

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: P906600

Luminaire Tested: DFN2DIP-SQ3F0-110D060US835-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P906600
REPORT IS A COMBINATION OF REPORTS P899911 AND P896733
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ3F0-110D060US835-FLLFLL
Description: 3 foot, Square Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

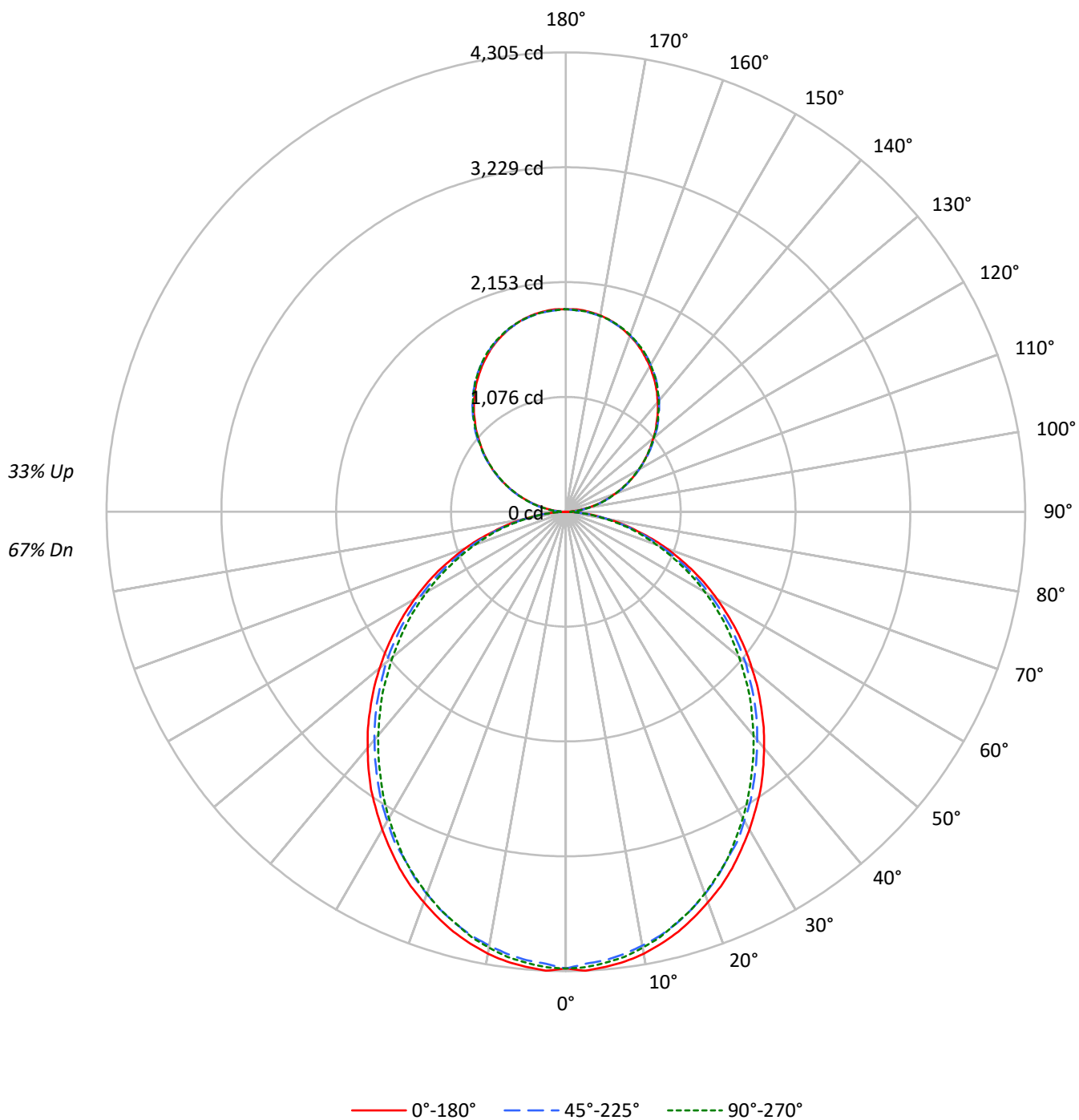
Lumens per Lamp: N/A
Luminaire Lumens: 16200.0 lumens
Efficiency: N/A
Efficacy: 103.2 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.06' x L: 3.06' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 157
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9977
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: P906600

CATALOG NUMBER: DFN2DIP-SQ3F0-110D060US835-FLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P906600

CATALOG NUMBER: DFN2DIP-SQ3F0-110D060US835-FLLFL

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	111	111	111	111	105	105	105	105	93	93	93	82	82	82	72	72	72
1	102	97	93	90	96	92	88	85	82	79	76	72	70	68	64	62	61
2	93	85	79	73	87	80	75	70	72	67	63	63	60	57	56	54	51
3	85	75	67	61	79	71	64	58	63	58	53	56	52	48	50	46	44
4	77	66	58	52	73	63	55	50	56	50	46	50	45	42	44	41	38
5	71	59	51	45	67	56	49	43	50	44	39	45	40	36	40	36	33
6	66	53	45	39	62	51	43	37	45	39	35	41	36	32	36	32	29
7	61	48	40	34	57	46	38	33	41	35	31	37	32	28	33	29	26
8	56	44	36	30	53	42	34	29	38	32	27	34	29	25	31	26	23
9	53	40	32	27	50	38	31	26	35	29	24	31	26	23	28	24	21
10	49	37	29	24	46	35	28	24	32	26	22	29	24	21	26	22	19

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4904	4904	4904
5°	4909	4833	4867
10°	4866	4764	4799
15°	4791	4683	4695
20°	4692	4570	4588
25°	4592	4437	4464
30°	4468	4312	4308
35°	4351	4166	4142
40°	4207	4018	3985
45°	4063	3869	3824
50°	3905	3713	3637
55°	3740	3533	3465
60°	3553	3319	3268
65°	3348	3097	3035
70°	3088	2826	2784
75°	2728	2502	2551
80°	2293	2087	2108
85°	1614	1383	1380

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 4063 cd/sqm

TEST NUMBER: P906600

CATALOG NUMBER: DFN2DIP-SQ3F0-110D060US835-FLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	402.8	2.5
10°-20°	1133.5	7.0
20°-30°	1665.7	10.3
30°-40°	1934.7	11.9
40°-50°	1932.3	11.9
50°-60°	1684.9	10.4
60°-70°	1245.5	7.7
70°-80°	704.7	4.3
80°-90°	191.4	1.2
90°-100°	117.4	0.7
100°-110°	373.1	2.3
110°-120°	638.5	3.9
120°-130°	839.7	5.2
130°-140°	942.5	5.8
140°-150°	924.2	5.7
150°-160°	775.3	4.8
160°-170°	514.2	3.2
170°-180°	179.7	1.1
0°-30°	3202.1	19.8
0°-40°	5136.7	31.7
0°-60°	8753.8	54.0
0°-90°	10895.4	67.3
90°-120°	1129.0	7.0
90°-150°	3835.4	23.7
90°-180°	5305.0	32.7
0°-180°	16200.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	4280	4280	4280	4280	4280	
5°	4280	4264	4219	4251	4244	406
15°	4074	4050	3996	4013	3992	1148
25°	3688	3655	3585	3593	3585	1697
35°	3182	3140	3074	3050	3029	1987
45°	2589	2560	2498	2453	2437	1998
55°	1959	1934	1885	1836	1815	1752
65°	1321	1296	1255	1218	1198	1306
75°	691	683	662	638	646	738
85°	169	165	161	148	144	188
90°	2	21	56	53	54	15
95°	84	100	102	102	100	93
105°	344	349	352	355	355	363
115°	641	650	647	645	641	634
125°	932	946	942	936	935	833
135°	1205	1223	1226	1225	1220	932
145°	1463	1475	1484	1486	1479	914
155°	1673	1678	1683	1691	1686	770
165°	1820	1819	1819	1830	1822	514
175°	1894	1890	1886	1898	1888	180
180°	1898	1898	1898	1898	1898	

TEST NUMBER: P906600

CATALOG NUMBER: DFN2DIP-SQ3F0-110D060US835-FLLFLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	4280.2	4280.2	4280.2	4280.2	4280.2
2.5°	4305.0	4284.5	4239.1	4280.2	4272.3
5°	4280.2	4264.0	4218.6	4251.3	4243.5
7.5°	4251.3	4226.9	4181.5	4214.7	4206.4
10°	4206.4	4177.5	4128.2	4160.9	4148.7
12.5°	4144.4	4119.9	4070.6	4091.1	4082.8
15°	4074.5	4050.0	3996.3	4012.9	3992.4
17.5°	3988.0	3963.6	3909.9	3930.4	3909.9
20°	3893.3	3868.8	3811.2	3823.4	3807.3
22.5°	3799.0	3761.8	3708.1	3708.1	3699.8
25°	3687.6	3654.9	3585.0	3592.9	3585.0
27.5°	3564.0	3535.2	3481.9	3469.7	3449.2
30°	3440.9	3407.7	3346.1	3333.9	3317.3
32.5°	3309.0	3284.6	3218.6	3193.7	3177.1
35°	3181.5	3140.5	3074.5	3049.6	3029.1
37.5°	3037.4	3000.3	2934.4	2905.5	2885.0
40°	2889.4	2856.2	2790.3	2753.6	2737.0
42.5°	2745.3	2712.1	2646.6	2605.1	2580.7
45°	2589.0	2560.1	2498.1	2453.2	2436.6
47.5°	2436.6	2407.8	2341.8	2296.4	2271.9
50°	2275.9	2255.4	2197.7	2140.1	2119.6
52.5°	2119.6	2090.7	2037.5	1992.0	1963.2
55°	1959.3	1934.4	1885.1	1835.7	1815.2
57.5°	1798.6	1778.1	1724.4	1675.0	1658.4
60°	1637.9	1621.8	1564.1	1518.7	1506.5
62.5°	1481.6	1452.8	1411.7	1370.7	1354.1
65°	1321.3	1296.4	1255.4	1218.3	1197.8
67.5°	1156.7	1135.8	1099.1	1070.3	1053.7
70°	1004.3	987.7	950.6	921.8	905.6
72.5°	848.0	831.4	810.9	782.1	769.8
75°	691.2	683.4	662.4	638.0	646.3
77.5°	551.5	534.9	526.6	514.4	502.2
80°	411.8	407.4	399.1	386.9	378.6
82.5°	279.9	279.9	276.0	259.4	259.4
85°	168.6	164.6	160.7	148.0	144.1
87.5°	74.2	65.9	57.6	45.4	41.0
90°	1.7	20.6	56.1	52.6	54.3
92.5°	35.5	48.1	49.8	51.5	51.5
95°	83.5	99.5	102.4	102.4	99.5
97.5°	139.0	153.9	160.2	160.2	160.2
100°	203.1	216.2	220.8	220.8	219.1
102.5°	270.6	280.3	286.6	288.3	286.6
105°	344.4	349.0	352.4	355.3	355.3
107.5°	417.6	424.5	424.5	425.6	417.6
110°	488.6	497.7	497.7	497.7	493.1

TEST NUMBER: P906600

CATALOG NUMBER: DFN2DIP-SQ3F0-110D060US835-FLLFL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	565.2	574.9	573.2	568.6	565.2
115°	640.7	649.9	647.0	645.3	640.7
117.5°	715.7	728.3	720.2	715.7	711.1
120°	791.2	803.8	791.2	791.2	786.0
122.5°	859.8	875.8	867.8	863.3	859.8
125°	931.9	946.2	941.6	936.5	934.8
127.5°	1002.3	1020.0	1013.7	1006.9	1002.3
130°	1068.1	1088.7	1085.8	1082.4	1076.1
132.5°	1141.9	1157.9	1159.0	1151.0	1146.4
135°	1205.4	1223.1	1226.5	1224.8	1220.2
137.5°	1276.3	1290.6	1293.5	1292.3	1285.5
140°	1338.7	1353.0	1361.0	1361.0	1354.7
142.5°	1402.7	1417.0	1421.6	1423.3	1417.0
145°	1463.4	1474.8	1484.0	1485.7	1479.4
147.5°	1517.7	1532.0	1538.9	1541.7	1535.4
150°	1573.8	1583.5	1589.8	1594.9	1589.8
152.5°	1623.5	1633.3	1641.3	1647.6	1641.3
155°	1673.3	1677.9	1683.0	1691.1	1685.9
157.5°	1716.2	1719.7	1722.5	1734.0	1726.0
160°	1754.6	1758.0	1759.7	1769.4	1762.6
162.5°	1790.0	1790.0	1791.7	1802.6	1794.6
165°	1820.3	1818.6	1818.6	1830.1	1822.1
167.5°	1847.8	1842.7	1842.7	1854.1	1846.1
170°	1868.4	1863.8	1862.1	1873.5	1863.8
172.5°	1882.7	1878.1	1876.4	1887.8	1878.1
175°	1894.1	1889.6	1886.1	1897.6	1887.8
177.5°	1900.4	1895.9	1892.4	1902.1	1892.4
180°	1897.6	1897.6	1897.6	1897.6	1897.6

TEST NUMBER: P906600

CATALOG NUMBER: DFN2DIP-SQ3F0-110D060US835-FLLFLL

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	14.22	15.26	15.01	16.08	17.08	13.77	14.82	14.57	15.63	16.63
	3H	15.89	16.82	16.69	17.65	18.68	15.40	16.33	16.20	17.16	18.19
	4H	16.48	17.36	17.30	18.20	19.24	15.99	16.87	16.81	17.70	18.74
	6H	16.89	17.70	17.72	18.54	19.60	16.39	17.20	17.22	18.04	19.10
	8H	16.99	17.77	17.84	18.63	19.69	16.49	17.27	17.34	18.13	19.18
	12H	17.05	17.79	17.90	18.64	19.72	16.54	17.28	17.39	18.13	19.21
4H	2H	14.70	15.58	15.53	16.41	17.46	14.34	15.23	15.17	16.06	17.10
	3H	16.57	17.31	17.41	18.18	19.24	16.17	16.90	17.01	17.77	18.83
	4H	17.29	17.96	18.14	18.83	19.91	16.87	17.54	17.72	18.40	19.49
	6H	17.81	18.39	18.68	19.28	20.37	17.38	17.96	18.25	18.85	19.94
	8H	17.96	18.51	18.84	19.39	20.49	17.53	18.07	18.40	18.95	20.06
	12H	18.04	18.53	18.94	19.44	20.54	17.59	18.08	18.49	18.99	20.09
8H	4H	17.50	18.04	18.37	18.93	20.03	17.12	17.66	17.99	18.55	19.65
	6H	18.13	18.58	19.03	19.51	20.61	17.75	18.20	18.65	19.12	20.22
	8H	18.35	18.75	19.26	19.67	20.79	17.96	18.36	18.87	19.28	20.39
	12H	18.49	18.84	19.40	19.75	20.92	18.08	18.43	18.99	19.34	20.51
12H	4H	17.49	17.98	18.38	18.88	19.99	17.12	17.61	18.02	18.52	19.62
	6H	18.16	18.56	19.07	19.48	20.60	17.79	18.19	18.70	19.11	20.23
	8H	18.41	18.76	19.32	19.67	20.84	18.03	18.38	18.94	19.29	20.46