-20°	309.1	3.5
20°-30°	454.3	5.1
30°-40°	527.6	5.9
40°-50°	527.0	5.9
50°-60°	459.5	5.2
60°-70°	339.7	3.8
70°-80°	192.2	2.2
80°-90°	54.3	0.6
90°-100°	66.8	0.7
100°-110°	248.9	2.8
110°-120°	660.2	7.4
120°-130°	1094.9	12.3
130°-140°	1163.0	13.1
140°-150°	1080.9	12.1
150°-160°	869.0	9.8
160°-170°	560.0	6.3
170°-180°	192.7	2.2
0°-30°	873.3	9.8
0°-40°	1400.9	15.7
0°-60°	2387.4	26.8
0°-90°	2973.6	33.4
90°-120°	975.8	11.0
90°-150°	4314.7	48.4
90°-180°	5936.0	66.6
0°-180°	8910.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1167	1167	1167	1167	1167	
5°	1167	1163	1150	1160	1157	111
15°	1111	1105	1090	1094	1089	313
25°	1006	997	978	980	978	463
35°	868	856	838	832	826	542
45°	706	698	681	669	664	545
55°	534	528	514	501	495	478
65°	360	354	342	332	327	356
75°	188	186	181	174	176	201
85°	46	45	44	40	39	51
90°	1	18	29	37	40	8
95°	95	47	57	65	63	113
105°	445	489	89	105	111	476
115°	842	867	904	226	120	829
125°	1191	1210	1238	1248	1253	1062
135°	1474	1498	1511	1525	1522	1139
145°	1710	1708	1733	1744	1736	1069
155°	1883	1870	1887	1896	1884	868
165°	1984	1975	1980	1990	1980	560
175°	2029	2019	2022	2032	2018	193
180°	2025	2025	2025	2025	2025	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1167.3	1167.3	1167.3	1167.3	1167.3
2.5°	1174.1	1168.5	1156.1	1167.3	1165.2
5°	1167.3	1162.9	1150.5	1159.5	1157.3
7.5°	1159.5	1152.8	1140.4	1149.5	1147.2
10°	1147.2	1139.3	1125.9	1134.8	1131.5
12.5°	1130.3	1123.6	1110.2	1115.7	1113.5
15°	1111.2	1104.6	1089.9	1094.4	1088.8
17.5°	1087.6	1081.0	1066.3	1071.9	1066.3
20°	1061.8	1055.1	1039.4	1042.7	1038.3
22.5°	1036.1	1026.0	1011.3	1011.3	1009.0
25°	1005.7	996.8	977.7	979.9	977.7
27.5°	972.0	964.1	949.6	946.3	940.7
30°	938.4	929.4	912.6	909.2	904.7
32.5°	902.5	895.8	877.8	871.0	866.5
35°	867.7	856.5	838.5	831.7	826.1
37.5°	828.4	818.3	800.3	792.4	786.8
40°	788.0	779.0	761.0	751.0	746.5
42.5°	748.7	739.7	721.8	710.5	703.8
45°	706.1	698.2	681.3	669.0	664.5
47.5°	664.5	656.7	638.7	626.3	619.6
50°	620.7	615.1	599.4	583.7	578.1
52.5°	578.1	570.2	555.7	543.3	535.4
55°	534.4	527.6	514.1	500.7	495.1
57.5°	490.5	484.9	470.3	456.8	452.3
60°	446.7	442.3	426.6	414.2	410.9
62.5°	404.1	396.2	385.0	373.8	369.3
65°	360.4	353.6	342.4	332.3	326.7
67.5°	315.5	309.8	299.7	291.9	287.4
70°	273.9	269.4	259.3	251.4	247.0
72.5°	231.3	226.7	221.1	213.3	210.0
75°	188.5	186.4	180.7	174.0	176.3
77.5°	150.4	145.9	143.6	140.3	137.0
80°	112.3	111.1	108.8	105.5	103.3
82.5°	76.3	76.3	75.3	70.7	70.7
85°	46.0	44.9	43.8	40.4	39.3
87.5°	20.2	18.0	15.7	12.4	11.2
90°	1.4	17.6	29.2	36.7	39.5
92.5°	36.7	30.8	35.1	38.1	39.5
95°	95.2	46.8	57.1	64.6	63.0
97.5°	171.4	51.3	74.6	79.2	80.6
100°	259.4	58.6	83.5	95.2	98.1
102.5°	356.0	353.2	86.5	102.5	107.0
105°	445.4	489.4	89.4	105.4	111.4
107.5°	549.5	586.0	92.4	108.4	114.3
110°	649.2	679.8	256.5	110.0	115.7

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	742.9	769.2	744.3	112.7	117.3
115°	842.5	867.4	904.1	225.7	120.2
117.5°	928.9	958.2	983.2	773.6	389.7
120°	1025.7	1047.6	1074.1	1091.6	893.8
122.5°	1107.6	1131.1	1160.5	1169.2	1170.8
125°	1191.2	1210.3	1238.1	1248.4	1252.7
127.5°	1267.4	1287.9	1310.0	1324.6	1326.0
130°	1339.2	1362.7	1378.7	1394.9	1393.5
132.5°	1412.5	1431.6	1447.6	1460.8	1459.4
135°	1474.1	1497.6	1510.6	1525.4	1522.4
137.5°	1538.4	1556.0	1570.8	1585.4	1581.1
140°	1601.4	1613.3	1629.3	1642.5	1635.2
142.5°	1654.3	1664.6	1683.6	1695.2	1687.9
145°	1710.0	1708.4	1733.3	1743.6	1736.3
147.5°	1758.2	1753.8	1778.7	1786.0	1780.3
150°	1805.2	1794.9	1818.4	1827.1	1819.8
152.5°	1844.7	1833.0	1854.9	1863.8	1853.5
155°	1882.8	1869.7	1887.3	1896.0	1884.3
157.5°	1913.6	1901.9	1915.1	1925.4	1913.6
160°	1940.0	1931.1	1940.0	1948.7	1938.5
162.5°	1963.3	1954.6	1961.9	1972.2	1959.0
165°	1983.9	1975.2	1979.5	1989.8	1979.5
167.5°	2000.0	1991.2	1995.7	2006.0	1992.7
170°	2013.3	2004.4	2007.4	2017.6	2004.4
172.5°	2022.0	2013.3	2016.2	2026.5	2013.3
175°	2029.3	2019.0	2022.0	2032.2	2017.6
177.5°	2032.2	2022.0	2023.5	2033.8	2020.6
180°	2024.9	2024.9	2024.9	2024.9	2024.9

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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	8.88	9.61	9.97	10.69	12.18	8.45	9.18	9.54	10.27	11.76
	3H	10.50	11.16	11.60	12.25	13.76	10.04	10.70	11.14	11.79	13.30
	4H	11.07	11.69	12.17	12.78	14.30	10.61	11.23	11.72	12.33	13.84
	6H	11.44	12.01	12.56	13.11	14.64	10.98	11.55	12.10	12.65	14.18
	8H	11.53	12.07	12.65	13.19	14.71	11.07	11.62	12.19	12.73	14.25
	12H	11.57	12.08	12.69	13.19	14.73	11.10	11.62	12.23	12.73	14.27
4H	2H	9.31	9.93	10.43	11.03	12.54	8.97	9.59	10.09	10.69	12.20
	3H	11.14	11.65	12.26	12.78	14.30	10.75	11.27	11.87	12.39	13.92
	4H	11.83	12.30	12.95	13.41	14.96	11.43	11.91	12.56	13.02	14.57
	6H	12.31	12.72	13.44	13.85	15.39	11.92	12.32	13.05	13.46	15.00
	8H	12.44	12.83	13.58	13.95	15.51	12.05	12.43	13.18	13.56	15.11
	12H	12.50	12.84	13.65	13.98	15.54	12.10	12.44	13.24	13.58	15.14
8H	4H	12.00	12.38	13.13	13.51	15.06	11.65	12.03	12.78	13.16	14.71
	6H	12.60	12.91	13.75	14.08	15.63	12.25	12.56	13.40	13.73	15.28
	8H	12.80	13.07	13.96	14.22	15.80	12.44	12.72	13.60	13.87	15.44
	12H	12.91	13.15	14.07	14.30	15.90	12.54	12.78	13.70	13.93	15.53
12H	4H	11.98	12.32	13.13	13.46	15.02	11.63	11.98	12.78	13.12	14.68
	6H	12.62	12.90	13.78	14.05	15.62	12.28	12.56	13.44	13.70	15.28
	8H	12.84	13.08	14.00	14.23	15.83	12.49	12.73	13.66	13.88	15.49