

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: P906847

Luminaire Tested: DFN2DIP-SQ4F0-110D060US835-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P906847
REPORT IS A COMBINATION OF REPORTS P901590 AND P898471
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ4F0-110D060US835-RLLONL
Description: 4 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

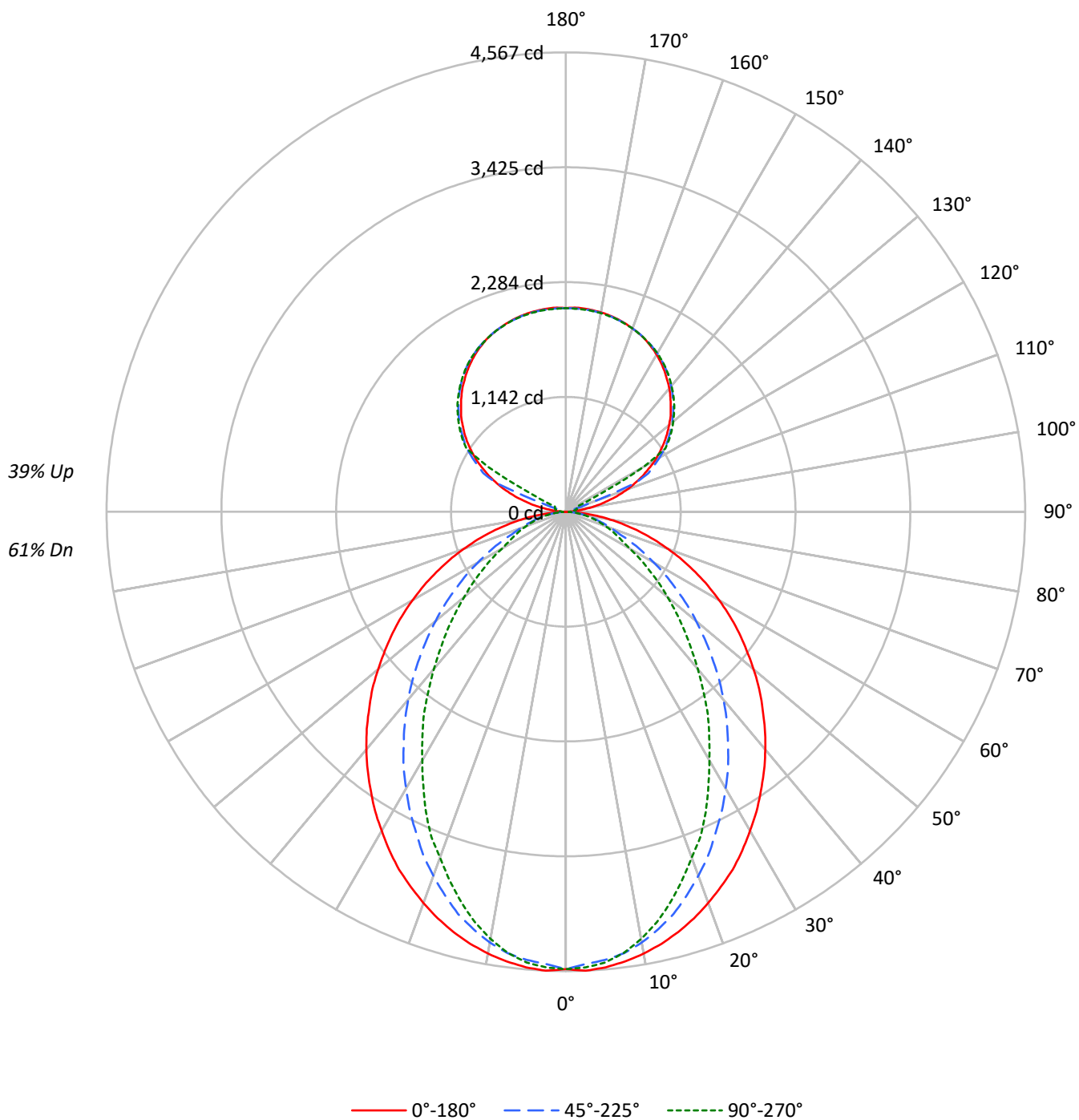
Lumens per Lamp: N/A
Luminaire Lumens: 15290.0 lumens
Efficiency: N/A
Efficacy: 101.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.92' x L: 3.92' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 150.3
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
RCR																	
0	110	110	110	110	103	103	103	103	90	90	90		77	77	77		66
1	101	97	93	90	94	91	87	85	79	77	75		69	67	66		60
2	92	85	79	74	86	80	75	70	70	66	63		61	58	56		53
3	85	75	68	63	79	71	65	60	63	58	54		55	51	48		48
4	78	67	59	54	73	63	56	51	56	51	46		49	45	42		43
5	72	60	52	46	67	57	50	44	51	45	40		45	40	37		39
6	66	54	46	41	62	51	44	39	46	40	36		41	36	32		36
7	61	49	41	36	58	47	40	35	42	36	32		37	32	29		33
8	57	45	37	32	54	43	36	31	38	33	28		34	29	26		30
9	53	41	34	29	50	39	32	28	35	30	26		32	27	24		28
10	50	38	31	26	47	36	30	25	33	27	23		29	25	21		26

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3190	3190	3190
5°	3195	3140	3160
10°	3163	3079	3058
15°	3120	2978	2900
20°	3062	2838	2706
25°	3003	2681	2518
30°	2924	2521	2280
35°	2846	2348	2070
40°	2767	2169	1830
45°	2675	1970	1612
50°	2580	1770	1399
55°	2481	1555	1195
60°	2367	1331	984
65°	2234	1103	887
70°	2074	890	804
75°	1873	786	734
80°	1582	662	640
85°	1102	445	487

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2675 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	426.1	2.8
10°-20°	1169.7	7.7
20°-30°	1642.2	10.7
30°-40°	1790.1	11.7
40°-50°	1645.3	10.8
50°-60°	1292.1	8.5
60°-70°	841.1	5.5
70°-80°	432.9	2.8
80°-90°	114.1	0.7
90°-100°	66.8	0.4
100°-110°	248.9	1.6
110°-120°	660.2	4.3
120°-130°	1094.9	7.2
130°-140°	1163.0	7.6
140°-150°	1080.9	7.1
150°-160°	869.0	5.7
160°-170°	560.0	3.7
170°-180°	192.7	1.3
0°-30°	3238.0	21.2
0°-40°	5028.1	32.9
0°-60°	7965.5	52.1
0°-90°	9353.6	61.2
90°-120°	975.8	6.4
90°-150°	4314.7	28.2
90°-180°	5936.0	38.8
0°-180°	15290.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	4546	4546	4546	4546	4546	
5°	4546	4526	4472	4509	4497	431
15°	4324	4279	4139	4061	4020	1218
25°	3925	3793	3522	3353	3291	1805
35°	3382	3172	2810	2551	2460	2117
45°	2765	2489	2057	1765	1666	2135
55°	2102	1781	1337	1090	1012	1879
65°	1420	1086	716	576	564	1407
75°	757	469	329	300	296	801
85°	177	90	78	78	78	203
90°	1	18	29	37	40	14
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°	4546.3	4546.3	4546.3	4546.3	4546.3
2.5°	4566.8	4546.3	4500.9	4542.4	4534.1
5°	4546.3	4525.8	4472.1	4509.2	4497.0
7.5°	4509.2	4484.7	4427.1	4443.3	4422.7
10°	4459.9	4431.0	4349.0	4336.3	4311.9
12.5°	4398.3	4361.2	4249.9	4225.4	4180.0
15°	4324.1	4278.7	4139.0	4060.9	4019.8
17.5°	4237.7	4171.8	3998.9	3908.5	3842.6
20°	4139.0	4056.5	3850.9	3748.3	3657.5
22.5°	4032.1	3937.3	3698.6	3558.9	3497.3
25°	3925.1	3793.3	3521.8	3353.3	3291.3
27.5°	3797.7	3657.5	3357.2	3163.8	3069.1
30°	3661.9	3505.2	3176.1	2966.5	2855.2
32.5°	3530.1	3340.6	3003.6	2756.6	2653.6
35°	3382.1	3172.1	2810.3	2551.0	2460.2
37.5°	3238.1	3011.5	2629.1	2344.9	2242.4
40°	3085.7	2839.1	2439.7	2147.6	2040.7
42.5°	2929.4	2666.2	2250.7	1946.0	1843.4
45°	2764.9	2489.0	2057.3	1764.8	1666.2
47.5°	2608.6	2316.6	1872.2	1579.7	1489.4
50°	2435.7	2143.7	1691.1	1406.9	1320.9
52.5°	2266.8	1958.2	1518.2	1246.7	1168.5
55°	2102.2	1781.4	1337.0	1090.4	1012.3
57.5°	1933.8	1604.6	1176.8	946.4	880.4
60°	1760.9	1431.8	1007.9	798.4	732.5
62.5°	1592.4	1263.3	863.9	666.6	633.8
65°	1419.5	1086.0	715.9	576.2	563.5
67.5°	1255.0	921.5	576.2	505.9	493.7
70°	1082.1	761.3	477.1	436.1	419.5
72.5°	917.5	612.9	399.0	366.2	357.9
75°	756.9	468.8	329.1	300.3	296.4
77.5°	596.7	333.1	259.3	242.7	234.4
80°	448.3	238.8	197.3	181.2	181.2
82.5°	312.5	160.6	135.8	127.5	127.5
85°	176.8	90.4	78.1	78.1	78.1
87.5°	65.9	32.7	32.7	28.8	28.8
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	12.17	13.10	13.04	13.98	15.09	8.13	9.07	9.00	9.94	11.05
	3H	13.86	14.70	14.74	15.58	16.72	9.33	10.16	10.21	11.05	12.18
	4H	14.48	15.26	15.37	16.16	17.30	9.79	10.57	10.68	11.47	12.61
	6H	14.91	15.63	15.81	16.53	17.69	10.11	10.84	11.02	11.74	12.89
	8H	15.04	15.73	15.95	16.65	17.80	10.21	10.90	11.12	11.81	12.97
	12H	15.11	15.76	16.02	16.67	17.85	10.25	10.91	11.17	11.82	13.00
4H	2H	12.20	12.99	13.10	13.88	15.03	8.74	9.53	9.64	10.42	11.57
	3H	14.05	14.70	14.95	15.63	16.78	10.10	10.76	11.01	11.68	12.84
	4H	14.75	15.34	15.66	16.26	17.44	10.66	11.25	11.57	12.17	13.36
	6H	15.27	15.78	16.20	16.73	17.91	11.08	11.59	12.01	12.54	13.72
	8H	15.45	15.93	16.38	16.87	18.07	11.21	11.69	12.15	12.63	13.83
	12H	15.55	15.98	16.51	16.94	18.14	11.28	11.71	12.24	12.67	13.87
8H	4H	14.72	15.20	15.66	16.14	17.34	10.95	11.43	11.88	12.36	13.56
	6H	15.30	15.69	16.26	16.67	17.87	11.47	11.87	12.43	12.85	14.04
	8H	15.52	15.87	16.49	16.84	18.05	11.66	12.01	12.63	12.98	14.20
	12H	15.66	15.97	16.63	16.93	18.20	11.79	12.09	12.76	13.06	14.32
12H	4H	14.68	15.11	15.63	16.07	17.27	10.96	11.39	11.91	12.34	13.55
	6H	15.27	15.62	16.24	16.59	17.81	11.52	11.87	12.49	12.84	14.06
	8H	15.50	15.81	16.47	16.77	18.03	11.74	12.05	12.71	13.01	14.27