

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: P918958

Luminaire Tested: DFN2DIP-HX3F0-060D030US935-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P918958
REPORT IS A COMBINATION OF REPORTS P899207 AND P896089
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX3F0-060D030US935-FLLFL
Description: 3 foot, Hexagon Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

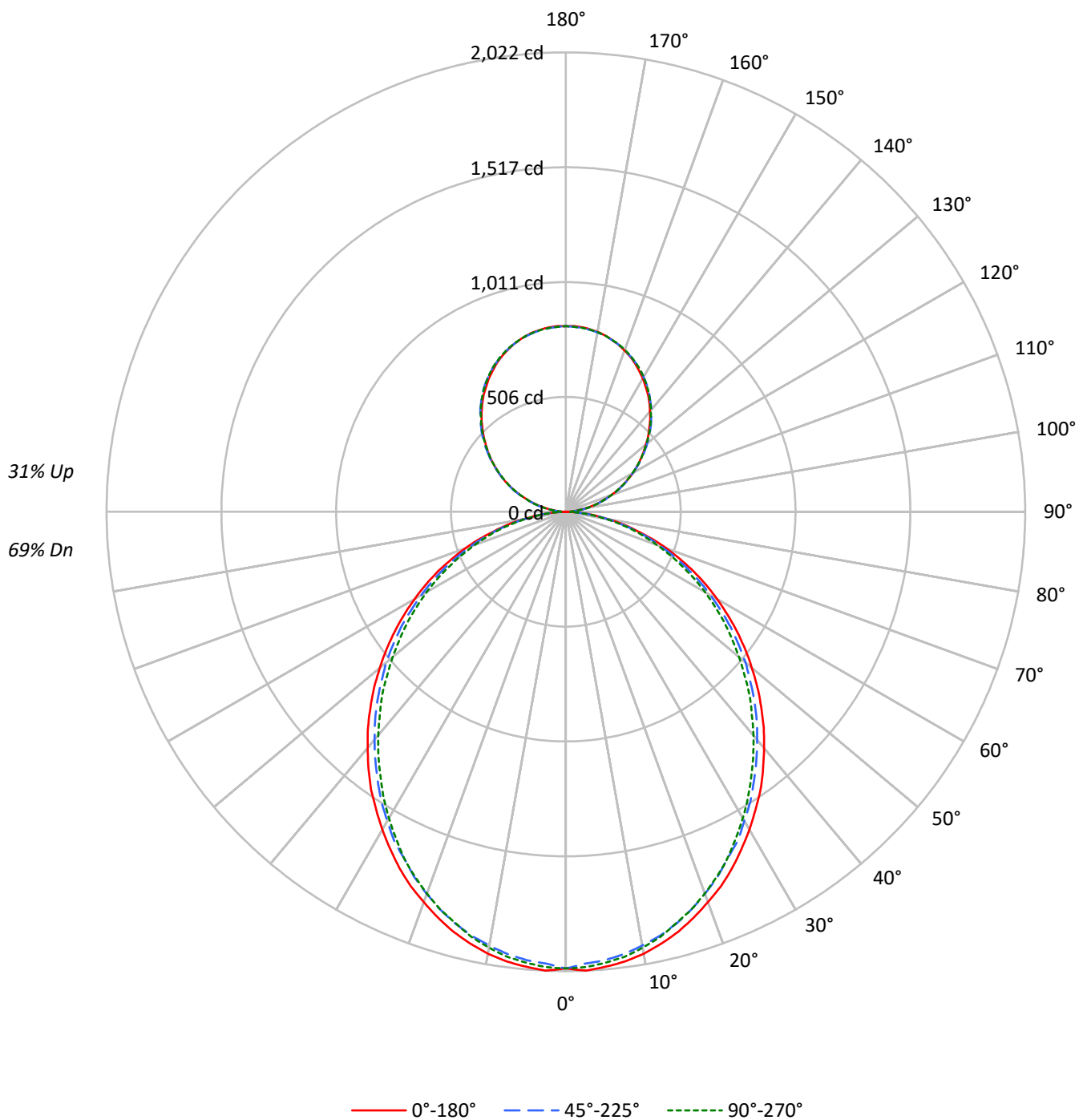
Lumens per Lamp: N/A
Luminaire Lumens: 7400.2 lumens
Efficiency: N/A
Efficacy: 93.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.84' x L: 3.28' x H: 0.1')
CIE Type: Semi-Direct

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

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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	112	112	112	112	106	106	106	106	94	94	94	83	83	83	74	74	74
1	102	98	94	90	96	92	89	86	83	80	77	74	71	70	65	64	62
2	93	85	79	74	88	81	75	70	72	68	64	65	61	58	57	55	52
3	85	75	67	61	80	71	64	59	64	58	54	57	53	49	51	48	45
4	78	67	58	52	73	63	56	50	57	51	46	51	46	42	46	42	39
5	71	59	51	45	67	56	49	43	51	45	40	46	41	37	41	37	34
6	66	53	45	39	62	51	43	38	46	40	35	41	36	32	37	33	30
7	61	48	40	34	58	46	39	33	42	36	31	38	33	29	34	30	26
8	57	44	36	31	54	42	35	30	38	32	28	35	29	26	31	27	24
9	53	40	33	27	50	39	31	26	35	29	25	32	27	23	29	25	21
10	50	37	30	25	47	36	29	24	32	27	22	30	25	21	27	23	20

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

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	189.2	2.6
10°-20°	532.3	7.2
20°-30°	782.3	10.6
30°-40°	908.6	12.3
40°-50°	907.5	12.3
50°-60°	791.3	10.7
60°-70°	584.9	7.9
70°-80°	330.9	4.5
80°-90°	89.7	1.2
90°-100°	50.6	0.7
100°-110°	160.6	2.2
110°-120°	274.9	3.7
120°-130°	361.5	4.9
130°-140°	405.7	5.5
140°-150°	397.9	5.4
150°-160°	333.8	4.5
160°-170°	221.3	3.0
170°-180°	77.4	1.0
0°-30°	1503.8	20.3
0°-40°	2412.4	32.6
0°-60°	4111.1	55.6
0°-90°	5116.6	69.1
90°-120°	486.0	6.6
90°-150°	1651.1	22.3
90°-180°	2284.0	30.9
0°-180°	7400.2	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	9	24	23	23	7
95°	36	43	44	44	43	40
105°	148	150	152	153	153	156
115°	276	280	278	278	276	273
125°	401	407	405	403	402	358
135°	519	526	528	527	525	401
145°	630	635	639	640	637	394
155°	720	722	724	728	726	332
165°	784	783	783	788	784	221
175°	816	814	812	817	813	77
180°	817	817	817	817	817	

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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°	0.8	8.9	24.1	22.6	23.4
92.5°	15.2	20.7	21.4	22.1	22.1
95°	36.0	42.9	44.1	44.1	42.9
97.5°	59.8	66.2	69.0	69.0	69.0
100°	87.4	93.1	95.1	95.1	94.4
102.5°	116.5	120.7	123.4	124.2	123.4
105°	148.3	150.2	151.7	152.9	152.9
107.5°	179.8	182.7	182.7	183.2	179.8
110°	210.3	214.3	214.3	214.3	212.3

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	243.3	247.5	246.8	244.8	243.3
115°	275.9	279.7	278.5	277.8	275.9
117.5°	308.1	313.5	310.0	308.1	306.1
120°	340.6	346.0	340.6	340.6	338.4
122.5°	370.1	377.0	373.6	371.6	370.1
125°	401.2	407.3	405.4	403.1	402.4
127.5°	431.4	439.1	436.4	433.4	431.4
130°	459.8	468.6	467.4	466.0	463.2
132.5°	491.5	498.4	498.9	495.5	493.5
135°	518.9	526.5	528.0	527.3	525.3
137.5°	549.4	555.6	556.8	556.4	553.4
140°	576.3	582.5	585.9	585.9	583.2
142.5°	603.9	610.0	612.0	612.8	610.0
145°	630.0	634.9	638.9	639.5	636.9
147.5°	653.4	659.5	662.5	663.7	661.0
150°	677.5	681.7	684.4	686.6	684.4
152.5°	699.0	703.1	706.5	709.3	706.5
155°	720.4	722.3	724.5	728.0	725.8
157.5°	738.8	740.3	741.6	746.5	743.0
160°	755.4	756.8	757.6	761.7	758.8
162.5°	770.6	770.6	771.4	776.0	772.6
165°	783.7	782.9	782.9	787.8	784.4
167.5°	795.5	793.2	793.2	798.1	794.7
170°	804.3	802.4	801.7	806.6	802.4
172.5°	810.5	808.6	807.8	812.7	808.6
175°	815.5	813.5	812.0	816.9	812.7
177.5°	818.1	816.1	814.7	818.9	814.7
180°	816.9	816.9	816.9	816.9	816.9

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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	11.77	12.83	12.54	13.63	14.60	11.34	12.40	12.11	13.20	14.17
	3H	13.44	14.39	14.22	15.20	16.20	12.97	13.92	13.75	14.73	15.73
	4H	14.03	14.93	14.83	15.74	16.75	13.56	14.46	14.36	15.27	16.28
	6H	14.43	15.26	15.25	16.09	17.11	13.96	14.79	14.78	15.62	16.64
	8H	14.54	15.33	15.36	16.17	17.20	14.07	14.86	14.90	15.70	16.73
	12H	14.59	15.35	15.42	16.18	17.23	14.12	14.87	14.95	15.71	16.76
4H	2H	12.25	13.15	13.06	13.97	14.98	11.91	12.81	12.72	13.62	14.63
	3H	14.13	14.88	14.95	15.73	16.75	13.74	14.49	14.56	15.34	16.36
	4H	14.84	15.53	15.68	16.38	17.43	14.44	15.13	15.27	15.97	17.03
	6H	15.36	15.96	16.21	16.83	17.88	14.96	15.55	15.81	16.42	17.48
	8H	15.51	16.07	16.37	16.93	18.00	15.10	15.66	15.96	16.53	17.60
	12H	15.59	16.09	16.46	16.98	18.05	15.17	15.67	16.05	16.56	17.64
8H	4H	15.05	15.61	15.91	16.47	17.54	14.69	15.25	15.55	16.12	17.19
	6H	15.68	16.14	16.56	17.05	18.12	15.32	15.78	16.20	16.69	17.76
	8H	15.90	16.31	16.79	17.21	18.30	15.53	15.94	16.43	16.85	17.93
	12H	16.04	16.40	16.93	17.29	18.43	15.66	16.02	16.55	16.91	18.05
12H	4H	15.05	15.55	15.92	16.43	17.51	14.70	15.20	15.57	16.08	17.16
	6H	15.71	16.12	16.60	17.02	18.11	15.36	15.77	16.26	16.67	17.76
	8H	15.96	16.32	16.85	17.21	18.35	15.60	15.96	16.50	16.86	18.00