

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: P924258

Luminaire Tested: DFN2DIP-HX2F0-020D060US950-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P924258
REPORT IS A COMBINATION OF REPORTS P899191 AND P896039
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX2F0-020D060US950-FLLFLL
Description: 2 foot, Hexagon Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

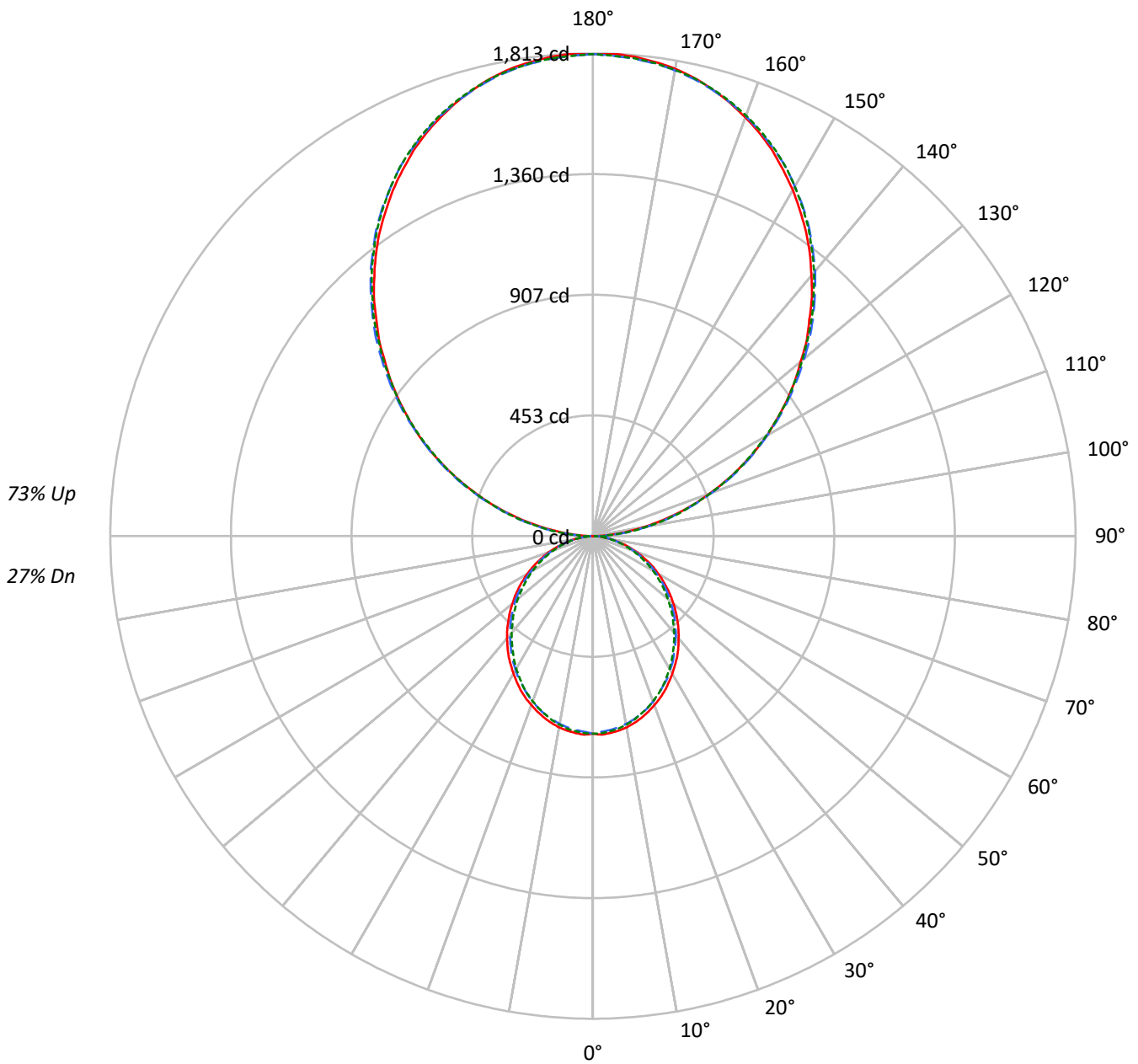
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6954.7 lumens
Efficiency: N/A
Efficacy: 109.4 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): 63.6
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9968
Total Harmonic Distortion (THDi): 0.064
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



— 0°-180° - - 45°-225° - - - 90°-270°



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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				20				20	
RC	80				70				50				30				10				0	
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0	
RCR																						
0	102	102	102	102	91	91	91	91	71	71	71	52	52	52	35	35	35	27				27
1	93	88	85	81	83	79	76	73	62	60	58	46	44	43	31	30	30	23				23
2	84	77	71	66	75	69	64	60	54	51	48	40	38	36	27	26	25	19				19
3	77	68	61	55	68	61	55	50	48	44	40	35	33	30	24	23	21	16				16
4	70	60	52	47	62	54	47	42	42	38	34	32	29	26	22	20	18	14				14
5	64	53	45	40	57	48	41	36	38	33	29	28	25	22	19	17	16	12				12
6	59	48	40	34	53	43	36	31	34	29	25	25	22	20	18	16	14	11				11
7	55	43	35	30	49	39	32	27	31	26	22	23	20	17	16	14	12	9				9
8	51	39	31	26	45	35	28	24	28	23	20	21	18	15	15	13	11	8				8
9	47	35	28	23	42	32	26	21	25	21	17	19	16	14	14	11	10	8				8
10	44	32	25	21	39	29	23	19	23	19	16	18	15	12	13	10	9	7				7

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1749	1749	1749
5°	1749	1721	1733
10°	1732	1693	1707
15°	1704	1661	1667
20°	1667	1618	1626
25°	1630	1568	1579
30°	1584	1521	1521
35°	1540	1466	1460
40°	1487	1410	1401
45°	1434	1354	1341
50°	1376	1295	1272
55°	1314	1227	1207
60°	1245	1147	1133
65°	1169	1063	1046
70°	1072	961	951
75°	939	838	859
80°	778	683	693
85°	527	429	429

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°
 Vertical Angle: 90°
 Luminance: 2428 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	69.9	1.0
10°-20°	196.6	2.8
20°-30°	288.9	4.2
30°-40°	335.6	4.8
40°-50°	335.2	4.8
50°-60°	292.2	4.2
60°-70°	216.0	3.1
70°-80°	122.2	1.8
80°-90°	37.4	0.5
90°-100°	112.0	1.6
100°-110°	355.9	5.1
110°-120°	609.1	8.8
120°-130°	801.1	11.5
130°-140°	899.2	12.9
140°-150°	881.7	12.7
150°-160°	739.6	10.6
160°-170°	490.5	7.1
170°-180°	171.4	2.5
0°-30°	555.4	8.0
0°-40°	891.0	12.8
0°-60°	1518.4	21.8
0°-90°	1894.1	27.2
90°-120°	1077.0	15.5
90°-150°	3659.0	52.6
90°-180°	5061.0	72.8
0°-180°	6954.7	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	742	742	742	742	742	
5°	742	740	732	737	736	70
15°	707	702	693	696	692	199
25°	640	634	622	623	622	294
35°	552	545	533	529	525	345
45°	449	444	433	426	423	347
55°	340	336	327	318	315	304
65°	229	225	218	211	208	227
75°	120	119	115	111	112	128
85°	29	28	28	26	25	33
90°	2	20	54	50	52	7
95°	80	95	98	98	95	89
105°	329	333	336	339	339	347
115°	611	620	617	616	611	605
125°	889	903	898	893	892	794
135°	1150	1167	1170	1168	1164	889
145°	1396	1407	1416	1417	1411	872
155°	1596	1601	1606	1613	1608	735
165°	1737	1735	1735	1746	1738	490
175°	1807	1803	1799	1810	1801	172
180°	1810	1810	1810	1810	1810	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	742.4	742.4	742.4	742.4	742.4
2.5°	746.7	743.2	735.2	742.4	741.1
5°	742.4	739.6	731.7	737.4	736.0
7.5°	737.4	733.1	725.3	731.1	729.6
10°	729.6	724.7	716.1	721.7	719.6
12.5°	718.8	714.6	706.1	709.6	708.2
15°	706.7	702.5	693.2	696.0	692.5
17.5°	691.7	687.5	678.2	681.7	678.2
20°	675.3	671.0	661.0	663.2	660.4
22.5°	658.9	652.5	643.2	643.2	641.8
25°	639.7	633.9	621.8	623.2	621.8
27.5°	618.2	613.2	604.0	601.9	598.3
30°	596.8	591.1	580.4	578.3	575.4
32.5°	573.9	569.7	558.3	554.0	551.1
35°	551.9	544.7	533.3	529.0	525.4
37.5°	526.9	520.4	509.0	504.0	500.4
40°	501.1	495.4	484.0	477.7	474.7
42.5°	476.1	470.4	459.1	451.9	447.6
45°	449.0	444.1	433.3	425.5	422.6
47.5°	422.6	417.7	406.2	398.3	394.1
50°	394.8	391.2	381.2	371.2	367.7
52.5°	367.7	362.6	353.4	345.5	340.6
55°	339.8	335.5	326.9	318.4	314.8
57.5°	312.0	308.4	299.1	290.6	287.6
60°	284.1	281.3	271.3	263.4	261.3
62.5°	257.0	252.0	244.9	237.7	234.9
65°	229.2	224.9	217.8	211.3	207.8
67.5°	200.6	197.0	190.6	185.6	182.8
70°	174.2	171.3	164.9	159.9	157.1
72.5°	147.1	144.2	140.6	135.7	133.6
75°	119.9	118.6	114.9	110.7	112.1
77.5°	95.7	92.8	91.3	89.2	87.1
80°	71.5	70.7	69.3	67.1	65.6
82.5°	48.6	48.6	47.9	45.0	45.0
85°	29.2	28.5	27.9	25.7	25.0
87.5°	12.9	11.4	10.0	7.9	7.2
90°	1.6	19.7	53.5	50.2	51.8
92.5°	33.9	45.9	47.5	49.1	49.1
95°	79.7	94.9	97.7	97.7	94.9
97.5°	132.6	146.8	152.8	152.8	152.8
100°	193.8	206.3	210.6	210.6	209.0
102.5°	258.2	267.4	273.4	275.0	273.4
105°	328.6	332.9	336.2	339.0	339.0
107.5°	398.4	405.0	405.0	406.0	398.4
110°	466.1	474.8	474.8	474.8	470.4



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	539.2	548.5	546.8	542.4	539.2
115°	611.2	620.0	617.2	615.6	611.2
117.5°	682.8	694.8	687.1	682.8	678.4
120°	754.8	766.8	754.8	754.8	749.8
122.5°	820.2	835.5	827.9	823.6	820.2
125°	889.0	902.7	898.3	893.4	891.8
127.5°	956.2	973.1	967.1	960.6	956.2
130°	1019.0	1038.6	1035.9	1032.6	1026.6
132.5°	1089.4	1104.6	1105.7	1098.1	1093.7
135°	1150.0	1166.8	1170.1	1168.5	1164.1
137.5°	1217.6	1231.2	1234.0	1232.9	1226.4
140°	1277.1	1290.8	1298.4	1298.4	1292.4
142.5°	1338.2	1351.8	1356.2	1357.8	1351.8
145°	1396.1	1407.0	1415.7	1417.4	1411.3
147.5°	1447.9	1461.5	1468.1	1470.8	1464.8
150°	1501.4	1510.7	1516.7	1521.5	1516.7
152.5°	1548.8	1558.2	1565.8	1571.8	1565.8
155°	1596.3	1600.7	1605.6	1613.3	1608.3
157.5°	1637.3	1640.6	1643.3	1654.2	1646.6
160°	1673.9	1677.1	1678.8	1688.0	1681.5
162.5°	1707.7	1707.7	1709.3	1719.7	1712.0
165°	1736.6	1734.9	1734.9	1745.9	1738.3
167.5°	1762.8	1757.9	1757.9	1768.8	1761.2
170°	1782.5	1778.1	1776.4	1787.3	1778.1
172.5°	1796.1	1791.7	1790.1	1801.0	1791.7
175°	1807.0	1802.7	1799.3	1810.3	1801.0
177.5°	1813.0	1808.7	1805.3	1814.6	1805.3
180°	1810.3	1810.3	1810.3	1810.3	1810.3



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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	6.47	7.16	7.60	8.28	9.84	6.05	6.73	7.18	7.86	9.42
	3H	8.09	8.71	9.23	9.84	11.41	7.63	8.25	8.77	9.38	10.96
	4H	8.65	9.24	9.80	10.37	11.95	8.19	8.78	9.34	9.91	11.49
	6H	9.02	9.56	10.18	10.70	12.29	8.56	9.10	9.72	10.24	11.83
	8H	9.11	9.63	10.27	10.78	12.36	8.66	9.17	9.81	10.32	11.90
	12H	9.15	9.63	10.31	10.78	12.39	8.68	9.17	9.85	10.31	11.92
4H	2H	6.90	7.48	8.05	8.61	10.20	6.56	7.15	7.72	8.28	9.86
	3H	8.72	9.21	9.88	10.36	11.96	8.34	8.82	9.50	9.98	11.58
	4H	9.41	9.86	10.57	11.00	12.62	9.01	9.46	10.18	10.61	12.22
	6H	9.89	10.27	11.06	11.44	13.05	9.49	9.88	10.66	11.05	12.65
	8H	10.02	10.38	11.19	11.54	13.16	9.62	9.98	10.79	11.14	12.77
	12H	10.07	10.40	11.26	11.57	13.20	9.67	10.00	10.85	11.17	12.79
8H	4H	9.58	9.94	10.74	11.10	12.72	9.23	9.59	10.39	10.75	12.37
	6H	10.17	10.47	11.36	11.67	13.29	9.82	10.12	11.01	11.32	12.94
	8H	10.38	10.63	11.57	11.81	13.45	10.02	10.28	11.21	11.46	13.10
	12H	10.48	10.71	11.68	11.89	13.56	10.11	10.34	11.31	11.52	13.19
12H	4H	9.55	9.88	10.74	11.05	12.68	9.21	9.54	10.39	10.71	12.33
	6H	10.20	10.45	11.39	11.63	13.27	9.85	10.11	11.05	11.29	12.93
	8H	10.41	10.64	11.61	11.82	13.49	10.07	10.29	11.26	11.47	13.14