

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: P905162

Luminaire Tested: DFN2DIP-HX2F0-020D060US835-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P905162
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-HX2F0-020D060US835-FLLFLL
Description: 2 foot, Hexagon Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

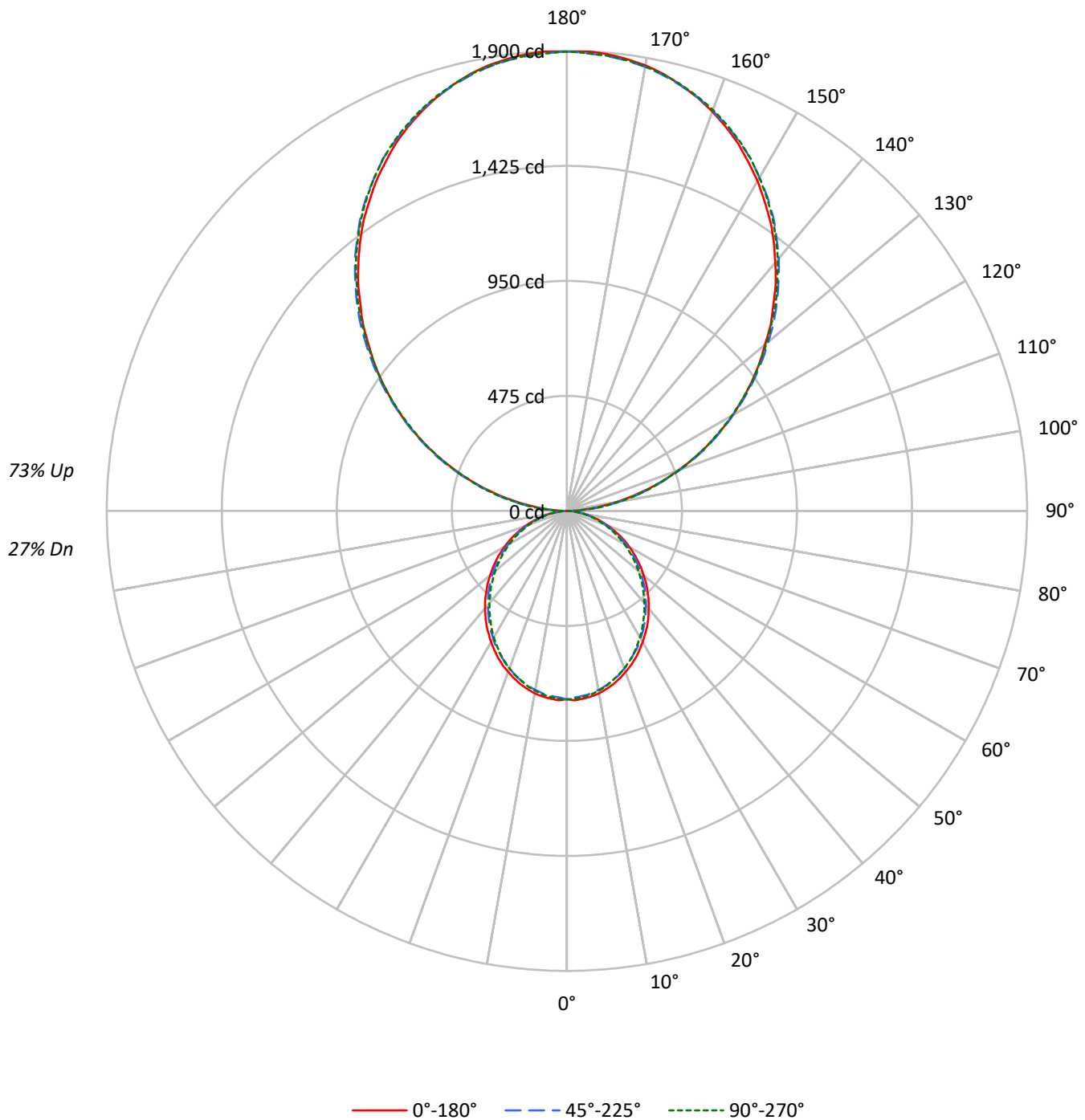
Lumens per Lamp: N/A
Luminaire Lumens: 7290.0 lumens
Efficiency: N/A
Efficacy: 114.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 1.99' x L: 2.3' x H: 0.1')
CIE Type: Semi-Indirect

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



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CATALOG NUMBER: DFN2DIP-HX2F0-020D060US835-FLLFL

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

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1834	1834	1834
5°	1834	1804	1817
10°	1816	1775	1789
15°	1786	1741	1747
20°	1747	1696	1704
25°	1708	1644	1656
30°	1660	1594	1595
35°	1615	1536	1530
40°	1559	1478	1469
45°	1503	1419	1405
50°	1442	1357	1333
55°	1378	1286	1265
60°	1305	1202	1187
65°	1225	1114	1096
70°	1124	1007	997
75°	984	879	901
80°	815	716	726
85°	552	449	450

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°	73.2	1.0
10°-20°	206.1	2.8
20°-30°	302.9	4.2
30°-40°	351.8	4.8
40°-50°	351.3	4.8
50°-60°	306.3	4.2
60°-70°	226.5	3.1
70°-80°	128.1	1.8
80°-90°	39.2	0.5
90°-100°	117.4	1.6
100°-110°	373.1	5.1
110°-120°	638.5	8.8
120°-130°	839.7	11.5
130°-140°	942.5	12.9
140°-150°	924.2	12.7
150°-160°	775.3	10.6
160°-170°	514.2	7.1
170°-180°	179.7	2.5
0°-30°	582.2	8.0
0°-40°	934.0	12.8
0°-60°	1591.6	21.8
0°-90°	1985.4	27.2
90°-120°	1129.0	15.5
90°-150°	3835.4	52.6
90°-180°	5305.0	72.8
0°-180°	7290.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	778	778	778	778	778	
5°	778	775	767	773	772	74
15°	741	736	727	730	726	209
25°	670	664	652	653	652	309
35°	578	571	559	554	551	361
45°	471	466	454	446	443	363
55°	356	352	343	334	330	318
65°	240	236	228	222	218	238
75°	126	124	120	116	118	134
85°	31	30	29	27	26	34
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°	778.2	778.2	778.2	778.2	778.2
2.5°	782.7	779.0	770.7	778.2	776.8
5°	778.2	775.3	767.0	773.0	771.5
7.5°	773.0	768.5	760.3	766.3	764.8
10°	764.8	759.6	750.6	756.5	754.3
12.5°	753.5	749.1	740.1	743.8	742.3
15°	740.8	736.4	726.6	729.6	725.9
17.5°	725.1	720.7	710.9	714.6	710.9
20°	707.9	703.4	692.9	695.2	692.2
22.5°	690.7	684.0	674.2	674.2	672.7
25°	670.5	664.5	651.8	653.2	651.8
27.5°	648.0	642.8	633.1	630.9	627.1
30°	625.6	619.6	608.4	606.2	603.1
32.5°	601.6	597.2	585.2	580.7	577.7
35°	578.5	571.0	559.0	554.5	550.7
37.5°	552.3	545.5	533.5	528.3	524.5
40°	525.3	519.3	507.3	500.7	497.6
42.5°	499.1	493.1	481.2	473.7	469.2
45°	470.7	465.5	454.2	446.0	443.0
47.5°	443.0	437.8	425.8	417.5	413.1
50°	413.8	410.1	399.6	389.1	385.4
52.5°	385.4	380.1	370.4	362.2	357.0
55°	356.2	351.7	342.7	333.8	330.0
57.5°	327.0	323.3	313.5	304.6	301.5
60°	297.8	294.9	284.4	276.1	273.9
62.5°	269.4	264.1	256.7	249.2	246.2
65°	240.2	235.7	228.3	221.5	217.8
67.5°	210.3	206.5	199.8	194.6	191.6
70°	182.6	179.6	172.8	167.6	164.7
72.5°	154.2	151.2	147.4	142.2	140.0
75°	125.7	124.3	120.4	116.0	117.5
77.5°	100.3	97.3	95.7	93.5	91.3
80°	74.9	74.1	72.6	70.3	68.8
82.5°	50.9	50.9	50.2	47.2	47.2
85°	30.6	29.9	29.2	26.9	26.2
87.5°	13.5	12.0	10.5	8.3	7.5
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	6.63	7.32	7.76	8.44	10.01	6.21	6.90	7.34	8.02	9.58
	3H	8.25	8.87	9.39	10.00	11.58	7.79	8.41	8.93	9.54	11.12
	4H	8.82	9.40	9.96	10.53	12.12	8.36	8.94	9.51	10.07	11.66
	6H	9.19	9.73	10.34	10.86	12.46	8.73	9.27	9.88	10.40	12.00
	8H	9.28	9.79	10.44	10.94	12.53	8.82	9.33	9.98	10.48	12.07
	12H	9.31	9.80	10.47	10.94	12.55	8.85	9.33	10.01	10.48	12.09
4H	2H	7.06	7.65	8.22	8.78	10.36	6.72	7.31	7.88	8.44	10.02
	3H	8.88	9.37	10.04	10.53	12.12	8.50	8.99	9.66	10.14	11.74
	4H	9.57	10.02	10.73	11.16	12.78	9.18	9.63	10.34	10.77	12.39
	6H	10.05	10.44	11.22	11.61	13.21	9.66	10.04	10.82	11.21	12.81
	8H	10.18	10.54	11.35	11.70	13.33	9.79	10.15	10.96	11.31	12.93
	12H	10.24	10.56	11.42	11.73	13.36	9.83	10.16	11.02	11.33	12.96
8H	4H	9.74	10.10	10.91	11.26	12.88	9.39	9.75	10.56	10.91	12.53
	6H	10.34	10.63	11.52	11.83	13.45	9.98	10.28	11.17	11.48	13.10
	8H	10.54	10.80	11.73	11.98	13.62	10.18	10.44	11.37	11.62	13.26
	12H	10.65	10.87	11.84	12.05	13.72	10.28	10.50	11.47	11.68	13.35
12H	4H	9.72	10.04	10.90	11.21	12.84	9.37	9.70	10.56	10.87	12.50
	6H	10.36	10.62	11.55	11.80	13.44	10.02	10.28	11.21	11.46	13.10
	8H	10.57	10.80	11.77	11.98	13.65	10.23	10.46	11.43	11.63	13.30