

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: P905164

Luminaire Tested: DFN2DIP-HX2F0-020D060US835-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P905164
REPORT IS A COMBINATION OF REPORTS P899192 AND P896039
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX2F0-020D060US835-RLLFLL
Description: 2 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

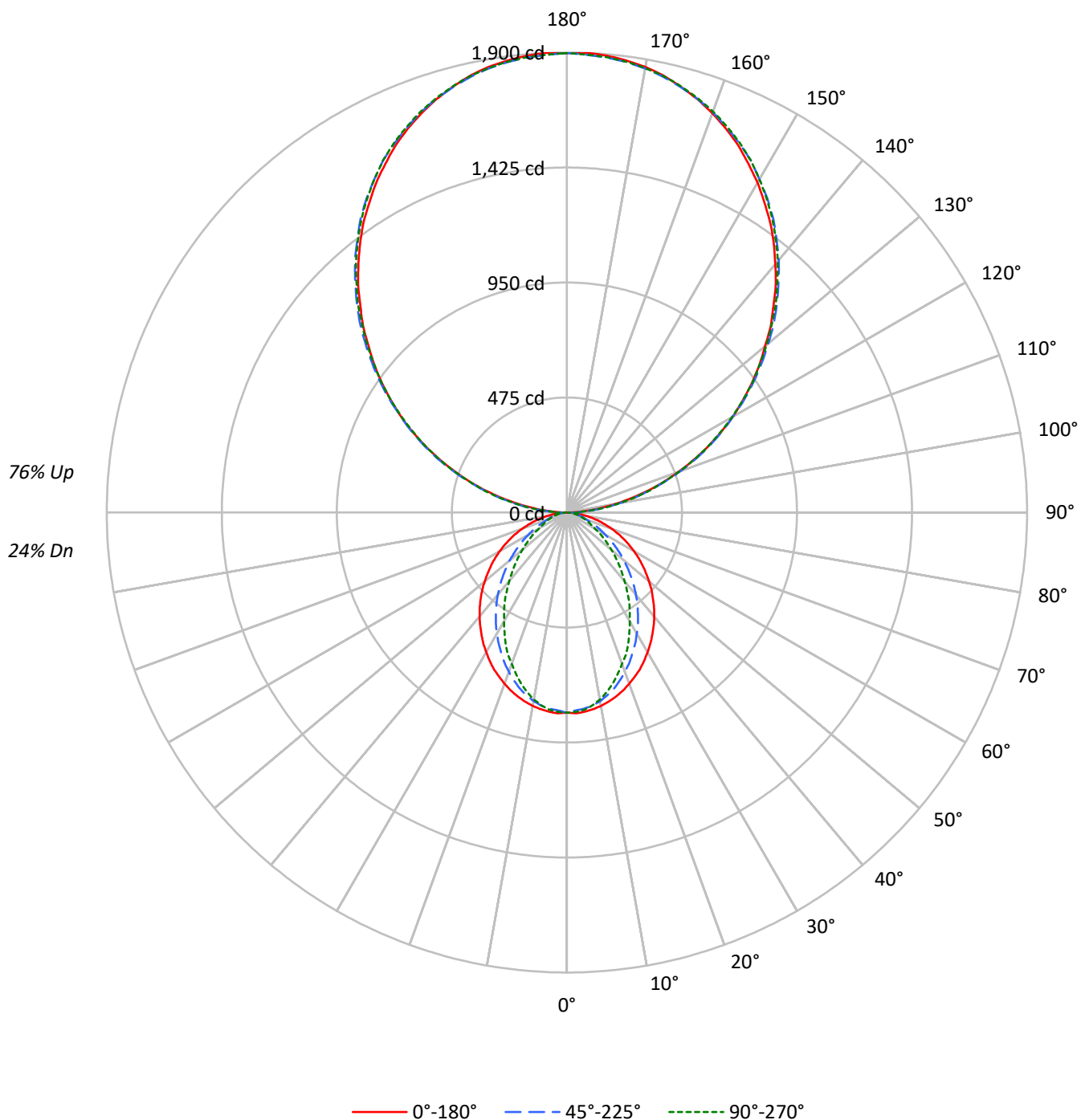
Lumens per Lamp: N/A
Luminaire Lumens: 7010.0 lumens
Efficiency: N/A
Efficacy: 110.2 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 1.99' x L: 2.3' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 63.6
Input Voltage (V):
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



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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	101	101	101	101		90	90	90	90		69	69	69		50	50	50		33	33	33
1	92	88	85	81		82	79	76	73		61	59	57		44	43	42		29	28	28
2	84	77	71	67		75	69	64	60		53	50	47		39	37	35		26	25	24
3	77	68	61	56		68	61	55	50		47	43	40		35	32	30		23	22	20
4	70	60	53	47		62	54	48	43		42	38	34		31	28	26		21	19	18
5	64	54	46	40		57	48	42	37		38	33	29		28	25	22		19	17	16
6	59	48	40	35		53	43	37	32		34	29	26		25	22	20		17	15	14
7	55	43	36	30		49	39	32	28		31	26	23		23	20	17		16	14	12
8	51	39	32	27		45	35	29	24		28	23	20		21	18	16		14	12	11
9	47	36	29	24		42	32	26	22		25	21	18		19	16	14		13	11	10
10	44	33	26	21		39	29	23	19		23	19	16		18	15	13		12	10	9

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1948	1948	1948
5°	1948	1912	1925
10°	1925	1870	1859
15°	1896	1803	1759
20°	1857	1714	1637
25°	1818	1615	1520
30°	1767	1513	1372
35°	1716	1405	1243
40°	1665	1292	1095
45°	1605	1169	961
50°	1543	1045	831
55°	1478	912	705
60°	1403	775	577
65°	1316	635	516
70°	1210	505	462
75°	1078	436	413
80°	887	354	347
85°	579	218	244

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 2545 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	77.5	1.1
10°-20°	212.7	3.0
20°-30°	298.6	4.3
30°-40°	325.5	4.6
40°-50°	299.1	4.3
50°-60°	234.9	3.4
60°-70°	152.9	2.2
70°-80°	78.7	1.1
80°-90°	25.5	0.4
90°-100°	117.4	1.7
100°-110°	373.1	5.3
110°-120°	638.5	9.1
120°-130°	839.7	12.0
130°-140°	942.5	13.4
140°-150°	924.2	13.2
150°-160°	775.3	11.1
160°-170°	514.2	7.3
170°-180°	179.7	2.6
0°-30°	588.7	8.4
0°-40°	914.2	13.0
0°-60°	1448.3	20.7
0°-90°	1705.4	24.3
90°-120°	1129.0	16.1
90°-150°	3835.4	54.7
90°-180°	5305.0	75.7
0°-180°	7010.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	827	827	827	827	827	
5°	827	823	813	820	818	78
15°	786	778	752	738	731	222
25°	714	690	640	610	598	328
35°	615	577	511	464	447	385
45°	503	452	374	321	303	388
55°	382	324	243	198	184	342
65°	258	198	130	105	102	256
75°	138	85	60	55	54	146
85°	32	16	14	14	14	37
90°	2	21	56	53	54	7
95°	84	100	102	102	100	93
105°	344	349	352	355	355	363
115°	641	650	647	645	641	634
125°	932	946	942	936	935	833
135°	1205	1223	1226	1225	1220	932
145°	1463	1475	1484	1486	1479	914
155°	1673	1678	1683	1691	1686	770
165°	1820	1819	1819	1830	1822	514
175°	1894	1890	1886	1898	1888	180
180°	1898	1898	1898	1898	1898	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	826.6	826.6	826.6	826.6	826.6
2.5°	830.3	826.6	818.3	825.9	824.4
5°	826.6	822.9	813.1	819.9	817.6
7.5°	819.9	815.4	804.9	807.9	804.1
10°	810.9	805.6	790.7	788.4	784.0
12.5°	799.7	792.9	772.7	768.3	760.0
15°	786.2	777.9	752.5	738.3	730.9
17.5°	770.5	758.5	727.1	710.6	698.7
20°	752.5	737.5	700.2	681.5	665.0
22.5°	733.1	715.9	672.5	647.1	635.9
25°	713.7	689.7	640.3	609.7	598.4
27.5°	690.5	665.0	610.4	575.2	558.0
30°	665.8	637.3	577.5	539.4	519.1
32.5°	641.8	607.4	546.1	501.2	482.5
35°	614.9	576.8	511.0	463.8	447.3
37.5°	588.7	547.5	478.0	426.4	407.7
40°	561.0	516.2	443.6	390.5	371.0
42.5°	532.6	484.8	409.2	353.8	335.2
45°	502.7	452.5	374.1	320.9	302.9
47.5°	474.3	421.2	340.4	287.2	270.8
50°	442.9	389.8	307.5	255.8	240.2
52.5°	412.1	356.0	276.0	226.7	212.5
55°	382.2	323.9	243.1	198.3	184.0
57.5°	351.6	291.7	214.0	172.1	160.1
60°	320.2	260.3	183.3	145.2	133.2
62.5°	289.5	229.7	157.1	121.2	115.2
65°	258.1	197.5	130.2	104.8	102.5
67.5°	228.2	167.5	104.8	92.0	89.8
70°	196.7	138.4	86.7	79.3	76.3
72.5°	166.8	111.4	72.5	66.6	65.1
75°	137.6	85.2	59.8	54.6	53.9
77.5°	108.5	60.6	47.1	44.1	42.6
80°	81.5	43.4	35.9	32.9	32.9
82.5°	56.8	29.2	24.7	23.2	23.2
85°	32.1	16.4	14.2	14.2	14.2
87.5°	12.0	6.0	6.0	5.2	5.2
90°	1.7	20.6	56.1	52.6	54.3
92.5°	35.5	48.1	49.8	51.5	51.5
95°	83.5	99.5	102.4	102.4	99.5
97.5°	139.0	153.9	160.2	160.2	160.2
100°	203.1	216.2	220.8	220.8	219.1
102.5°	270.6	280.3	286.6	288.3	286.6
105°	344.4	349.0	352.4	355.3	355.3
107.5°	417.6	424.5	424.5	425.6	417.6
110°	488.6	497.7	497.7	497.7	493.1

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	565.2	574.9	573.2	568.6	565.2
115°	640.7	649.9	647.0	645.3	640.7
117.5°	715.7	728.3	720.2	715.7	711.1
120°	791.2	803.8	791.2	791.2	786.0
122.5°	859.8	875.8	867.8	863.3	859.8
125°	931.9	946.2	941.6	936.5	934.8
127.5°	1002.3	1020.0	1013.7	1006.9	1002.3
130°	1068.1	1088.7	1085.8	1082.4	1076.1
132.5°	1141.9	1157.9	1159.0	1151.0	1146.4
135°	1205.4	1223.1	1226.5	1224.8	1220.2
137.5°	1276.3	1290.6	1293.5	1292.3	1285.5
140°	1338.7	1353.0	1361.0	1361.0	1354.7
142.5°	1402.7	1417.0	1421.6	1423.3	1417.0
145°	1463.4	1474.8	1484.0	1485.7	1479.4
147.5°	1517.7	1532.0	1538.9	1541.7	1535.4
150°	1573.8	1583.5	1589.8	1594.9	1589.8
152.5°	1623.5	1633.3	1641.3	1647.6	1641.3
155°	1673.3	1677.9	1683.0	1691.1	1685.9
157.5°	1716.2	1719.7	1722.5	1734.0	1726.0
160°	1754.6	1758.0	1759.7	1769.4	1762.6
162.5°	1790.0	1790.0	1791.7	1802.6	1794.6
165°	1820.3	1818.6	1818.6	1830.1	1822.1
167.5°	1847.8	1842.7	1842.7	1854.1	1846.1
170°	1868.4	1863.8	1862.1	1873.5	1863.8
172.5°	1882.7	1878.1	1876.4	1887.8	1878.1
175°	1894.1	1889.6	1886.1	1897.6	1887.8
177.5°	1900.4	1895.9	1892.4	1902.1	1892.4
180°	1897.6	1897.6	1897.6	1897.6	1897.6

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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	6.24	6.90	7.40	8.04	9.63	2.22	2.88	3.38	4.02	5.62
	3H	7.88	8.47	9.04	9.61	11.23	3.38	3.97	4.55	5.12	6.73
	4H	8.46	9.02	9.63	10.17	11.78	3.81	4.37	4.98	5.52	7.14
	6H	8.85	9.37	10.03	10.52	12.15	4.11	4.62	5.29	5.77	7.40
	8H	8.97	9.45	10.14	10.62	12.24	4.19	4.68	5.37	5.84	7.46
	12H	9.01	9.47	10.19	10.63	12.27	4.22	4.68	5.40	5.84	7.48
4H	2H	6.23	6.79	7.41	7.94	9.56	2.78	3.34	3.96	4.49	6.11
	3H	8.02	8.48	9.20	9.65	11.28	4.10	4.56	5.28	5.74	7.37
	4H	8.68	9.11	9.87	10.27	11.92	4.63	5.05	5.81	6.21	7.86
	6H	9.17	9.53	10.35	10.71	12.35	5.02	5.38	6.20	6.57	8.20
	8H	9.32	9.66	10.51	10.84	12.49	5.13	5.47	6.32	6.65	8.30
	12H	9.40	9.71	10.60	10.89	12.55	5.18	5.49	6.38	6.67	8.33
8H	4H	8.63	8.97	9.82	10.15	11.80	4.88	5.22	6.06	6.39	8.05
	6H	9.17	9.45	10.37	10.67	12.32	5.37	5.65	6.57	6.86	8.51
	8H	9.37	9.61	10.58	10.80	12.48	5.54	5.79	6.75	6.98	8.65
	12H	9.48	9.69	10.69	10.89	12.59	5.64	5.85	6.85	7.05	8.75
12H	4H	8.58	8.89	9.78	10.07	11.73	4.87	5.18	6.07	6.37	8.02
	6H	9.14	9.38	10.35	10.58	12.25	5.41	5.65	6.62	6.85	8.52
	8H	9.33	9.55	10.55	10.74	12.44	5.59	5.81	6.81	7.00	8.70

END OF REPORT