

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: P906446

Luminaire Tested: DFN2DIP-SQ3F0-060D120US835-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P906446
REPORT IS A COMBINATION OF REPORTS P900010 AND P896733
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ3F0-060D120US835-RLLFLL
Description: 3 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

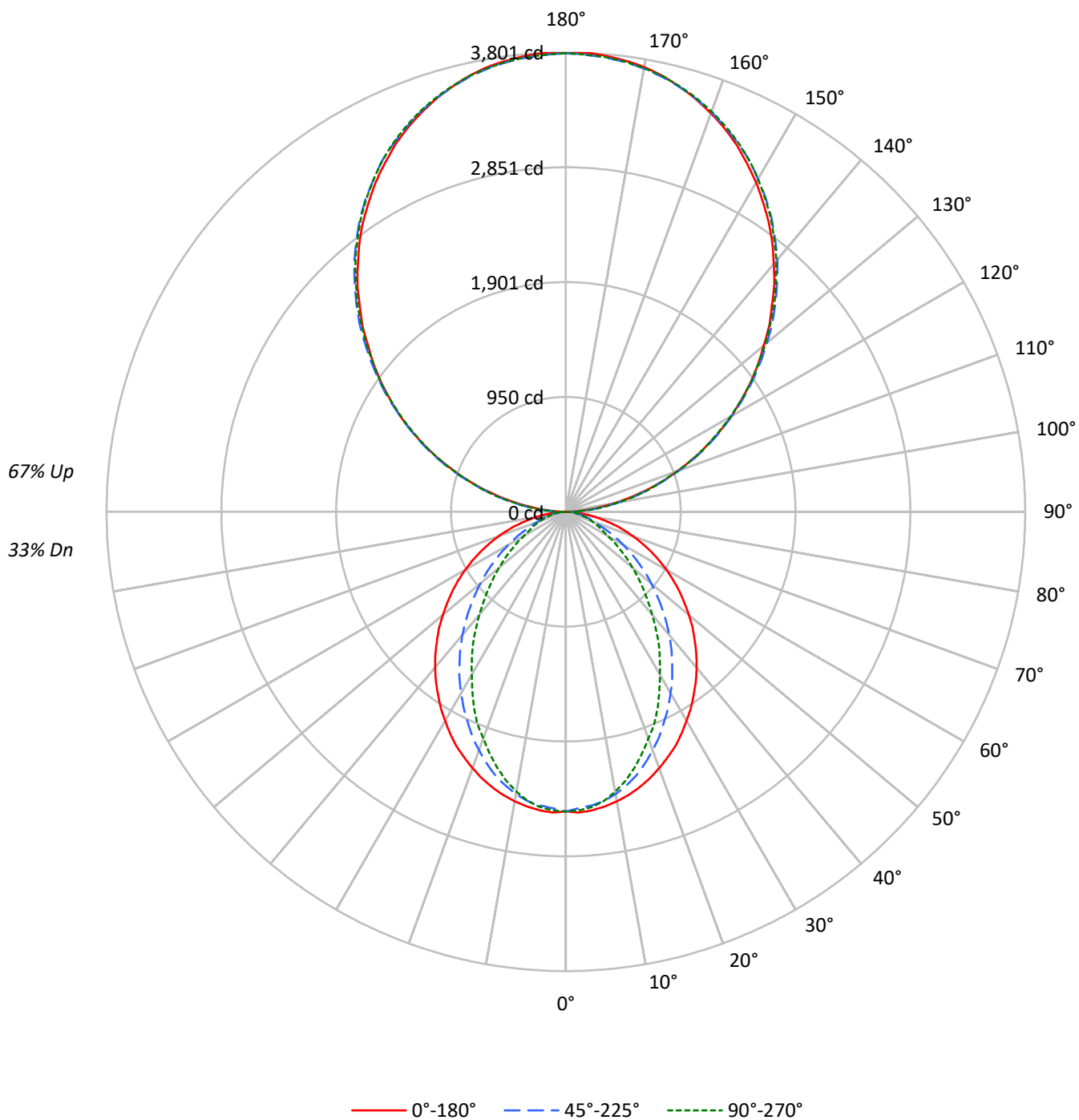
Lumens per Lamp: N/A
Luminaire Lumens: 15720.0 lumens
Efficiency: N/A
Efficacy: 106.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.06' x L: 3.06' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 147.5
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9971
Total Harmonic Distortion (THDi): 0.049
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P906446

CATALOG NUMBER: DFN2DIP-SQ3F0-060D120US835-RLLFLL

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	103	103	103	103	93	93	93	93	74	74	74	56	56	56	40	40	40
1	94	90	86	83	85	81	78	75	65	63	61	50	48	47	36	35	34
2	86	79	73	68	77	71	67	62	57	54	51	44	42	40	32	31	29
3	79	70	63	57	71	63	57	52	51	46	43	39	36	34	29	27	25
4	72	62	54	49	65	56	50	45	45	41	37	35	32	29	26	24	22
5	66	55	47	42	59	50	43	38	40	36	32	32	28	26	23	21	19
6	61	49	42	36	55	45	38	33	36	32	28	29	25	23	21	19	17
7	56	45	37	32	51	41	34	29	33	28	25	26	23	20	19	17	15
8	52	40	33	28	47	37	30	26	30	25	22	24	20	18	18	16	14
9	49	37	30	25	44	34	27	23	28	23	20	22	19	16	17	14	13
10	45	34	27	22	41	31	25	21	25	21	18	20	17	15	15	13	11

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2841	2841	2841
5°	2844	2794	2813
10°	2814	2738	2721
15°	2774	2645	2578
20°	2720	2519	2404
25°	2666	2377	2236
30°	2594	2233	2022
35°	2523	2077	1835
40°	2450	1916	1621
45°	2367	1738	1426
50°	2280	1559	1236
55°	2189	1367	1054
60°	2083	1167	867
65°	1962	963	779
70°	1815	774	703
75°	1630	678	638
80°	1361	563	550
85°	923	367	408

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 3817 cd/sqm

TEST NUMBER: P906446

CATALOG NUMBER: DFN2DIP-SQ3F0-060D120US835-RLFL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	232.4	1.5
10°-20°	638.0	4.1
20°-30°	895.7	5.7
30°-40°	976.4	6.2
40°-50°	897.4	5.7
50°-60°	704.8	4.5
60°-70°	458.8	2.9
70°-80°	236.1	1.5
80°-90°	71.1	0.5
90°-100°	234.8	1.5
100°-110°	746.2	4.7
110°-120°	1276.9	8.1
120°-130°	1679.4	10.7
130°-140°	1885.0	12.0
140°-150°	1848.5	11.8
150°-160°	1550.6	9.9
160°-170°	1028.3	6.5
170°-180°	359.4	2.3
0°-30°	1766.2	11.2
0°-40°	2742.6	17.4
0°-60°	4344.8	27.6
0°-90°	5110.8	32.5
90°-120°	2257.9	14.4
90°-150°	7670.8	48.8
90°-180°	10609.0	67.5
0°-180°	15720.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2480	2480	2480	2480	2480	
5°	2480	2469	2439	2460	2453	235
15°	2359	2334	2258	2215	2193	665
25°	2141	2069	1921	1829	1795	985
35°	1845	1730	1533	1391	1342	1155
45°	1508	1358	1122	963	909	1165
55°	1147	972	729	595	552	1025
65°	774	592	390	314	307	768
75°	413	256	180	164	162	437
85°	96	49	43	43	43	111
90°	3	41	112	105	109	16
95°	167	199	205	205	199	186
105°	689	698	705	710	710	727
115°	1281	1300	1294	1291	1281	1267
125°	1864	1892	1883	1873	1870	1666
135°	2411	2446	2453	2450	2440	1863
145°	2927	2950	2968	2971	2959	1829
155°	3347	3356	3366	3382	3372	1540
165°	3641	3637	3637	3660	3644	1027
175°	3788	3779	3772	3795	3776	360
180°	3795	3795	3795	3795	3795	

TEST NUMBER: P906446

CATALOG NUMBER: DFN2DIP-SQ3F0-060D120US835-RLFL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2479.8	2479.8	2479.8	2479.8	2479.8
2.5°	2491.0	2479.8	2455.0	2477.6	2473.1
5°	2479.8	2468.6	2439.3	2459.6	2452.9
7.5°	2459.6	2446.2	2414.8	2423.6	2412.4
10°	2432.6	2416.9	2372.2	2365.3	2351.9
12.5°	2399.1	2378.8	2318.1	2304.8	2280.0
15°	2358.6	2333.8	2257.6	2215.0	2192.6
17.5°	2311.5	2275.5	2181.2	2131.9	2096.0
20°	2257.6	2212.6	2100.5	2044.5	1995.0
22.5°	2199.3	2147.6	2017.4	1941.2	1907.6
25°	2141.0	2069.1	1921.0	1829.1	1795.3
27.5°	2071.5	1995.0	1831.2	1725.7	1674.1
30°	1997.4	1911.9	1732.4	1618.1	1557.4
32.5°	1925.5	1822.2	1638.4	1503.6	1447.4
35°	1844.8	1730.3	1532.9	1391.4	1341.9
37.5°	1766.2	1642.6	1434.1	1279.1	1223.1
40°	1683.1	1548.6	1330.7	1171.4	1113.1
42.5°	1597.9	1454.3	1227.6	1061.4	1005.5
45°	1508.1	1357.6	1122.2	962.6	908.8
47.5°	1422.9	1263.6	1021.2	861.7	812.4
50°	1328.6	1169.3	922.4	767.4	720.5
52.5°	1236.4	1068.1	828.1	680.0	637.4
55°	1146.7	971.7	729.3	594.8	552.1
57.5°	1054.8	875.2	641.9	516.2	480.2
60°	960.5	781.0	549.8	435.5	399.5
62.5°	868.6	689.1	471.2	363.6	345.7
65°	774.3	592.4	390.5	314.3	307.4
67.5°	684.5	502.6	314.3	276.0	269.3
70°	590.2	415.2	260.2	237.9	228.8
72.5°	500.5	334.3	217.6	199.8	195.2
75°	412.9	255.7	179.5	163.8	161.7
77.5°	325.5	181.7	141.4	132.4	127.9
80°	244.5	130.2	107.6	98.8	98.8
82.5°	170.5	87.6	74.0	69.5	69.5
85°	96.4	49.3	42.6	42.6	42.6
87.5°	36.0	17.9	17.9	15.7	15.7
90°	3.4	41.2	112.1	105.3	108.7
92.5°	70.9	96.1	99.5	103.0	103.0
95°	167.0	199.1	204.8	204.8	199.1
97.5°	278.0	307.8	320.4	320.4	320.4
100°	406.2	432.5	441.6	441.6	438.2
102.5°	541.2	560.6	573.2	576.7	573.2
105°	688.8	697.9	704.8	710.5	710.5
107.5°	835.2	849.0	849.0	851.2	835.2
110°	977.1	995.4	995.4	995.4	986.3

TEST NUMBER: P906446

CATALOG NUMBER: DFN2DIP-SQ3F0-060D120US835-RLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1130.4	1149.9	1146.4	1137.3	1130.4
115°	1281.4	1299.8	1294.0	1290.6	1281.4
117.5°	1431.3	1456.5	1440.5	1431.3	1422.2
120°	1582.4	1607.5	1582.4	1582.4	1572.1
122.5°	1719.7	1751.7	1735.7	1726.5	1719.7
125°	1863.8	1892.4	1883.3	1873.0	1869.5
127.5°	2004.6	2040.0	2027.4	2013.7	2004.6
130°	2136.1	2177.3	2171.6	2164.7	2152.1
132.5°	2283.7	2315.8	2318.0	2302.0	2292.9
135°	2410.7	2446.2	2453.1	2449.6	2440.5
137.5°	2552.6	2581.2	2586.9	2584.6	2570.9
140°	2677.3	2705.9	2721.9	2721.9	2709.3
142.5°	2805.5	2834.1	2843.2	2846.6	2834.1
145°	2926.7	2949.6	2967.9	2971.4	2958.8
147.5°	3035.4	3064.0	3077.8	3083.5	3070.9
150°	3147.6	3167.0	3179.6	3189.9	3179.6
152.5°	3247.1	3266.5	3282.6	3295.2	3282.6
155°	3346.6	3355.8	3366.1	3382.1	3371.8
157.5°	3432.5	3439.3	3445.0	3467.9	3451.9
160°	3509.1	3516.0	3519.4	3538.9	3525.1
162.5°	3580.0	3580.0	3583.5	3605.2	3589.2
165°	3640.7	3637.3	3637.3	3660.1	3644.1
167.5°	3695.6	3685.3	3685.3	3708.2	3692.2
170°	3736.8	3727.6	3724.2	3747.1	3727.6
172.5°	3765.4	3756.2	3752.8	3775.7	3756.2
175°	3788.3	3779.1	3772.3	3795.1	3775.7
177.5°	3800.9	3791.7	3784.8	3804.3	3784.8
180°	3795.1	3795.1	3795.1	3795.1	3795.1

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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	8.84	9.55	9.94	10.64	12.14	4.80	5.51	5.90	6.60	8.10
	3H	10.50	11.13	11.61	12.24	13.76	5.97	6.60	7.08	7.71	9.23
	4H	11.10	11.70	12.22	12.80	14.33	6.41	7.01	7.53	8.11	9.64
	6H	11.51	12.06	12.64	13.17	14.71	6.72	7.27	7.85	8.38	9.91
	8H	11.64	12.16	12.76	13.28	14.81	6.81	7.33	7.94	8.45	9.98
	12H	11.69	12.19	12.82	13.30	14.85	6.84	7.34	7.98	8.45	10.01
4H	2H	8.84	9.44	9.97	10.54	12.07	5.38	5.98	6.50	7.08	8.60
	3H	10.65	11.15	11.78	12.28	13.82	6.71	7.21	7.84	8.34	9.87
	4H	11.34	11.79	12.47	12.91	14.47	7.25	7.70	8.38	8.82	10.38
	6H	11.84	12.23	12.98	13.37	14.92	7.65	8.04	8.79	9.19	10.74
	8H	12.01	12.38	13.15	13.51	15.07	7.78	8.14	8.92	9.27	10.84
	12H	12.10	12.43	13.25	13.57	15.14	7.83	8.16	8.99	9.31	10.88
8H	4H	11.29	11.66	12.43	12.79	14.36	7.52	7.88	8.66	9.01	10.58
	6H	11.85	12.15	13.01	13.33	14.89	8.02	8.32	9.18	9.50	11.06
	8H	12.06	12.33	13.23	13.48	15.06	8.21	8.47	9.37	9.62	11.21
	12H	12.19	12.42	13.36	13.57	15.19	8.31	8.55	9.48	9.70	11.31
12H	4H	11.24	11.57	12.40	12.71	14.29	7.51	7.84	8.67	8.99	10.56
	6H	11.82	12.09	12.99	13.24	14.82	8.07	8.33	9.23	9.49	11.07
	8H	12.04	12.27	13.20	13.42	15.04	8.27	8.50	9.44	9.65	11.27

END OF REPORT