

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: P906407

Luminaire Tested: DFN2DIP-SQ3F0-050D110US835-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P906407
REPORT IS A COMBINATION OF REPORTS P901510 AND P898289
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ3F0-050D110US835-RLONL
Description: 3 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

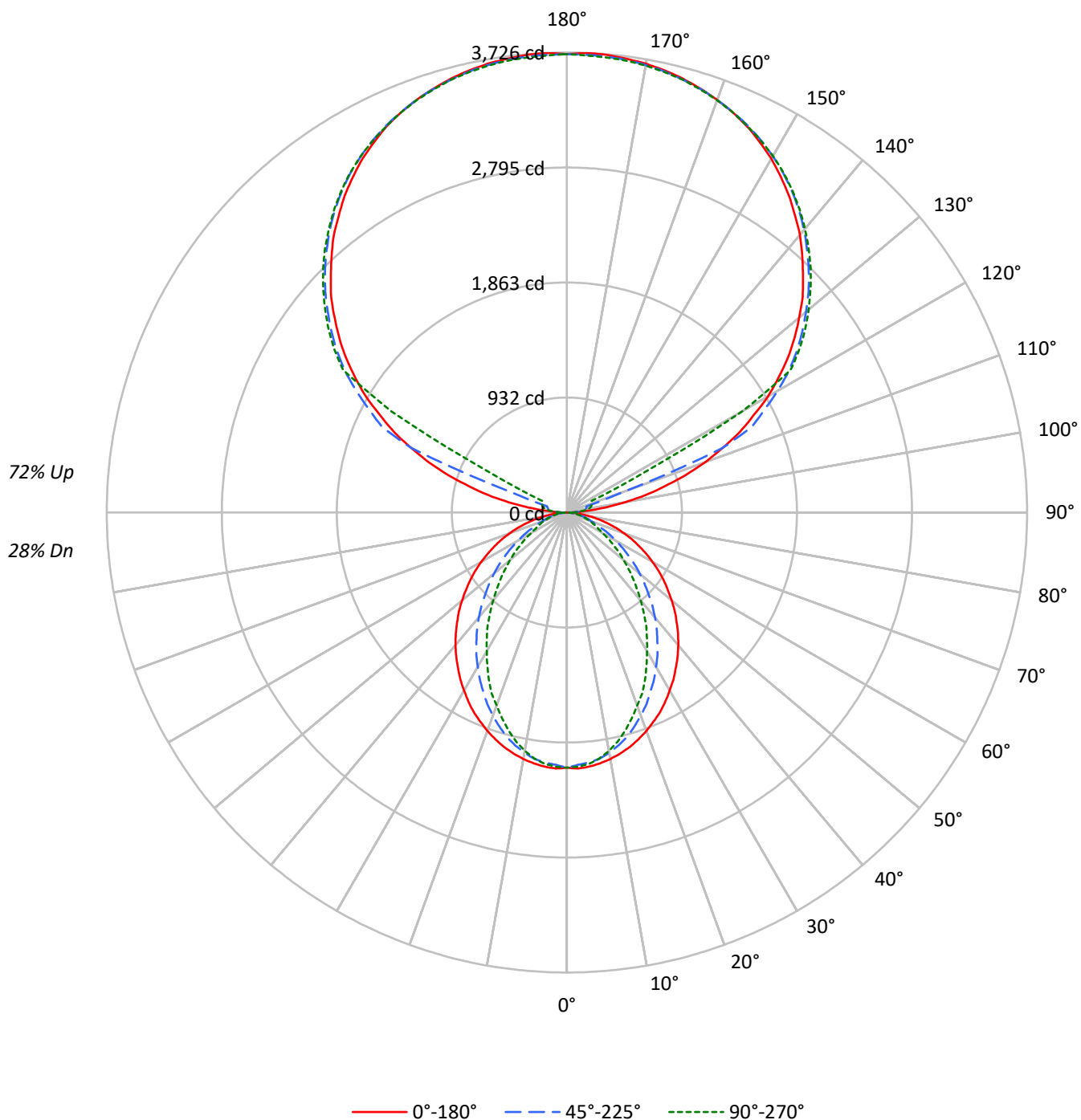
Lumens per Lamp: N/A
Luminaire Lumens: 15140.0 lumens
Efficiency: N/A
Efficacy: 118.2 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.06' x L: 3.06' x H: 0.1')
CIE Type: Semi-Indirect

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	50	30	10
RCR																				
0	102	102	102	102	91	91	91	91	71	71	71	53	53	53	36	36	36	36	36	28
1	93	89	85	82	83	80	77	74	63	61	59	47	46	44	32	32	31	31	31	24
2	85	78	72	67	76	70	65	61	55	52	49	41	39	37	29	27	26	26	26	21
3	78	69	62	56	69	62	56	51	49	45	41	37	34	32	26	24	23	23	23	18
4	71	61	53	48	63	55	49	44	43	39	35	33	30	28	23	21	20	20	20	16
5	65	54	47	41	58	49	42	37	39	34	31	30	26	24	21	19	17	17	17	14
6	60	49	41	35	54	44	37	33	35	30	27	27	24	21	19	17	15	15	15	12
7	55	44	36	31	50	40	33	28	32	27	24	24	21	19	17	15	14	14	14	11
8	51	40	32	27	46	36	30	25	29	24	21	22	19	17	16	14	12	12	12	10
9	48	36	29	24	43	33	27	22	26	22	19	20	17	15	15	13	11	11	11	9
10	45	33	26	22	40	30	24	20	24	20	17	19	16	13	14	12	10	10	10	8

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: 2543 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	193.7	1.3
10°-20°	531.7	3.5
20°-30°	746.5	4.9
30°-40°	813.7	5.4
40°-50°	747.9	4.9
50°-60°	587.3	3.9
60°-70°	382.3	2.5
70°-80°	196.8	1.3
80°-90°	56.8	0.4
90°-100°	122.4	0.8
100°-110°	456.3	3.0
110°-120°	1210.3	8.0
120°-130°	2007.3	13.3
130°-140°	2132.2	14.1
140°-150°	1981.7	13.1
150°-160°	1593.2	10.5
160°-170°	1026.6	6.8
170°-180°	353.3	2.3
0°-30°	1471.8	9.7
0°-40°	2285.5	15.1
0°-60°	3620.7	23.9
0°-90°	4256.6	28.1
90°-120°	1789.0	11.8
90°-150°	7910.3	52.2
90°-180°	10883.0	71.9
0°-180°	15140.0	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	32	54	67	72	14
95°	174	86	105	118	116	207
105°	817	897	164	193	204	873
115°	1544	1590	1658	414	220	1521
125°	2184	2219	2270	2289	2297	1948
135°	2702	2746	2769	2797	2791	2088
145°	3135	3132	3178	3197	3183	1961
155°	3452	3428	3460	3476	3455	1591
165°	3637	3621	3629	3648	3629	1028
175°	3720	3702	3707	3726	3699	354
180°	3712	3712	3712	3712	3712	

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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°	2.6	32.2	53.6	67.3	72.4
92.5°	67.3	56.5	64.4	69.9	72.4
95°	174.5	85.8	104.6	118.3	115.5
97.5°	314.2	94.1	136.8	145.1	147.7
100°	475.6	107.5	153.1	174.5	179.9
102.5°	652.6	647.5	158.5	187.9	196.2
105°	816.6	897.3	164.0	193.3	204.2
107.5°	1007.4	1074.3	169.4	198.7	209.6
110°	1190.1	1246.3	470.2	201.6	212.1

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1362.1	1410.2	1364.6	206.7	215.0
115°	1544.5	1590.1	1657.5	413.7	220.4
117.5°	1703.1	1756.7	1802.6	1418.2	714.5
120°	1880.4	1920.6	1969.1	2001.3	1638.6
122.5°	2030.7	2073.7	2127.6	2143.6	2146.5
125°	2183.8	2218.9	2269.9	2288.7	2296.7
127.5°	2323.5	2361.1	2401.6	2428.4	2431.0
130°	2455.2	2498.3	2527.6	2557.3	2554.8
132.5°	2589.5	2624.6	2654.0	2678.2	2675.7
135°	2702.5	2745.5	2769.4	2796.6	2791.1
137.5°	2820.5	2852.7	2879.8	2906.6	2898.6
140°	2936.0	2957.6	2987.0	3011.2	2997.8
142.5°	3032.9	3051.7	3086.5	3107.9	3094.5
145°	3135.0	3132.1	3177.7	3196.6	3183.2
147.5°	3223.4	3215.4	3261.0	3274.4	3263.9
150°	3309.5	3290.7	3333.7	3349.7	3336.3
152.5°	3381.9	3360.5	3400.7	3417.0	3398.2
155°	3451.8	3427.8	3460.0	3476.0	3454.6
157.5°	3508.2	3486.8	3511.1	3529.9	3508.2
160°	3556.7	3540.4	3556.7	3572.6	3553.8
162.5°	3599.4	3583.5	3596.9	3615.7	3591.5
165°	3637.1	3621.1	3629.1	3647.9	3629.1
167.5°	3666.7	3650.5	3658.8	3677.6	3653.4
170°	3691.0	3674.7	3680.1	3699.0	3674.7
172.5°	3706.9	3691.0	3696.4	3715.2	3691.0
175°	3720.3	3701.5	3706.9	3725.8	3699.0
177.5°	3725.8	3706.9	3709.8	3728.6	3704.4
180°	3712.4	3712.4	3712.4	3712.4	3712.4

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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	7.61	8.29	8.74	9.41	10.96	3.57	4.25	4.70	5.37	6.92
	3H	9.27	9.88	10.41	11.00	12.58	4.74	5.35	5.88	6.48	8.05
	4H	9.87	10.45	11.02	11.57	13.15	5.18	5.76	6.33	6.88	8.46
	6H	10.28	10.81	11.43	11.94	13.53	5.49	6.02	6.64	7.15	8.73
	8H	10.40	10.90	11.56	12.05	13.63	5.57	6.07	6.73	7.22	8.80
	12H	10.46	10.93	11.62	12.07	13.67	5.61	6.08	6.77	7.22	8.82
4H	2H	7.61	8.18	8.76	9.31	10.89	4.15	4.72	5.30	5.85	7.42
	3H	9.42	9.90	10.58	11.05	12.64	5.47	5.95	6.63	7.11	8.69
	4H	10.10	10.54	11.26	11.68	13.29	6.01	6.45	7.17	7.59	9.20
	6H	10.60	10.98	11.77	12.14	13.74	6.41	6.79	7.58	7.96	9.55
	8H	10.77	11.12	11.94	12.28	13.89	6.54	6.89	7.70	8.04	9.66
	12H	10.86	11.18	12.04	12.34	13.96	6.59	6.91	7.77	8.08	9.69
8H	4H	10.06	10.41	11.22	11.56	13.18	6.28	6.63	7.44	7.78	9.40
	6H	10.61	10.90	11.80	12.10	13.71	6.78	7.07	7.97	8.27	9.88
	8H	10.82	11.08	12.01	12.25	13.88	6.97	7.22	8.16	8.39	10.03
	12H	10.95	11.17	12.15	12.35	14.01	7.07	7.29	8.27	8.47	10.13
12H	4H	10.00	10.32	11.18	11.49	13.10	6.27	6.59	7.46	7.76	9.38
	6H	10.58	10.84	11.78	12.01	13.64	6.83	7.08	8.02	8.26	9.89
	8H	10.79	11.02	11.99	12.19	13.85	7.03	7.25	8.22	8.42	10.09

END OF REPORT