

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: P918959

Luminaire Tested: DFN2DIP-HX3F0-060D030US935-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P918959
REPORT IS A COMBINATION OF REPORTS P900727 AND P897645
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX3F0-060D030US935-FLLONL
Description: 3 foot, Hexagon Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

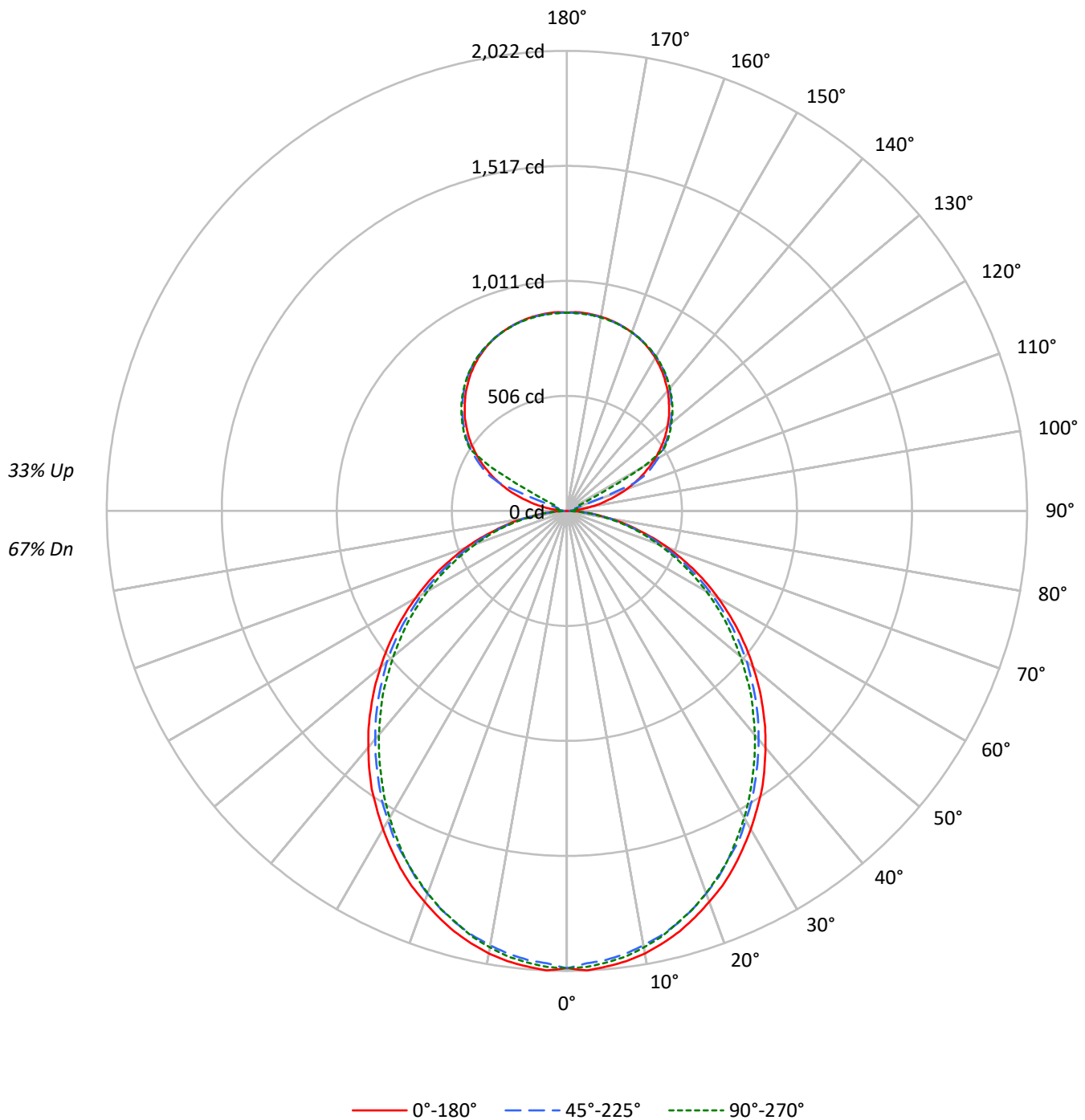
Lumens per Lamp: N/A
Luminaire Lumens: 7671.5 lumens
Efficiency: N/A
Efficacy: 96.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.84' x L: 3.28' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 79.6
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9933
Total Harmonic Distortion (THDi): 0.066
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P918959

CATALOG NUMBER: DFN2DIP-HX3F0-060D030US935-FLLONL

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	111	111	111	111	105	105	105	105	93	93	93	82	82	82	71	71	71
1	102	97	93	90	95	92	88	85	81	79	76	72	70	68	63	62	60
2	92	85	79	73	87	80	75	70	71	67	63	63	60	57	56	53	51
3	84	75	67	61	79	71	64	58	63	58	53	56	52	48	49	46	43
4	77	66	58	52	72	63	55	50	56	50	45	50	45	41	44	40	37
5	71	59	51	44	67	56	48	43	50	44	39	45	40	36	40	36	33
6	66	53	45	39	62	50	43	37	45	39	34	41	35	32	36	32	29
7	61	48	40	34	57	46	38	33	41	35	30	37	32	28	33	29	26
8	56	44	36	30	53	42	34	29	38	31	27	34	29	25	30	26	23
9	53	40	32	27	50	38	31	26	35	29	24	31	26	23	28	24	21
10	49	37	29	24	46	35	28	24	32	26	22	29	24	20	26	22	19

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2328	2328	2328
5°	2331	2294	2310
10°	2311	2262	2278
15°	2276	2223	2227
20°	2229	2170	2176
25°	2182	2106	2117
30°	2124	2047	2042
35°	2069	1977	1963
40°	2001	1907	1888
45°	1933	1836	1811
50°	1858	1762	1721
55°	1781	1677	1639
60°	1693	1575	1545
65°	1596	1469	1433
70°	1474	1341	1313
75°	1304	1186	1200
80°	1100	989	988
85°	779	654	641

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1933 cd/sqm

TEST NUMBER: P918959

CATALOG NUMBER: DFN2DIP-HX3F0-060D030US935-FLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	189.2	2.5
10°-20°	532.3	6.9
20°-30°	782.3	10.2
30°-40°	908.6	11.8
40°-50°	907.5	11.8
50°-60°	791.3	10.3
60°-70°	584.9	7.6
70°-80°	330.9	4.3
80°-90°	88.9	1.2
90°-100°	28.7	0.4
100°-110°	107.2	1.4
110°-120°	284.2	3.7
120°-130°	471.3	6.1
130°-140°	500.7	6.5
140°-150°	465.3	6.1
150°-160°	374.1	4.9
160°-170°	241.1	3.1
170°-180°	83.0	1.1
0°-30°	1503.8	19.6
0°-40°	2412.4	31.4
0°-60°	4111.1	53.6
0°-90°	5115.9	66.7
90°-120°	420.1	5.5
90°-150°	1857.5	24.2
90°-180°	2556.0	33.3
0°-180°	7671.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2010	2010	2010	2010	2010	
5°	2010	2002	1981	1997	1993	191
15°	1914	1902	1877	1885	1875	539
25°	1732	1716	1684	1687	1684	797
35°	1494	1475	1444	1432	1422	933
45°	1216	1202	1173	1152	1144	938
55°	920	908	885	862	852	823
65°	620	609	590	572	562	614
75°	325	321	311	300	304	347
85°	79	77	75	70	68	88
90°	1	8	13	16	17	7
95°	41	20	24	28	27	49
105°	192	211	38	45	48	205
115°	363	373	389	97	52	357
125°	513	521	533	537	539	457
135°	635	645	650	657	655	490
145°	736	736	746	751	747	460
155°	810	805	812	816	811	373
165°	854	850	852	857	852	241
175°	874	869	870	875	869	83
180°	872	872	872	872	872	

TEST NUMBER: P918959

CATALOG NUMBER: DFN2DIP-HX3F0-060D030US935-FLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2010.1	2010.1	2010.1	2010.1	2010.1
2.5°	2021.8	2012.2	1990.8	2010.1	2006.4
5°	2010.1	2002.5	1981.2	1996.6	1992.9
7.5°	1996.6	1985.1	1963.8	1979.3	1975.5
10°	1975.5	1962.0	1938.7	1954.1	1948.4
12.5°	1946.4	1934.8	1911.7	1921.3	1917.4
15°	1913.5	1902.0	1876.8	1884.6	1875.0
17.5°	1872.9	1861.5	1836.3	1845.8	1836.3
20°	1828.4	1817.0	1789.8	1795.6	1788.0
22.5°	1784.2	1766.7	1741.5	1741.5	1737.6
25°	1731.8	1716.5	1683.6	1687.3	1683.6
27.5°	1673.8	1660.3	1635.2	1629.5	1619.9
30°	1616.0	1600.3	1571.5	1565.7	1557.9
32.5°	1554.0	1542.6	1511.6	1499.9	1492.1
35°	1494.2	1474.9	1443.9	1432.2	1422.5
37.5°	1426.5	1409.0	1378.1	1364.5	1354.9
40°	1356.9	1341.3	1310.4	1293.2	1285.4
42.5°	1289.3	1273.7	1242.9	1223.5	1211.9
45°	1215.9	1202.3	1173.2	1152.1	1144.3
47.5°	1144.3	1130.7	1099.8	1078.5	1066.9
50°	1068.8	1059.2	1032.2	1005.0	995.4
52.5°	995.4	981.9	956.8	935.6	922.0
55°	920.1	908.4	885.3	862.1	852.5
57.5°	844.7	835.1	809.9	786.7	778.9
60°	769.2	761.6	734.6	713.3	707.5
62.5°	695.8	682.3	663.0	643.7	635.9
65°	620.5	608.9	589.6	572.1	562.5
67.5°	543.2	533.4	516.2	502.7	494.8
70°	471.7	463.9	446.4	432.9	425.3
72.5°	398.2	390.5	380.8	367.3	361.5
75°	324.6	321.0	311.1	299.6	303.5
77.5°	259.0	251.2	247.3	241.6	235.8
80°	193.4	191.3	187.4	181.7	177.8
82.5°	131.5	131.5	129.6	121.8	121.8
85°	79.1	77.3	75.4	69.5	67.7
87.5°	34.9	31.0	27.0	21.4	19.3
90°	0.6	7.6	12.6	15.8	17.0
92.5°	15.8	13.3	15.2	16.4	17.0
95°	41.0	20.1	24.5	27.8	27.1
97.5°	73.8	22.1	32.1	34.1	34.7
100°	111.7	25.2	36.0	41.0	42.3
102.5°	153.3	152.1	37.2	44.1	46.1
105°	191.7	210.7	38.5	45.4	48.0
107.5°	236.5	252.3	39.8	46.7	49.2
110°	279.5	292.7	110.4	47.4	49.9



TEST NUMBER: P918959

CATALOG NUMBER: DFN2DIP-HX3F0-060D030US935-FLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	319.9	331.1	320.5	48.6	50.5
115°	362.7	373.4	389.2	97.1	51.7
117.5°	399.9	412.5	423.3	333.0	167.8
120°	441.5	451.0	462.4	469.9	384.8
122.5°	476.8	487.0	499.6	503.3	504.0
125°	512.8	521.0	533.0	537.4	539.3
127.5°	545.6	554.4	564.0	570.2	570.8
130°	576.5	586.7	593.6	600.5	599.9
132.5°	608.0	616.3	623.2	628.9	628.3
135°	634.6	644.7	650.3	656.7	655.4
137.5°	662.3	669.9	676.2	682.5	680.6
140°	689.4	694.5	701.4	707.1	704.0
142.5°	712.2	716.6	724.8	729.8	726.7
145°	736.2	735.5	746.2	750.6	747.4
147.5°	756.9	755.0	765.8	768.9	766.4
150°	777.1	772.7	782.8	786.5	783.4
152.5°	794.1	789.1	798.6	802.4	798.0
155°	810.5	804.9	812.4	816.2	811.2
157.5°	823.8	818.8	824.5	828.9	823.8
160°	835.2	831.4	835.2	839.0	834.5
162.5°	845.2	841.5	844.6	849.0	843.3
165°	854.0	850.3	852.2	856.6	852.2
167.5°	861.0	857.2	859.1	863.6	857.9
170°	866.7	862.9	864.2	868.6	862.9
172.5°	870.5	866.7	868.0	872.4	866.7
175°	873.6	869.2	870.5	874.9	868.6
177.5°	874.9	870.5	871.2	875.5	869.9
180°	871.8	871.8	871.8	871.8	871.8

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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	11.58	12.61	12.38	13.43	14.45	11.15	12.18	11.95	13.01	14.02
	3H	13.24	14.17	14.06	15.00	16.04	12.77	13.70	13.59	14.54	15.58
	4H	13.83	14.71	14.66	15.55	16.60	13.36	14.24	14.19	15.08	16.13
	6H	14.24	15.05	15.08	15.89	16.96	13.77	14.58	14.61	15.42	16.49
	8H	14.34	15.11	15.19	15.98	17.04	13.87	14.64	14.72	15.51	16.57
	12H	14.39	15.13	15.25	15.99	17.08	13.92	14.65	14.78	15.51	16.60
4H	2H	12.06	12.93	12.89	13.77	14.82	11.71	12.59	12.55	13.43	14.48
	3H	13.93	14.66	14.78	15.54	16.60	13.54	14.27	14.39	15.15	16.21
	4H	14.65	15.31	15.50	16.18	17.28	14.24	14.91	15.10	15.78	16.87
	6H	15.16	15.74	16.04	16.63	17.73	14.76	15.33	15.63	16.23	17.33
	8H	15.31	15.85	16.19	16.74	17.85	14.91	15.44	15.78	16.33	17.44
	12H	15.39	15.88	16.29	16.78	17.90	14.97	15.46	15.87	16.37	17.48
8H	4H	14.85	15.39	15.73	16.28	17.39	14.49	15.03	15.37	15.92	17.03
	6H	15.48	15.93	16.39	16.86	17.97	15.12	15.57	16.03	16.50	17.61
	8H	15.70	16.10	16.61	17.02	18.15	15.33	15.73	16.25	16.65	17.78
	12H	15.83	16.18	16.75	17.10	18.28	15.45	15.80	16.37	16.72	17.90
12H	4H	14.85	15.33	15.74	16.24	17.36	14.50	14.98	15.39	15.89	17.01
	6H	15.51	15.91	16.43	16.83	17.96	15.16	15.56	16.08	16.48	17.61
	8H	15.76	16.11	16.67	17.02	18.20	15.40	15.75	16.32	16.67	17.85