

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: P907893

Luminaire Tested: DFN2DIP-HX2F0-020D060US840-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P907893
REPORT IS A COMBINATION OF REPORTS P900712 AND P897595
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX2F0-020D060US840-RLONL
Description: 2 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

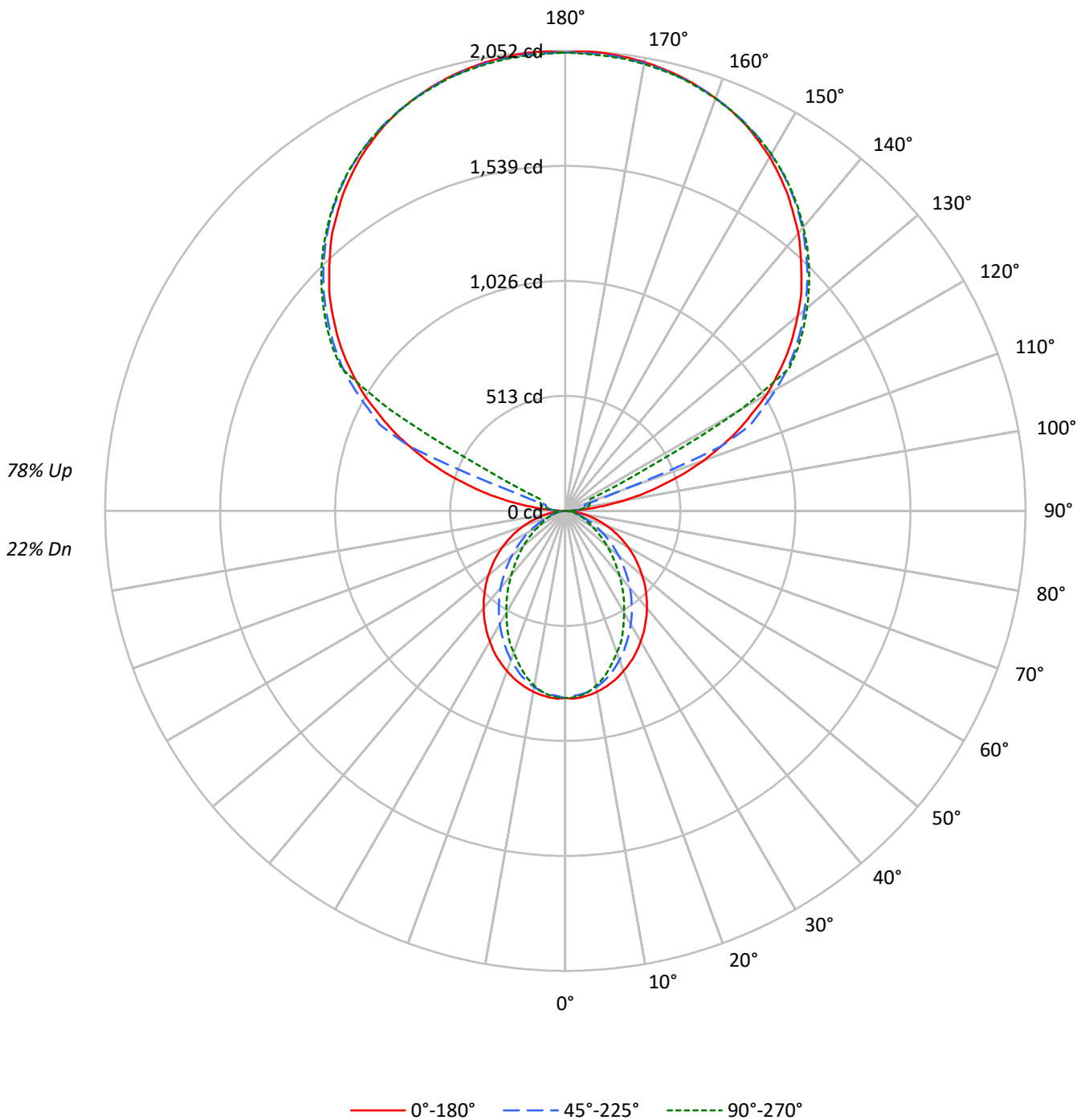
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 7715.4 lumens
Efficiency: N/A
Efficacy: 121.3 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				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	101	101	101	101	89	89	89	89	68	68	68	49	49	49	31	31	31	31	31	31	22
1	92	88	84	81	81	78	75	72	60	58	56	43	42	41	27	27	26	26	26	26	19
2	84	77	71	66	74	68	64	60	52	49	47	38	36	34	24	23	22	22	22	22	16
3	76	68	61	55	68	60	55	50	46	43	39	34	31	29	22	20	19	19	19	19	14
4	70	60	52	47	62	53	47	42	41	37	34	30	27	25	20	18	17	17	17	17	12
5	64	53	46	40	57	48	41	36	37	32	29	27	24	22	18	16	15	15	15	15	11
6	59	48	40	35	52	43	36	31	33	29	25	24	21	19	16	14	13	13	13	13	10
7	54	43	35	30	48	38	32	27	30	25	22	22	19	17	15	13	12	12	12	12	9
8	50	39	32	27	45	35	29	24	27	23	20	20	17	15	14	12	10	10	10	10	8
9	47	35	28	23	42	32	26	21	25	20	17	19	16	13	12	11	9	9	9	9	7
10	44	32	25	21	39	29	23	19	23	19	16	17	14	12	12	10	9	9	9	9	6

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1967	1967	1967
5°	1967	1931	1944
10°	1944	1888	1877
15°	1914	1821	1776
20°	1876	1731	1654
25°	1836	1631	1535
30°	1784	1528	1386
35°	1733	1418	1255
40°	1681	1305	1106
45°	1621	1181	970
50°	1559	1055	839
55°	1493	921	712
60°	1417	782	583
65°	1329	642	521
70°	1222	510	467
75°	1088	441	417
80°	896	358	351
85°	585	220	246

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°
 Vertical Angle: 90°
 Luminance: 1870 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	78.2	1.0
10°-20°	214.8	2.8
20°-30°	301.5	3.9
30°-40°	328.7	4.3
40°-50°	302.1	3.9
50°-60°	237.3	3.1
60°-70°	154.4	2.0
70°-80°	79.5	1.0
80°-90°	23.9	0.3
90°-100°	67.4	0.9
100°-110°	251.4	3.3
110°-120°	666.7	8.6
120°-130°	1105.7	14.3
130°-140°	1174.5	15.2
140°-150°	1091.6	14.1
150°-160°	877.6	11.4
160°-170°	565.5	7.3
170°-180°	194.6	2.5
0°-30°	594.5	7.7
0°-40°	923.2	12.0
0°-60°	1462.6	19.0
0°-90°	1720.4	22.3
90°-120°	985.5	12.8
90°-150°	4357.2	56.5
90°-180°	5995.0	77.7
0°-180°	7715.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	835	835	835	835	835	
5°	835	831	821	828	826	79
15°	794	786	760	746	738	224
25°	721	696	647	616	604	331
35°	621	582	516	468	452	389
45°	508	457	378	324	306	392
55°	386	327	246	200	186	345
65°	261	199	132	106	104	258
75°	139	86	60	55	54	147
85°	32	17	14	14	14	37
90°	1	18	30	37	40	7
95°	96	47	58	65	64	114
105°	450	494	90	106	112	481
115°	851	876	913	228	121	838
125°	1203	1222	1250	1261	1265	1073
135°	1489	1512	1526	1540	1537	1150
145°	1727	1725	1750	1761	1753	1080
155°	1901	1888	1906	1915	1903	876
165°	2004	1995	1999	2009	1999	566
175°	2049	2039	2042	2052	2038	195
180°	2045	2045	2045	2045	2045	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	834.8	834.8	834.8	834.8	834.8
2.5°	838.5	834.8	826.4	834.0	832.5
5°	834.8	831.0	821.1	828.0	825.7
7.5°	828.0	823.4	812.8	815.9	812.0
10°	818.9	813.5	798.5	796.2	791.7
12.5°	807.6	800.7	780.3	775.9	767.5
15°	794.0	785.6	759.9	745.6	738.1
17.5°	778.1	766.0	734.3	717.6	705.6
20°	759.9	744.8	707.1	688.2	671.6
22.5°	740.3	723.0	679.1	653.5	642.2
25°	720.7	696.5	646.6	615.7	604.3
27.5°	697.3	671.6	616.4	580.9	563.5
30°	672.4	643.6	583.2	544.7	524.2
32.5°	648.1	613.4	551.5	506.1	487.3
35°	621.0	582.5	516.0	468.4	451.7
37.5°	594.5	552.9	482.7	430.6	411.7
40°	566.5	521.3	448.0	394.4	374.7
42.5°	537.9	489.6	413.2	357.3	338.5
45°	507.7	457.0	377.8	324.1	305.9
47.5°	479.0	425.4	343.8	290.0	273.5
50°	447.3	393.6	310.5	258.3	242.6
52.5°	416.2	359.5	278.7	228.9	214.6
55°	386.0	327.1	245.5	200.3	185.8
57.5°	355.1	294.6	216.1	173.8	161.7
60°	323.4	262.9	185.1	146.6	134.5
62.5°	292.4	232.0	158.6	122.4	116.3
65°	260.6	199.4	131.5	105.8	103.5
67.5°	230.5	169.2	105.8	92.9	90.7
70°	198.6	139.8	87.6	80.1	77.1
72.5°	168.4	112.5	73.2	67.3	65.7
75°	139.0	86.0	60.4	55.1	54.4
77.5°	109.6	61.2	47.6	44.5	43.0
80°	82.3	43.8	36.3	33.2	33.2
82.5°	57.4	29.5	24.9	23.4	23.4
85°	32.4	16.6	14.3	14.3	14.3
87.5°	12.1	6.1	6.1	5.3	5.3
90°	1.4	17.8	29.5	37.1	39.9
92.5°	37.1	31.1	35.4	38.5	39.9
95°	96.1	47.3	57.7	65.2	63.6
97.5°	173.1	51.8	75.3	80.0	81.4
100°	262.0	59.2	84.3	96.1	99.1
102.5°	359.5	356.7	87.4	103.5	108.1
105°	449.8	494.2	90.3	106.4	112.5
107.5°	554.9	591.8	93.3	109.5	115.4
110°	655.6	686.5	259.0	111.1	116.8



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	750.2	776.8	751.6	113.8	118.5
115°	850.8	876.0	913.0	227.9	121.4
117.5°	938.1	967.7	992.9	781.2	393.5
120°	1035.8	1057.9	1084.7	1102.4	902.6
122.5°	1118.5	1142.3	1171.9	1180.7	1182.4
125°	1203.0	1222.2	1250.3	1260.7	1265.1
127.5°	1279.9	1300.6	1322.9	1337.7	1339.1
130°	1352.4	1376.1	1392.3	1408.7	1407.2
132.5°	1426.4	1445.7	1461.9	1475.2	1473.8
135°	1488.6	1512.4	1525.5	1540.4	1537.4
137.5°	1553.6	1571.4	1586.3	1601.0	1596.7
140°	1617.2	1629.2	1645.4	1658.7	1651.3
142.5°	1670.6	1681.0	1700.2	1711.9	1704.6
145°	1726.9	1725.3	1750.4	1760.8	1753.4
147.5°	1775.5	1771.1	1796.2	1803.6	1797.9
150°	1823.0	1812.6	1836.3	1845.1	1837.8
152.5°	1862.9	1851.1	1873.2	1882.2	1871.8
155°	1901.4	1888.1	1905.9	1914.7	1902.9
157.5°	1932.5	1920.7	1934.0	1944.4	1932.5
160°	1959.1	1950.2	1959.1	1967.9	1957.6
162.5°	1982.7	1973.9	1981.3	1991.7	1978.3
165°	2003.5	1994.7	1999.0	2009.4	1999.0
167.5°	2019.7	2010.8	2015.4	2025.8	2012.4
170°	2033.2	2024.2	2027.2	2037.5	2024.2
172.5°	2041.9	2033.2	2036.1	2046.5	2033.2
175°	2049.3	2038.9	2041.9	2052.2	2037.5
177.5°	2052.2	2041.9	2043.5	2053.9	2040.5
180°	2044.9	2044.9	2044.9	2044.9	2044.9



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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	5.94	6.58	7.10	7.73	9.35	1.92	2.56	3.09	3.71	5.33
	3H	7.57	8.15	8.75	9.31	10.94	3.08	3.65	4.25	4.81	6.45
	4H	8.16	8.70	9.34	9.86	11.50	3.51	4.05	4.69	5.21	6.85
	6H	8.55	9.05	9.74	10.21	11.86	3.80	4.31	4.99	5.47	7.12
	8H	8.66	9.14	9.85	10.31	11.95	3.88	4.36	5.07	5.53	7.17
	12H	8.70	9.16	9.90	10.33	11.99	3.91	4.36	5.10	5.53	7.19
4H	2H	5.93	6.47	7.12	7.63	9.27	2.48	3.03	3.67	4.18	5.82
	3H	7.71	8.17	8.90	9.35	11.00	3.79	4.25	4.99	5.43	7.08
	4H	8.37	8.80	9.57	9.97	11.64	4.32	4.74	5.51	5.91	7.58
	6H	8.86	9.22	10.06	10.41	12.07	4.71	5.07	5.91	6.26	7.92
	8H	9.01	9.35	10.21	10.53	12.21	4.82	5.16	6.02	6.34	8.02
	12H	9.09	9.39	10.30	10.59	12.26	4.87	5.17	6.08	6.37	8.05
8H	4H	8.32	8.66	9.52	9.84	11.52	4.57	4.90	5.77	6.09	7.76
	6H	8.86	9.13	10.07	10.36	12.03	5.05	5.33	6.27	6.56	8.23
	8H	9.06	9.30	10.28	10.50	12.19	5.23	5.47	6.45	6.67	8.37
	12H	9.17	9.38	10.39	10.58	12.30	5.33	5.54	6.55	6.74	8.46
12H	4H	8.27	8.57	9.48	9.77	11.45	4.56	4.86	5.77	6.06	7.74
	6H	8.83	9.07	10.05	10.27	11.97	5.10	5.34	6.32	6.54	8.23
	8H	9.02	9.24	10.25	10.44	12.16	5.28	5.49	6.51	6.70	8.42