

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: P906811

Luminaire Tested: DFN2DIP-SQ4F0-100D060US835-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P906811
REPORT IS A COMBINATION OF REPORTS P901588 AND P898471
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ4F0-100D060US835-RLLONL
Description: 4 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

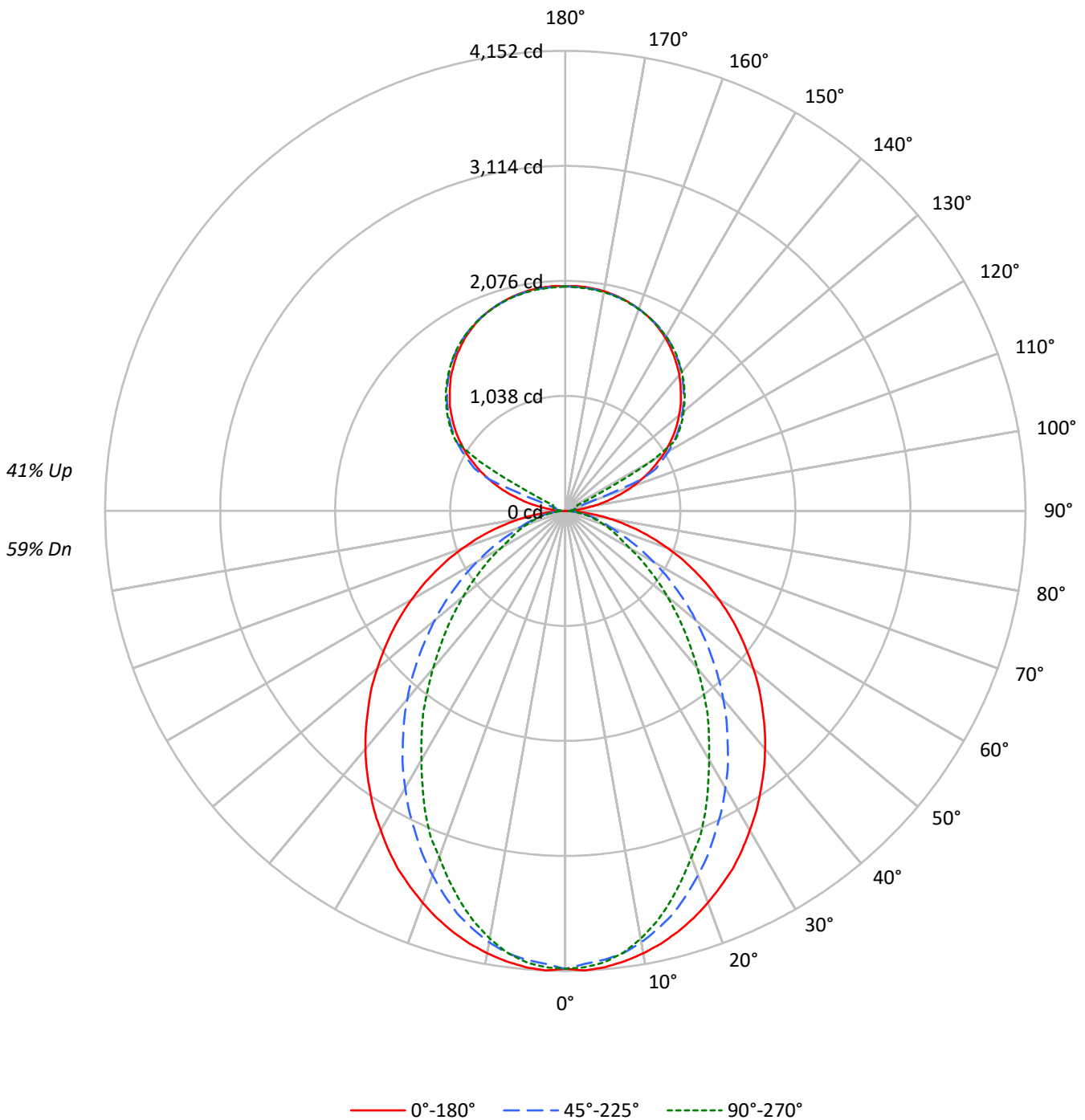
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 14440.0 lumens
Efficiency: N/A
Efficacy: 104.7 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: General Diffuse

Input Watts (W): 137.9
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		0	
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10
RCR																				
0	109	109	109	109	102	102	102	102	88	88	88	76	76	76	64	64	64	59		
1	100	96	92	89	94	90	87	84	78	76	74	68	66	64	58	57	55	51		
2	92	85	79	74	86	79	74	70	69	65	62	60	57	55	51	49	48	43		
3	84	75	68	62	78	70	64	59	62	57	53	54	50	47	46	43	41	37		
4	77	67	59	53	72	63	56	51	55	50	46	48	44	41	42	39	36	33		
5	71	60	52	46	66	56	49	44	50	44	40	44	39	36	38	34	32	29		
6	66	54	46	40	61	51	44	38	45	39	35	40	35	32	35	31	28	26		
7	61	49	41	36	57	46	39	34	41	35	31	36	32	28	32	28	25	23		
8	57	45	37	32	53	42	35	30	38	32	28	33	29	25	29	26	23	21		
9	53	41	34	29	50	39	32	27	35	29	25	31	26	23	27	23	21	19		
10	50	38	31	26	46	36	29	25	32	27	23	29	24	21	25	22	19	17		

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2900	2900	2900
5°	2905	2855	2873
10°	2876	2799	2780
15°	2836	2707	2637
20°	2784	2580	2460
25°	2730	2438	2289
30°	2658	2292	2073
35°	2587	2134	1882
40°	2516	1972	1664
45°	2432	1791	1466
50°	2346	1609	1272
55°	2256	1414	1086
60°	2151	1210	895
65°	2031	1003	806
70°	1886	809	731
75°	1703	715	667
80°	1438	602	581
85°	1002	405	442

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 2432 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	387.3	2.7
10°-20°	1063.3	7.4
20°-30°	1492.9	10.3
30°-40°	1627.4	11.3
40°-50°	1495.7	10.4
50°-60°	1174.7	8.1
60°-70°	764.6	5.3
70°-80°	393.6	2.7
80°-90°	104.0	0.7
90°-100°	66.8	0.5
100°-110°	248.9	1.7
110°-120°	660.2	4.6
120°-130°	1094.9	7.6
130°-140°	1163.0	8.1
140°-150°	1080.9	7.5
150°-160°	869.0	6.0
160°-170°	560.0	3.9
170°-180°	192.7	1.3
0°-30°	2943.6	20.4
0°-40°	4571.0	31.7
0°-60°	7241.3	50.1
0°-90°	8503.5	58.9
90°-120°	975.8	6.8
90°-150°	4314.7	29.9
90°-180°	5936.0	41.1
0°-180°	14440.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	4133	4133	4133	4133	4133	
5°	4133	4114	4066	4099	4088	392
15°	3931	3890	3763	3692	3654	1108
25°	3568	3448	3202	3048	2992	1641
35°	3075	2884	2555	2319	2236	1924
45°	2514	2263	1870	1604	1515	1941
55°	1911	1620	1216	991	920	1708
65°	1290	987	651	524	512	1279
75°	688	426	299	273	269	728
85°	161	82	71	71	71	184
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°	4133.0	4133.0	4133.0	4133.0	4133.0
2.5°	4151.6	4133.0	4091.7	4129.4	4121.9
5°	4133.0	4114.3	4065.5	4099.3	4088.1
7.5°	4099.3	4077.0	4024.6	4039.3	4020.7
10°	4054.4	4028.2	3953.6	3942.1	3919.9
12.5°	3998.5	3964.7	3863.5	3841.3	3800.0
15°	3931.0	3889.7	3762.7	3691.7	3654.4
17.5°	3852.4	3792.5	3635.4	3553.2	3493.3
20°	3762.7	3687.7	3500.8	3407.6	3325.0
22.5°	3665.5	3579.4	3362.3	3235.4	3179.4
25°	3568.3	3448.5	3201.6	3048.4	2992.1
27.5°	3452.4	3325.0	3052.0	2876.2	2790.1
30°	3329.0	3186.5	2887.3	2696.9	2595.7
32.5°	3209.2	3036.9	2730.6	2506.0	2412.3
35°	3074.6	2883.8	2554.8	2319.1	2236.5
37.5°	2943.7	2737.7	2390.1	2131.8	2038.5
40°	2805.2	2581.0	2217.9	1952.4	1855.2
42.5°	2663.1	2423.8	2046.1	1769.1	1675.8
45°	2513.5	2262.7	1870.3	1604.4	1514.7
47.5°	2371.5	2106.0	1702.0	1436.1	1354.0
50°	2214.3	1948.8	1537.3	1279.0	1200.8
52.5°	2060.7	1780.2	1380.2	1133.3	1062.3
55°	1911.1	1619.5	1215.5	991.3	920.2
57.5°	1758.0	1458.7	1069.9	860.3	800.4
60°	1600.8	1301.6	916.3	725.8	665.9
62.5°	1447.6	1148.4	785.3	606.0	576.2
65°	1290.5	987.3	650.8	523.8	512.3
67.5°	1140.9	837.7	523.8	459.9	448.8
70°	983.7	692.1	433.7	396.4	381.4
72.5°	834.1	557.1	362.7	332.9	325.4
75°	688.1	426.2	299.2	273.0	269.4
77.5°	542.5	302.8	235.7	220.6	213.1
80°	407.5	217.1	179.4	164.7	164.7
82.5°	284.1	146.0	123.4	115.9	115.9
85°	160.7	82.1	71.0	71.0	71.0
87.5°	59.9	29.8	29.8	26.2	26.2
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	11.65	12.56	12.53	13.46	14.60	7.61	8.52	8.50	9.42	10.56
	3H	13.34	14.15	14.24	15.06	16.23	8.81	9.62	9.70	10.53	11.69
	4H	13.95	14.72	14.87	15.64	16.81	9.26	10.03	10.17	10.94	12.12
	6H	14.38	15.09	15.31	16.01	17.20	9.59	10.29	10.51	11.21	12.40
	8H	14.51	15.19	15.44	16.12	17.31	9.68	10.35	10.61	11.29	12.48
	12H	14.58	15.22	15.52	16.15	17.36	9.73	10.36	10.66	11.30	12.51
4H	2H	11.68	12.45	12.60	13.36	14.54	8.22	8.99	9.14	9.90	11.08
	3H	13.52	14.16	14.45	15.10	16.29	9.58	10.21	10.50	11.16	12.35
	4H	14.22	14.80	15.16	15.74	16.96	10.13	10.71	11.07	11.65	12.87
	6H	14.74	15.24	15.69	16.21	17.42	10.55	11.05	11.50	12.02	13.23
	8H	14.92	15.39	15.87	16.35	17.58	10.68	11.15	11.64	12.11	13.34
	12H	15.02	15.44	15.99	16.42	17.65	10.75	11.17	11.72	12.15	13.38
8H	4H	14.19	14.66	15.14	15.62	16.85	10.42	10.88	11.37	11.84	13.07
	6H	14.77	15.15	15.74	16.15	17.38	10.94	11.32	11.92	12.32	13.55
	8H	14.99	15.33	15.97	16.31	17.56	11.13	11.47	12.12	12.46	13.71
	12H	15.13	15.43	16.12	16.41	17.71	11.26	11.55	12.25	12.54	13.83
12H	4H	14.15	14.57	15.12	15.54	16.78	10.43	10.85	11.40	11.82	13.06
	6H	14.74	15.08	15.73	16.07	17.32	10.99	11.33	11.98	12.32	13.57
	8H	14.97	15.27	15.96	16.25	17.55	11.21	11.50	12.20	12.49	13.78