

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: P928876

Luminaire Tested: DFN2DIP-HX4F0-050D100US935-FLLONL

Issue Date: 12/12/2024

Test Information

Test Method: LM-79-2019
Report Number: P928876
REPORT IS A COMBINATION OF REPORTS P900929 AND P896187
Test Lab: INNOVATION CENTER
Issue Date: 12/12/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX4F0-050D100US935-FLLONL
Description: 4 foot, Hexagon Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

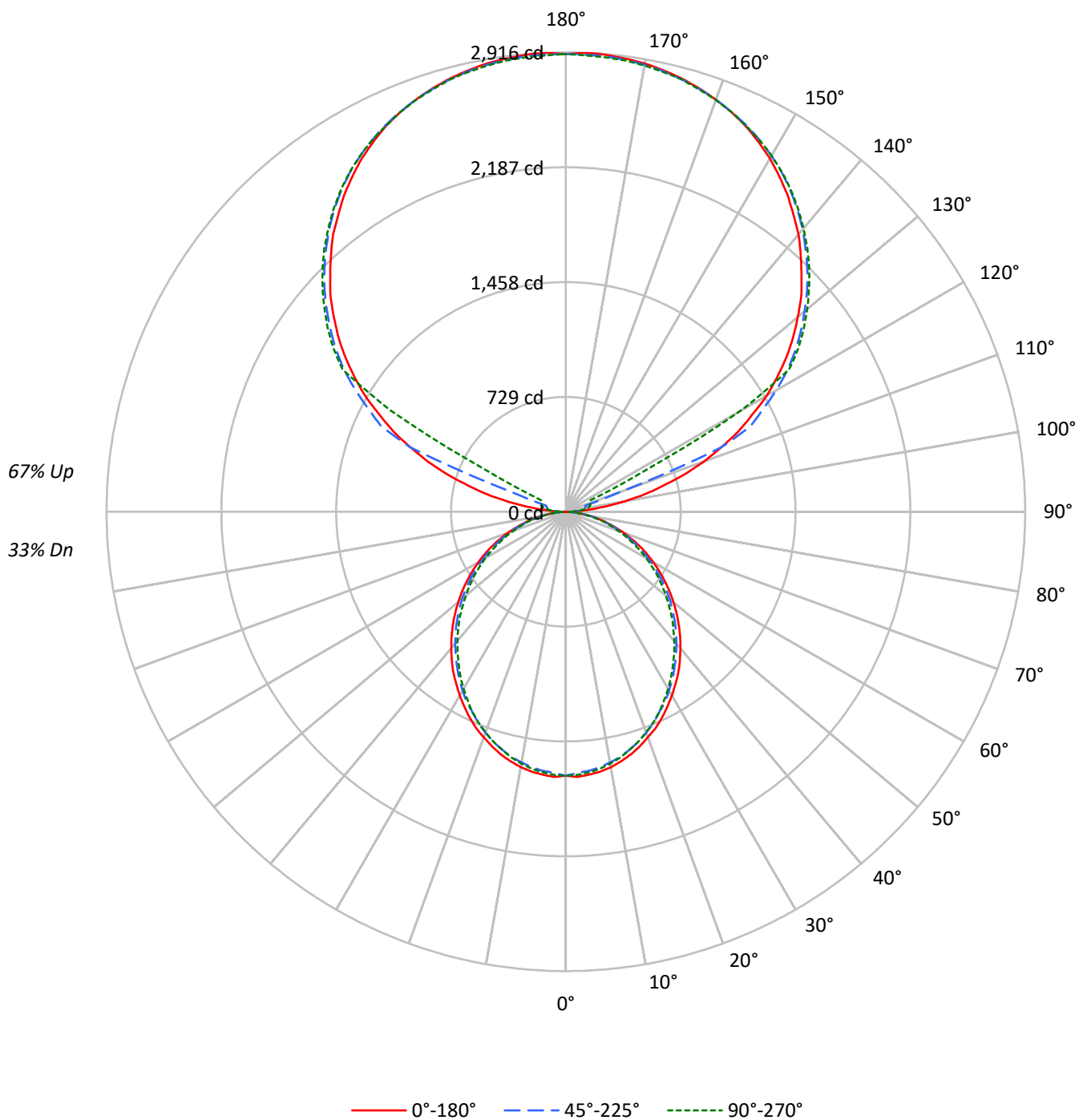
Lumens per Lamp: N/A
Luminaire Lumens: 12785.9 lumens
Efficiency: N/A
Efficacy: 106.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.54' x L: 4.09' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 119.8
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9957
Total Harmonic Distortion (THDi): 0.049
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P928876

CATALOG NUMBER: DFN2DIP-HX4F0-050D100US935-FLLONL

Luminous Intensity Polar Plot



TEST NUMBER: P928876

CATALOG NUMBER: DFN2DIP-HX4F0-050D100US935-FLLONL

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°	1246	1246	1246
5°	1248	1228	1237
10°	1238	1212	1220
15°	1220	1192	1194
20°	1195	1164	1167
25°	1171	1131	1136
30°	1140	1101	1097
35°	1111	1064	1055
40°	1076	1028	1016
45°	1040	991	975
50°	1001	953	928
55°	960	908	885
60°	915	855	836
65°	864	800	778
70°	801	734	715
75°	712	654	658
80°	606	552	547
85°	440	376	364

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 1493 cd/sqm

TEST NUMBER: P928876

CATALOG NUMBER: DFN2DIP-HX4F0-050D100US935-FLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	157.7	1.2
10°-20°	443.6	3.5
20°-30°	651.9	5.1
30°-40°	757.2	5.9
40°-50°	756.2	5.9
50°-60°	659.4	5.2
60°-70°	487.4	3.8
70°-80°	275.8	2.2
80°-90°	77.9	0.6
90°-100°	95.8	0.7
100°-110°	357.2	2.8
110°-120°	947.3	7.4
120°-130°	1571.2	12.3
130°-140°	1669.0	13.1
140°-150°	1551.1	12.1
150°-160°	1247.1	9.8
160°-170°	803.6	6.3
170°-180°	276.6	2.2
0°-30°	1253.2	9.8
0°-40°	2010.3	15.7
0°-60°	3425.9	26.8
0°-90°	4267.1	33.4
90°-120°	1400.3	11.0
90°-150°	6191.6	48.4
90°-180°	8519.0	66.6
0°-180°	12785.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1675	1675	1675	1675	1675	
5°	1675	1669	1651	1664	1661	159
15°	1595	1585	1564	1571	1562	449
25°	1443	1430	1403	1406	1403	664
35°	1245	1229	1203	1194	1186	778
45°	1013	1002	978	960	954	782
55°	767	757	738	718	710	686
65°	517	507	491	477	469	511
75°	270	267	259	250	253	289
85°	66	64	63	58	56	74
90°	2	25	42	53	57	12
95°	137	67	82	93	90	162
105°	639	702	128	151	160	683
115°	1209	1245	1297	324	172	1190
125°	1709	1737	1777	1792	1798	1525
135°	2115	2149	2168	2189	2185	1634
145°	2454	2452	2487	2502	2492	1535
155°	2702	2683	2708	2721	2704	1245
165°	2847	2834	2841	2855	2841	804
175°	2912	2897	2902	2916	2895	277
180°	2906	2906	2906	2906	2906	

TEST NUMBER: P928876

CATALOG NUMBER: DFN2DIP-HX4F0-050D100US935-FLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1675.1	1675.1	1675.1	1675.1	1675.1
2.5°	1684.8	1676.8	1659.1	1675.1	1672.1
5°	1675.1	1668.8	1651.0	1663.8	1660.8
7.5°	1663.8	1654.2	1636.5	1649.5	1646.2
10°	1646.2	1635.0	1615.7	1628.4	1623.7
12.5°	1622.0	1612.4	1593.1	1601.1	1597.8
15°	1594.6	1585.0	1564.0	1570.6	1562.5
17.5°	1560.7	1551.2	1530.2	1538.2	1530.2
20°	1523.7	1514.2	1491.6	1496.3	1490.0
22.5°	1486.8	1472.2	1451.2	1451.2	1447.9
25°	1443.2	1430.4	1403.0	1406.1	1403.0
27.5°	1394.8	1383.5	1362.7	1357.9	1349.9
30°	1346.6	1333.7	1309.6	1304.8	1298.3
32.5°	1295.0	1285.5	1259.6	1249.9	1243.5
35°	1245.1	1229.1	1203.2	1193.5	1185.5
37.5°	1188.7	1174.2	1148.4	1137.1	1129.1
40°	1130.8	1117.8	1092.0	1077.6	1071.2
42.5°	1074.4	1061.4	1035.8	1019.5	1010.0
45°	1013.2	1001.9	977.7	960.1	953.6
47.5°	953.6	942.3	916.5	898.7	889.2
50°	890.7	882.7	860.1	837.6	829.5
52.5°	829.5	818.2	797.4	779.6	768.4
55°	766.8	757.1	737.7	718.4	710.4
57.5°	703.9	695.9	674.9	655.6	649.0
60°	641.0	634.7	612.2	594.3	589.6
62.5°	579.9	568.6	552.5	536.4	529.9
65°	517.1	507.4	491.3	476.8	468.7
67.5°	452.7	444.5	430.2	418.9	412.3
70°	393.0	386.6	372.0	360.8	354.5
72.5°	331.9	325.4	317.4	306.1	301.3
75°	270.5	267.4	259.2	249.7	253.0
77.5°	215.9	209.3	206.1	201.3	196.6
80°	161.2	159.5	156.2	151.4	148.2
82.5°	109.5	109.5	108.0	101.5	101.5
85°	66.0	64.4	62.9	57.9	56.4
87.5°	29.0	25.8	22.6	17.7	16.1
90°	2.0	25.2	41.9	52.7	56.7
92.5°	52.7	44.2	50.5	54.7	56.7
95°	136.6	67.2	81.9	92.6	90.4
97.5°	245.9	73.6	107.1	113.6	115.6
100°	372.3	84.1	119.9	136.6	140.9
102.5°	510.8	506.9	124.1	147.1	153.5
105°	639.2	702.3	128.4	151.3	159.8
107.5°	788.5	840.9	132.6	155.6	164.0
110°	931.5	975.5	368.0	157.8	166.0

TEST NUMBER: P928876

CATALOG NUMBER: DFN2DIP-HX4F0-050D100US935-FLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1066.1	1103.8	1068.2	161.8	168.3
115°	1208.9	1244.7	1297.4	323.8	172.5
117.5°	1333.0	1375.0	1410.9	1110.1	559.3
120°	1471.9	1503.3	1541.3	1566.5	1282.6
122.5°	1589.5	1623.2	1665.3	1677.8	1680.1
125°	1709.3	1736.8	1776.8	1791.5	1797.7
127.5°	1818.7	1848.1	1879.8	1900.8	1902.8
130°	1921.8	1955.5	1978.5	2001.7	1999.7
132.5°	2026.9	2054.3	2077.3	2096.3	2094.3
135°	2115.3	2149.0	2167.7	2188.9	2184.7
137.5°	2207.7	2232.9	2254.1	2275.1	2268.8
140°	2298.0	2315.1	2338.0	2357.0	2346.5
142.5°	2373.9	2388.7	2415.9	2432.6	2422.2
145°	2453.8	2451.6	2487.3	2502.1	2491.6
147.5°	2523.0	2516.8	2552.4	2562.9	2554.8
150°	2590.4	2575.7	2609.4	2621.9	2611.4
152.5°	2647.1	2630.4	2661.9	2674.5	2659.8
155°	2701.8	2683.0	2708.3	2720.8	2704.1
157.5°	2746.0	2729.3	2748.2	2762.9	2746.0
160°	2784.0	2771.2	2784.0	2796.4	2781.7
162.5°	2817.4	2804.9	2815.4	2830.1	2811.2
165°	2846.8	2834.3	2840.6	2855.3	2840.6
167.5°	2870.1	2857.3	2863.9	2878.6	2859.6
170°	2889.0	2876.3	2880.6	2895.3	2876.3
172.5°	2901.5	2889.0	2893.3	2908.0	2889.0
175°	2912.0	2897.3	2901.5	2916.3	2895.3
177.5°	2916.3	2901.5	2903.8	2918.5	2899.5
180°	2905.8	2905.8	2905.8	2905.8	2905.8

TEST NUMBER: P928876

CATALOG NUMBER: DFN2DIP-HX4F0-050D100US935-FLLONL

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	6.26	6.99	7.35	8.08	9.57	5.83	6.56	6.92	7.65	9.14
	3H	7.91	8.57	9.01	9.66	11.17	7.44	8.09	8.54	9.19	10.70
	4H	8.50	9.12	9.60	10.21	11.73	8.02	8.64	9.13	9.74	11.25
	6H	8.89	9.46	10.01	10.56	12.09	8.41	8.99	9.53	10.08	11.61
	8H	8.99	9.53	10.11	10.65	12.17	8.52	9.06	9.64	10.17	11.69
	12H	9.04	9.55	10.16	10.66	12.20	8.55	9.07	9.68	10.18	11.72
4H	2H	6.71	7.33	7.82	8.43	9.94	6.36	6.98	7.48	8.08	9.59
	3H	8.56	9.08	9.68	10.20	11.73	8.17	8.69	9.29	9.81	11.34
	4H	9.27	9.75	10.40	10.86	12.41	8.87	9.34	9.99	10.46	12.00
	6H	9.78	10.19	10.91	11.33	12.86	9.37	9.78	10.50	10.92	12.45
	8H	9.93	10.31	11.06	11.44	12.99	9.52	9.90	10.65	11.02	12.58
	12H	10.00	10.34	11.14	11.48	13.04	9.57	9.92	10.72	11.06	12.62
8H	4H	9.46	9.84	10.59	10.97	12.52	9.10	9.48	10.23	10.61	12.16
	6H	10.09	10.40	11.24	11.57	13.12	9.72	10.04	10.88	11.21	12.76
	8H	10.31	10.58	11.47	11.73	13.30	9.94	10.21	11.10	11.36	12.93
	12H	10.43	10.67	11.60	11.82	13.43	10.05	10.29	11.21	11.44	13.04
12H	4H	9.44	9.78	10.59	10.92	12.48	9.09	9.43	10.24	10.57	12.13
	6H	10.12	10.39	11.27	11.54	13.11	9.76	10.04	10.92	11.19	12.76
	8H	10.35	10.59	11.51	11.74	13.35	10.00	10.24	11.16	11.38	12.99

END OF REPORT