

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: P904919

Luminaire Tested: DFN2DIP-4P3F0-020D060US835-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P904919
REPORT IS A COMBINATION OF REPORTS P900589 AND P897473
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P3F0-020D060US835-FLLONL
Description: 3 foot, 90deg - 4way Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

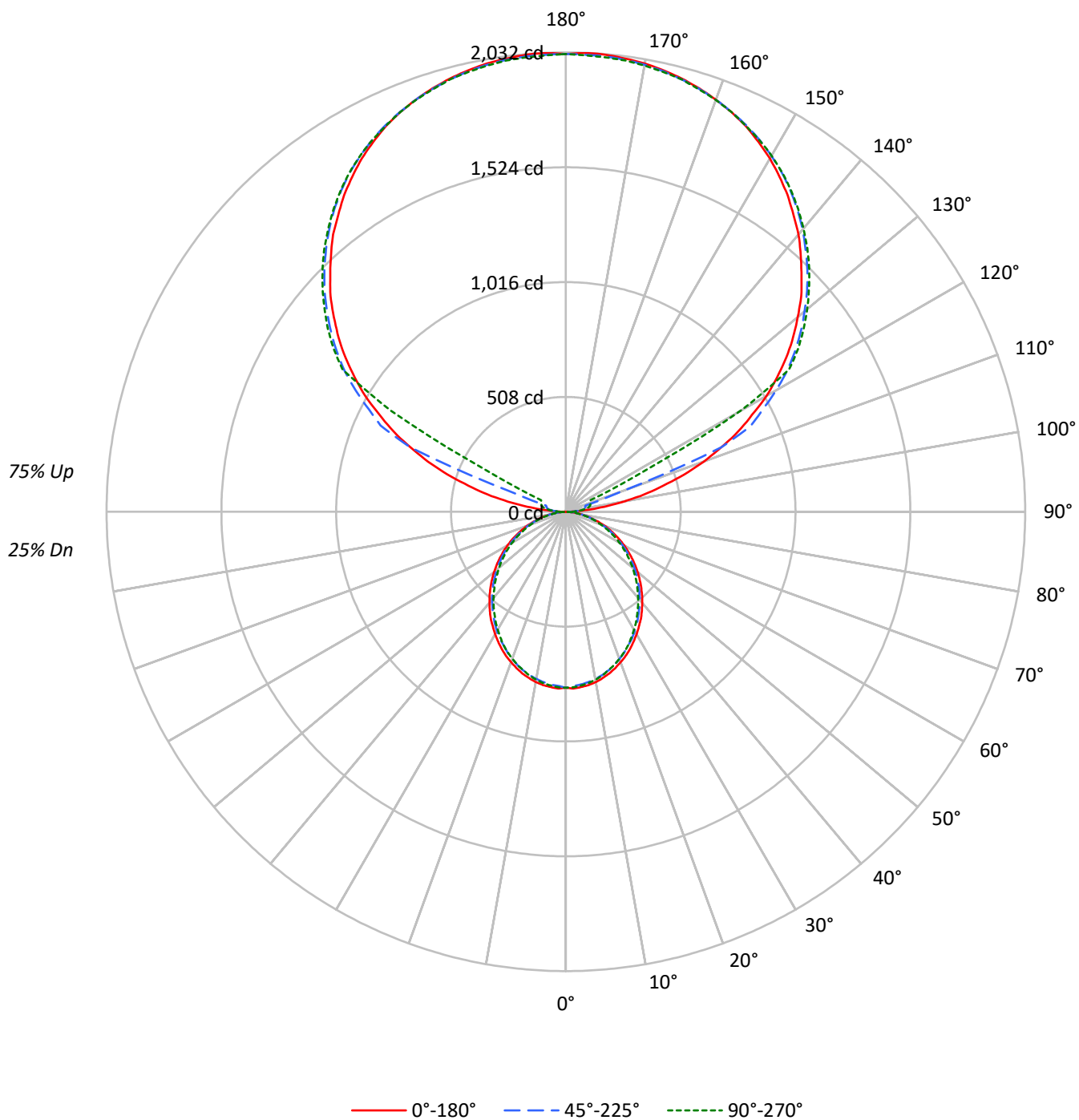
Lumens per Lamp: N/A
Luminaire Lumens: 7920.0 lumens
Efficiency: N/A
Efficacy: 126.1 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.07' x L: 3.07' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 62.8
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9951
Total Harmonic Distortion (THDi): 0.07
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	51	51	51	33	33	33
1	92	88	84	81	82	79	75	73	61	59	57	44	43	42	29	29	28
2	84	77	71	66	74	69	64	59	53	50	47	39	37	35	26	25	24
3	76	67	60	55	68	60	54	50	47	43	39	34	32	30	23	21	20
4	70	60	52	46	62	53	47	42	42	37	33	31	28	25	20	19	17
5	64	53	45	39	57	47	41	36	37	32	29	27	24	22	18	16	15
6	59	47	40	34	52	42	36	31	33	28	25	25	21	19	17	15	13
7	54	43	35	30	48	38	32	27	30	25	22	22	19	17	15	13	12
8	50	38	31	26	45	35	28	24	27	23	19	20	17	15	14	12	10
9	47	35	28	23	41	31	25	21	25	20	17	19	15	13	13	11	9
10	43	32	25	20	39	29	23	19	23	18	15	17	14	12	12	10	8

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	887	887	887
5°	888	874	880
10°	880	862	868
15°	866	847	849
20°	848	826	830
25°	830	802	807
30°	808	780	779
35°	787	753	749
40°	761	727	721
45°	735	700	691
50°	706	672	658
55°	676	639	627
60°	643	600	591
65°	605	560	549
70°	558	511	504
75°	494	452	461
80°	415	378	381
85°	292	250	250

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 1383 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	73.2	0.9
10°-20°	206.1	2.6
20°-30°	302.9	3.8
30°-40°	351.8	4.4
40°-50°	351.3	4.4
50°-60°	306.3	3.9
60°-70°	226.5	2.9
70°-80°	128.1	1.6
80°-90°	37.4	0.5
90°-100°	66.8	0.8
100°-110°	248.9	3.1
110°-120°	660.2	8.3
120°-130°	1094.9	13.8
130°-140°	1163.0	14.7
140°-150°	1080.9	13.6
150°-160°	869.0	11.0
160°-170°	560.0	7.1
170°-180°	192.7	2.4
0°-30°	582.2	7.4
0°-40°	934.0	11.8
0°-60°	1591.6	20.1
0°-90°	1983.6	25.0
90°-120°	975.8	12.3
90°-150°	4314.7	54.5
90°-180°	5936.0	74.9
0°-180°	7920.0	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°	1	18	29	37	40	7
95°	95	47	57	65	63	113
105°	445	489	89	105	111	476
115°	842	867	904	226	120	829
125°	1191	1210	1238	1248	1253	1062
135°	1474	1498	1511	1525	1522	1139
145°	1710	1708	1733	1744	1736	1069
155°	1883	1870	1887	1896	1884	868
165°	1984	1975	1980	1990	1980	560
175°	2029	2019	2022	2032	2018	193
180°	2025	2025	2025	2025	2025	

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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°	1.4	17.6	29.2	36.7	39.5
92.5°	36.7	30.8	35.1	38.1	39.5
95°	95.2	46.8	57.1	64.6	63.0
97.5°	171.4	51.3	74.6	79.2	80.6
100°	259.4	58.6	83.5	95.2	98.1
102.5°	356.0	353.2	86.5	102.5	107.0
105°	445.4	489.4	89.4	105.4	111.4
107.5°	549.5	586.0	92.4	108.4	114.3
110°	649.2	679.8	256.5	110.0	115.7

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	742.9	769.2	744.3	112.7	117.3
115°	842.5	867.4	904.1	225.7	120.2
117.5°	928.9	958.2	983.2	773.6	389.7
120°	1025.7	1047.6	1074.1	1091.6	893.8
122.5°	1107.6	1131.1	1160.5	1169.2	1170.8
125°	1191.2	1210.3	1238.1	1248.4	1252.7
127.5°	1267.4	1287.9	1310.0	1324.6	1326.0
130°	1339.2	1362.7	1378.7	1394.9	1393.5
132.5°	1412.5	1431.6	1447.6	1460.8	1459.4
135°	1474.1	1497.6	1510.6	1525.4	1522.4
137.5°	1538.4	1556.0	1570.8	1585.4	1581.1
140°	1601.4	1613.3	1629.3	1642.5	1635.2
142.5°	1654.3	1664.6	1683.6	1695.2	1687.9
145°	1710.0	1708.4	1733.3	1743.6	1736.3
147.5°	1758.2	1753.8	1778.7	1786.0	1780.3
150°	1805.2	1794.9	1818.4	1827.1	1819.8
152.5°	1844.7	1833.0	1854.9	1863.8	1853.5
155°	1882.8	1869.7	1887.3	1896.0	1884.3
157.5°	1913.6	1901.9	1915.1	1925.4	1913.6
160°	1940.0	1931.1	1940.0	1948.7	1938.5
162.5°	1963.3	1954.6	1961.9	1972.2	1959.0
165°	1983.9	1975.2	1979.5	1989.8	1979.5
167.5°	2000.0	1991.2	1995.7	2006.0	1992.7
170°	2013.3	2004.4	2007.4	2017.6	2004.4
172.5°	2022.0	2013.3	2016.2	2026.5	2013.3
175°	2029.3	2019.0	2022.0	2032.2	2017.6
177.5°	2032.2	2022.0	2023.5	2033.8	2020.6
180°	2024.9	2024.9	2024.9	2024.9	2024.9

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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	3.88	4.55	5.02	5.69	7.28	3.44	4.11	4.58	5.24	6.83
	3H	5.52	6.12	6.67	7.27	8.87	5.03	5.63	6.18	6.78	8.38
	4H	6.10	6.67	7.26	7.81	9.42	5.60	6.18	6.77	7.32	8.93
	6H	6.48	7.01	7.65	8.16	9.78	5.98	6.51	7.15	7.66	9.28
	8H	6.58	7.08	7.75	8.24	9.85	6.08	6.58	7.25	7.74	9.35
	12H	6.62	7.10	7.80	8.25	9.89	6.11	6.59	7.29	7.74	9.38
4H	2H	4.31	4.89	5.48	6.03	7.64	3.96	4.53	5.13	5.68	7.28
	3H	6.16	6.64	7.33	7.80	9.42	5.75	6.23	6.92	7.40	9.02
	4H	6.86	7.30	8.04	8.46	10.10	6.44	6.88	7.61	8.03	9.67
	6H	7.36	7.74	8.54	8.92	10.54	6.93	7.30	8.11	8.48	10.11
	8H	7.50	7.86	8.68	9.03	10.67	7.07	7.42	8.25	8.59	10.23
	12H	7.56	7.88	8.76	9.07	10.72	7.12	7.43	8.31	8.62	10.27
8H	4H	7.04	7.39	8.22	8.56	10.21	6.66	7.01	7.84	8.18	9.83
	6H	7.65	7.95	8.85	9.16	10.80	7.27	7.56	8.47	8.77	10.41
	8H	7.87	8.12	9.07	9.31	10.98	7.48	7.73	8.68	8.92	10.58
	12H	7.99	8.21	9.20	9.40	11.09	7.58	7.80	8.79	8.99	10.68
12H	4H	7.01	7.33	8.21	8.51	10.16	6.64	6.96	7.84	8.14	9.79
	6H	7.68	7.93	8.89	9.12	10.79	7.31	7.56	8.51	8.75	10.41
	8H	7.91	8.13	9.12	9.32	11.01	7.53	7.75	8.74	8.94	10.63

END OF REPORT