

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: P913415

Luminaire Tested: DFN2DIP-HX2F0-060D030US927-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P913415
REPORT IS A COMBINATION OF REPORTS P900689 AND P897595
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX2F0-060D030US927-FLLONL
Description: 2 foot, Hexagon Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

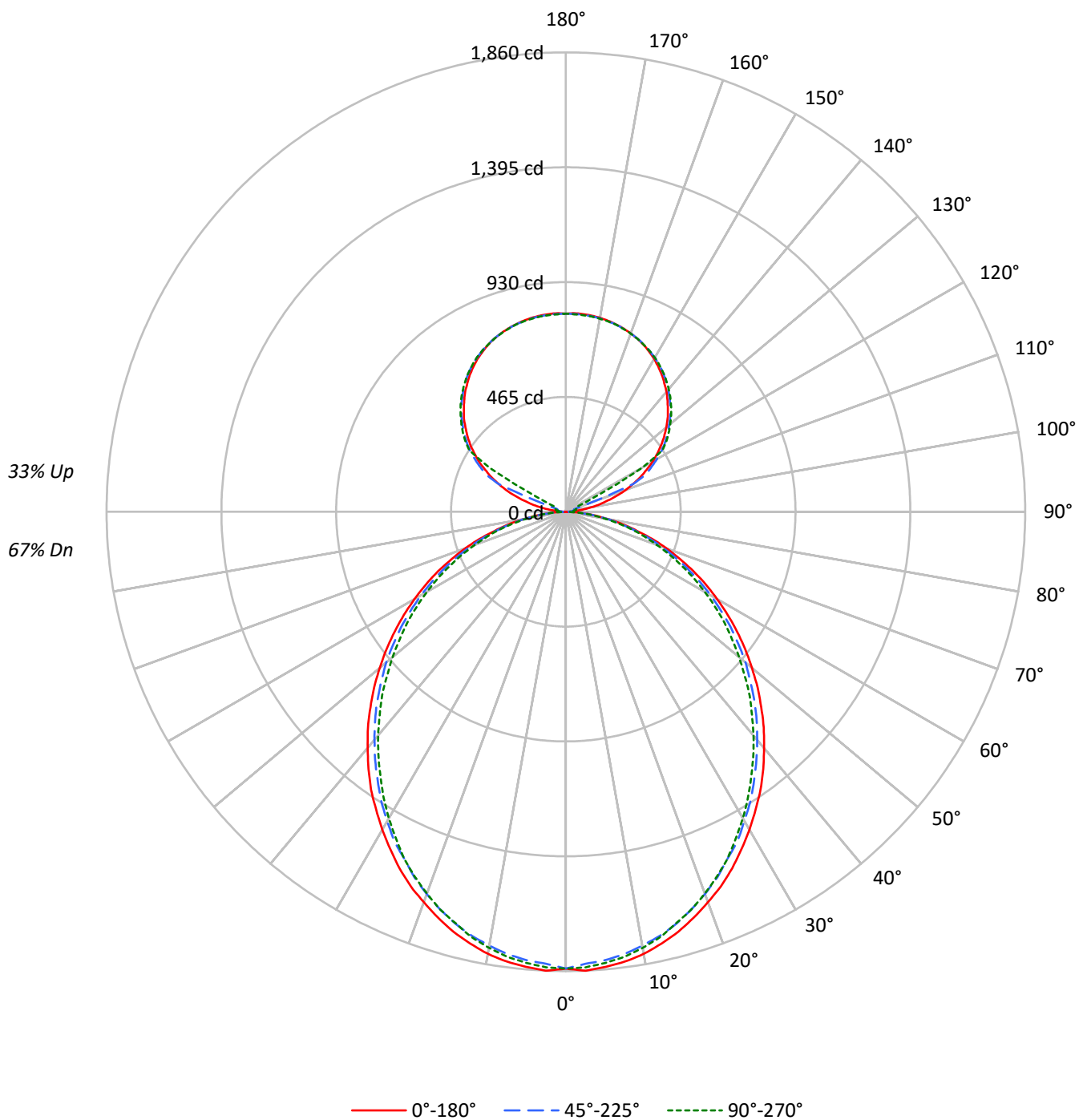
Lumens per Lamp: N/A
Luminaire Lumens: 7058.3 lumens
Efficiency: N/A
Efficacy: 86.9 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 1.99' x L: 2.3' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 81.2
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9971
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: P913415

CATALOG NUMBER: DFN2DIP-HX2F0-060D030US927-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
RCR																	
0	111	111	111	111	105	105	105	105	93	93	93		82	82	82		71
1	102	97	93	90	95	92	88	85	81	79	76		72	70	68		63
2	92	85	79	73	87	80	75	70	71	67	63		63	60	57		56
3	84	75	67	61	79	71	64	58	63	58	53		56	52	48		49
4	77	66	58	52	72	63	55	50	56	50	45		50	45	41		44
5	71	59	51	44	67	56	48	43	50	44	39		45	40	36		40
6	66	53	45	39	62	50	43	37	45	39	34		41	35	32		36
7	61	48	40	34	57	46	38	33	41	35	30		37	32	28		33
8	56	44	36	30	53	42	34	29	38	31	27		34	29	25		30
9	53	40	32	27	50	38	31	26	35	29	24		31	26	23		28
10	49	37	29	24	46	35	28	24	32	26	22		29	24	20		26

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4357	4357	4357
5°	4357	4286	4318
10°	4315	4218	4251
15°	4245	4139	4152
20°	4152	4032	4051
25°	4060	3906	3935
30°	3946	3789	3790
35°	3837	3652	3637
40°	3705	3513	3490
45°	3572	3373	3340
50°	3427	3226	3167
55°	3274	3056	3006
60°	3101	2857	2822
65°	2911	2648	2604
70°	2670	2393	2368
75°	2339	2088	2140
80°	1936	1701	1727
85°	1314	1067	1070

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3572 cd/sqm

TEST NUMBER: P913415

CATALOG NUMBER: DFN2DIP-HX2F0-060D030US927-FLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	174.1	2.5
10°-20°	489.8	6.9
20°-30°	719.8	10.2
30°-40°	836.0	11.8
40°-50°	834.9	11.8
50°-60°	728.0	10.3
60°-70°	538.2	7.6
70°-80°	304.5	4.3
80°-90°	81.8	1.2
90°-100°	26.5	0.4
100°-110°	98.6	1.4
110°-120°	261.5	3.7
120°-130°	433.7	6.1
130°-140°	460.7	6.5
140°-150°	428.1	6.1
150°-160°	344.2	4.9
160°-170°	221.8	3.1
170°-180°	76.3	1.1
0°-30°	1383.6	19.6
0°-40°	2219.6	31.4
0°-60°	3782.5	53.6
0°-90°	4707.0	66.7
90°-120°	386.5	5.5
90°-150°	1709.0	24.2
90°-180°	2351.0	33.3
0°-180°	7058.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1849	1849	1849	1849	1849	
5°	1849	1842	1823	1837	1834	176
15°	1760	1750	1727	1734	1725	496
25°	1593	1579	1549	1552	1549	733
35°	1375	1357	1328	1318	1309	858
45°	1119	1106	1079	1060	1053	863
55°	847	836	814	793	784	757
65°	571	560	542	526	518	564
75°	299	295	286	276	279	319
85°	73	71	69	64	62	81
90°	1	7	12	15	16	7
95°	38	18	23	26	25	45
105°	176	194	35	42	44	188
115°	334	344	358	89	48	329
125°	472	479	490	494	496	421
135°	584	593	598	604	603	451
145°	677	677	687	691	688	424
155°	746	741	748	751	746	344
165°	786	782	784	788	784	222
175°	804	800	801	805	799	76
180°	802	802	802	802	802	

TEST NUMBER: P913415

CATALOG NUMBER: DFN2DIP-HX2F0-060D030US927-FLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1849.4	1849.4	1849.4	1849.4	1849.4
2.5°	1860.2	1851.3	1831.7	1849.4	1846.0
5°	1849.4	1842.5	1822.8	1837.0	1833.6
7.5°	1837.0	1826.5	1806.8	1821.1	1817.6
10°	1817.6	1805.1	1783.8	1797.9	1792.6
12.5°	1790.8	1780.2	1758.9	1767.8	1764.2
15°	1760.5	1750.0	1726.8	1734.0	1725.1
17.5°	1723.2	1712.7	1689.5	1698.3	1689.5
20°	1682.3	1671.7	1646.8	1652.1	1645.1
22.5°	1641.6	1625.5	1602.3	1602.3	1598.7
25°	1593.4	1579.3	1549.0	1552.4	1549.0
27.5°	1540.0	1527.6	1504.5	1499.3	1490.4
30°	1486.8	1472.4	1445.9	1440.6	1433.4
32.5°	1429.8	1419.3	1390.8	1380.0	1372.8
35°	1374.8	1357.0	1328.5	1317.7	1308.8
37.5°	1312.5	1296.4	1268.0	1255.4	1246.6
40°	1248.5	1234.1	1205.7	1189.9	1182.6
42.5°	1186.2	1171.9	1143.6	1125.7	1115.1
45°	1118.7	1106.2	1079.4	1060.0	1052.8
47.5°	1052.8	1040.4	1011.9	992.3	981.7
50°	983.4	974.5	949.7	924.7	915.8
52.5°	915.8	903.4	880.4	860.8	848.3
55°	846.6	835.8	814.5	793.2	784.3
57.5°	777.2	768.3	745.1	723.8	716.6
60°	707.7	700.8	675.9	656.2	650.9
62.5°	640.2	627.7	610.0	592.2	585.1
65°	570.9	560.2	542.5	526.4	517.5
67.5°	499.8	490.8	474.9	462.5	455.3
70°	434.0	426.8	410.7	398.3	391.3
72.5°	366.4	359.3	350.4	337.9	332.6
75°	298.7	295.3	286.2	275.7	279.2
77.5°	238.3	231.2	227.5	222.3	217.0
80°	177.9	176.0	172.5	167.2	163.6
82.5°	121.0	121.0	119.2	112.1	112.1
85°	72.8	71.1	69.4	63.9	62.3
87.5°	32.1	28.5	24.9	19.6	17.7
90°	0.6	7.0	11.6	14.6	15.6
92.5°	14.6	12.2	13.9	15.1	15.6
95°	37.7	18.5	22.6	25.6	25.0
97.5°	67.9	20.4	29.5	31.4	31.9
100°	102.7	23.2	33.1	37.7	38.9
102.5°	141.0	139.9	34.2	40.6	42.4
105°	176.4	193.8	35.4	41.7	44.1
107.5°	217.6	232.1	36.6	42.9	45.3
110°	257.1	269.3	101.6	43.6	45.9

TEST NUMBER: P913415

CATALOG NUMBER: DFN2DIP-HX2F0-060D030US927-FLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	294.3	304.7	294.8	44.7	46.4
115°	333.7	343.6	358.1	89.4	47.6
117.5°	368.0	379.5	389.4	306.4	154.4
120°	406.2	414.9	425.4	432.4	354.0
122.5°	438.7	448.1	459.7	463.1	463.7
125°	471.8	479.3	490.4	494.5	496.2
127.5°	502.0	510.1	518.9	524.7	525.2
130°	530.4	539.8	546.1	552.5	552.0
132.5°	559.4	567.0	573.4	578.6	578.1
135°	583.8	593.2	598.3	604.2	603.0
137.5°	609.3	616.3	622.2	628.0	626.2
140°	634.3	639.0	645.3	650.5	647.7
142.5°	655.3	659.3	666.9	671.5	668.6
145°	677.3	676.7	686.6	690.6	687.7
147.5°	696.4	694.7	704.6	707.4	705.1
150°	715.0	711.0	720.3	723.7	720.8
152.5°	730.6	726.0	734.7	738.2	734.2
155°	745.8	740.6	747.5	751.0	746.4
157.5°	758.0	753.4	758.6	762.6	758.0
160°	768.4	764.9	768.4	771.9	767.8
162.5°	777.7	774.2	777.1	781.2	775.9
165°	785.8	782.4	784.1	788.1	784.1
167.5°	792.2	788.7	790.4	794.6	789.3
170°	797.4	793.9	795.1	799.2	793.9
172.5°	800.9	797.4	798.6	802.6	797.4
175°	803.7	799.7	800.9	804.9	799.2
177.5°	804.9	800.9	801.5	805.6	800.3
180°	802.1	802.1	802.1	802.1	802.1

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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	13.66	14.70	14.46	15.52	16.53	13.24	14.27	14.04	15.10	16.11
	3H	15.31	16.24	16.12	17.07	18.11	14.85	15.78	15.66	16.61	17.65
	4H	15.89	16.77	16.72	17.61	18.66	15.43	16.31	16.26	17.15	18.20
	6H	16.28	17.09	17.12	17.93	19.00	15.82	16.63	16.66	17.48	18.54
	8H	16.38	17.15	17.23	18.02	19.08	15.92	16.69	16.77	17.56	18.62
	12H	16.42	17.16	17.28	18.02	19.11	15.96	16.70	16.82	17.56	18.65
4H	2H	14.13	15.01	14.97	15.85	16.90	13.80	14.67	14.63	15.51	16.56
	3H	15.99	16.72	16.83	17.59	18.66	15.60	16.34	16.45	17.21	18.28
	4H	16.69	17.36	17.55	18.23	19.32	16.29	16.96	17.15	17.83	18.93
	6H	17.19	17.77	18.06	18.66	19.76	16.79	17.37	17.67	18.27	19.36
	8H	17.33	17.87	18.21	18.76	19.87	16.93	17.47	17.81	18.36	19.47
	12H	17.40	17.89	18.30	18.80	19.91	17.00	17.48	17.89	18.39	19.51
8H	4H	16.89	17.43	17.76	18.32	19.43	16.54	17.08	17.41	17.96	19.07
	6H	17.50	17.94	18.40	18.87	19.98	17.15	17.59	18.05	18.52	19.63
	8H	17.70	18.10	18.62	19.02	20.15	17.35	17.74	18.26	18.67	19.79
	12H	17.83	18.18	18.74	19.09	20.27	17.46	17.81	18.38	18.72	19.90
12H	4H	16.88	17.37	17.78	18.27	19.39	16.54	17.02	17.43	17.93	19.05
	6H	17.52	17.92	18.44	18.84	19.97	17.18	17.58	18.10	18.50	19.63
	8H	17.75	18.10	18.67	19.02	20.20	17.41	17.76	18.33	18.67	19.85