

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: P906406

Luminaire Tested: DFN2DIP-SQ3F0-050D110US835-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P906406
REPORT IS A COMBINATION OF REPORTS P899990 AND P896733
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ3F0-050D110US835-RLLFLL
Description: 3 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

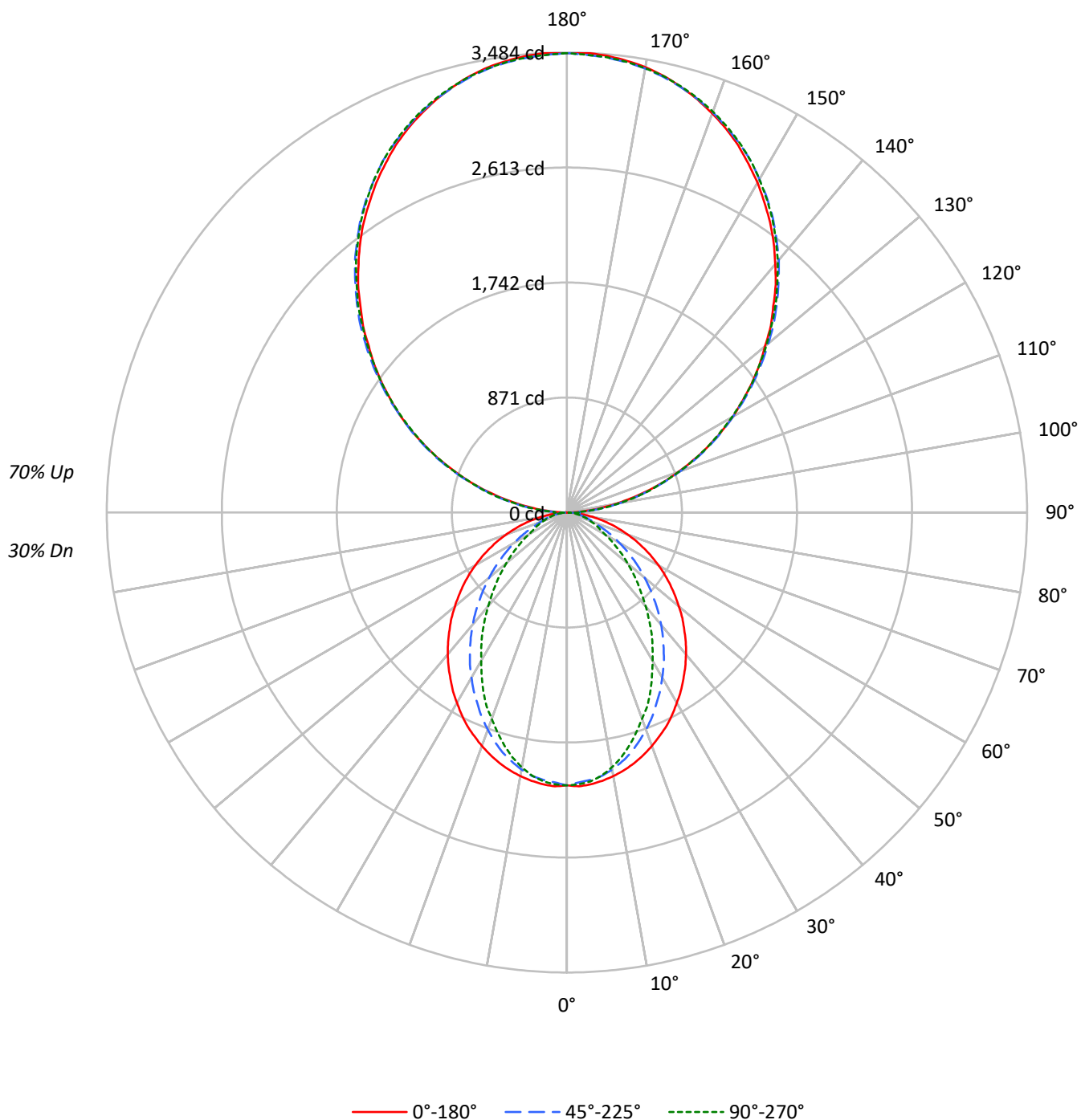
Lumens per Lamp: N/A
Luminaire Lumens: 13985.0 lumens
Efficiency: N/A
Efficacy: 109.2 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.06' x L: 3.06' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 128.1
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9789
Total Harmonic Distortion (THDi): 0.074
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	102	102	102	102	92	92	92	92	72	72	72	55	55	55	38	38	38
1	94	90	86	83	84	81	78	75	64	62	60	48	47	46	34	33	33
2	86	79	73	68	77	71	66	62	56	53	50	43	41	39	30	29	28
3	78	69	62	57	70	62	57	52	50	46	42	38	35	33	27	26	24
4	72	61	54	48	64	55	49	44	44	40	36	34	31	29	24	23	21
5	66	55	47	41	59	50	43	38	40	35	31	31	27	25	22	20	18
6	60	49	41	36	54	44	38	33	36	31	27	28	24	22	20	18	16
7	56	44	37	31	50	40	34	29	32	28	24	25	22	19	18	16	15
8	52	40	33	28	47	36	30	26	30	25	21	23	20	17	17	15	13
9	48	37	29	25	43	33	27	23	27	22	19	21	18	16	16	14	12
10	45	33	27	22	40	31	24	20	25	20	17	20	16	14	15	12	11

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2368	2368	2368
5°	2370	2329	2344
10°	2345	2281	2267
15°	2311	2205	2149
20°	2267	2099	2003
25°	2222	1981	1863
30°	2162	1861	1685
35°	2102	1731	1529
40°	2042	1597	1350
45°	1972	1448	1188
50°	1900	1299	1030
55°	1824	1139	878
60°	1736	972	722
65°	1635	803	649
70°	1512	645	586
75°	1358	565	532
80°	1135	469	458
85°	770	306	340

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 3498 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	193.7	1.4
10°-20°	531.7	3.8
20°-30°	746.5	5.3
30°-40°	813.7	5.8
40°-50°	747.9	5.3
50°-60°	587.3	4.2
60°-70°	382.3	2.7
70°-80°	196.8	1.4
80°-90°	60.1	0.4
90°-100°	215.3	1.5
100°-110°	684.0	4.9
110°-120°	1170.5	8.4
120°-130°	1539.4	11.0
130°-140°	1727.9	12.4
140°-150°	1694.4	12.1
150°-160°	1421.4	10.2
160°-170°	942.6	6.7
170°-180°	329.5	2.4
0°-30°	1471.8	10.5
0°-40°	2285.5	16.3
0°-60°	3620.7	25.9
0°-90°	4259.9	30.5
90°-120°	2069.8	14.8
90°-150°	7031.6	50.3
90°-180°	9725.0	69.5
0°-180°	13985.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2066	2066	2066	2066	2066	
5°	2066	2057	2033	2050	2044	196
15°	1966	1945	1881	1846	1827	554
25°	1784	1724	1601	1524	1496	821
35°	1537	1442	1277	1160	1118	962
45°	1257	1131	935	802	757	971
55°	956	810	608	496	460	854
65°	645	494	325	262	256	640
75°	344	213	150	136	135	364
85°	80	41	36	36	36	92
90°	3	38	103	96	100	14
95°	153	182	188	188	182	170
105°	631	640	646	651	651	666
115°	1175	1191	1186	1183	1175	1162
125°	1708	1735	1726	1717	1714	1527
135°	2210	2242	2249	2246	2237	1708
145°	2683	2704	2721	2724	2712	1676
155°	3068	3076	3086	3100	3091	1412
165°	3337	3334	3334	3355	3340	941
175°	3473	3464	3458	3479	3461	330
180°	3479	3479	3479	3479	3479	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2066.5	2066.5	2066.5	2066.5	2066.5
2.5°	2075.8	2066.5	2045.9	2064.7	2060.9
5°	2066.5	2057.2	2032.8	2049.6	2044.1
7.5°	2049.6	2038.5	2012.3	2019.7	2010.3
10°	2027.2	2014.1	1976.8	1971.1	1959.9
12.5°	1999.2	1982.4	1931.8	1920.7	1900.0
15°	1965.5	1944.9	1881.4	1845.9	1827.2
17.5°	1926.2	1896.3	1817.7	1776.6	1746.6
20°	1881.4	1843.9	1750.4	1703.8	1662.5
22.5°	1832.8	1789.7	1681.2	1617.7	1589.7
25°	1784.1	1724.2	1600.8	1524.2	1496.0
27.5°	1726.2	1662.5	1526.0	1438.1	1395.1
30°	1664.5	1593.3	1443.7	1348.4	1297.8
32.5°	1604.6	1518.5	1365.3	1253.0	1206.2
35°	1537.3	1441.9	1277.4	1159.5	1118.3
37.5°	1471.8	1368.9	1195.1	1065.9	1019.3
40°	1402.6	1290.5	1108.9	976.2	927.6
42.5°	1331.6	1211.9	1023.0	884.5	837.9
45°	1256.8	1131.4	935.1	802.2	757.3
47.5°	1185.7	1053.0	851.0	718.1	677.0
50°	1107.2	974.4	768.7	639.5	600.4
52.5°	1030.4	890.1	690.1	566.7	531.2
55°	955.6	809.7	607.7	495.6	460.1
57.5°	879.0	729.4	534.9	430.2	400.2
60°	800.4	650.8	458.1	362.9	332.9
62.5°	723.8	574.2	392.7	303.0	288.1
65°	645.2	493.7	325.4	261.9	256.2
67.5°	570.4	418.9	261.9	230.0	224.4
70°	491.9	346.0	216.9	198.2	190.7
72.5°	417.1	278.6	181.4	166.5	162.7
75°	344.1	213.1	149.6	136.5	134.7
77.5°	271.2	151.4	117.9	110.3	106.5
80°	203.8	108.5	89.7	82.3	82.3
82.5°	142.1	73.0	61.7	57.9	57.9
85°	80.4	41.1	35.5	35.5	35.5
87.5°	30.0	14.9	14.9	13.1	13.1
90°	3.1	37.8	102.8	96.5	99.6
92.5°	65.0	88.1	91.2	94.4	94.4
95°	153.1	182.5	187.7	187.7	182.5
97.5°	254.9	282.1	293.7	293.7	293.7
100°	372.3	396.4	404.8	404.8	401.7
102.5°	496.1	513.9	525.5	528.6	525.5
105°	631.4	639.8	646.1	651.3	651.3
107.5°	765.6	778.2	778.2	780.3	765.6
110°	895.7	912.5	912.5	912.5	904.1

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1036.2	1054.0	1050.9	1042.5	1036.2
115°	1174.7	1191.4	1186.2	1183.1	1174.7
117.5°	1312.1	1335.1	1320.4	1312.1	1303.7
120°	1450.5	1473.6	1450.5	1450.5	1441.1
122.5°	1576.4	1605.7	1591.0	1582.6	1576.4
125°	1708.5	1734.7	1726.3	1716.9	1713.7
127.5°	1837.5	1870.0	1858.5	1845.9	1837.5
130°	1958.1	1995.9	1990.6	1984.3	1972.8
132.5°	2093.4	2122.8	2124.9	2110.2	2101.8
135°	2209.8	2242.3	2248.6	2245.5	2237.1
137.5°	2339.9	2366.1	2371.3	2369.2	2356.7
140°	2454.2	2480.4	2495.1	2495.1	2483.6
142.5°	2571.7	2597.9	2606.3	2609.4	2597.9
145°	2682.8	2703.8	2720.6	2723.7	2712.2
147.5°	2782.5	2808.7	2821.3	2826.5	2815.0
150°	2885.3	2903.1	2914.6	2924.1	2914.6
152.5°	2976.5	2994.3	3009.0	3020.6	3009.0
155°	3067.8	3076.1	3085.6	3100.3	3090.8
157.5°	3146.4	3152.7	3157.9	3178.9	3164.2
160°	3216.7	3223.0	3226.1	3244.0	3231.4
162.5°	3281.7	3281.7	3284.9	3304.8	3290.1
165°	3337.3	3334.1	3334.1	3355.1	3340.4
167.5°	3387.6	3378.2	3378.2	3399.2	3384.5
170°	3425.4	3417.0	3413.9	3434.8	3417.0
172.5°	3451.6	3443.2	3440.1	3461.1	3443.2
175°	3472.6	3464.2	3457.9	3478.9	3461.1
177.5°	3484.1	3475.7	3469.4	3487.3	3469.4
180°	3478.9	3478.9	3478.9	3478.9	3478.9

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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	7.94	8.63	9.05	9.73	11.26	3.90	4.59	5.01	5.69	7.22
	3H	9.60	10.22	10.72	11.33	12.87	5.07	5.69	6.19	6.80	8.34
	4H	10.20	10.78	11.33	11.90	13.45	5.51	6.09	6.64	7.21	8.76
	6H	10.61	11.15	11.75	12.27	13.83	5.81	6.36	6.95	7.47	9.03
	8H	10.73	11.24	11.87	12.37	13.93	5.90	6.41	7.04	7.54	9.10
	12H	10.78	11.27	11.93	12.40	13.97	5.93	6.42	7.08	7.55	9.12
4H	2H	7.93	8.52	9.07	9.64	11.19	4.47	5.06	5.61	6.17	7.72
	3H	9.75	10.23	10.89	11.38	12.94	5.80	6.29	6.95	7.43	8.99
	4H	10.43	10.88	11.58	12.01	13.59	6.34	6.79	7.49	7.92	9.50
	6H	10.93	11.32	12.09	12.47	14.04	6.74	7.13	7.90	8.28	9.85
	8H	11.10	11.46	12.25	12.60	14.19	6.87	7.22	8.02	8.37	9.96
	12H	11.19	11.51	12.36	12.67	14.26	6.92	7.25	8.09	8.40	9.99
8H	4H	10.39	10.74	11.54	11.89	13.48	6.61	6.97	7.76	8.11	9.70
	6H	10.94	11.24	12.11	12.42	14.01	7.11	7.41	8.28	8.59	10.18
	8H	11.15	11.41	12.33	12.58	14.18	7.30	7.55	8.47	8.72	10.32
	12H	11.28	11.51	12.46	12.67	14.31	7.40	7.63	8.58	8.79	10.43
12H	4H	10.33	10.66	11.50	11.81	13.40	6.60	6.93	7.77	8.08	9.68
	6H	10.91	11.17	12.09	12.34	13.94	7.16	7.42	8.34	8.58	10.19
	8H	11.13	11.35	12.31	12.51	14.15	7.36	7.58	8.54	8.75	10.38