

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: P903676

Luminaire Tested: DFN2DIP-SQ3F0-050D110US830-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P903676
REPORT IS A COMBINATION OF REPORTS P899989 AND P896733
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ3F0-050D110US830-FLLFLL
Description: 3 foot, Square Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

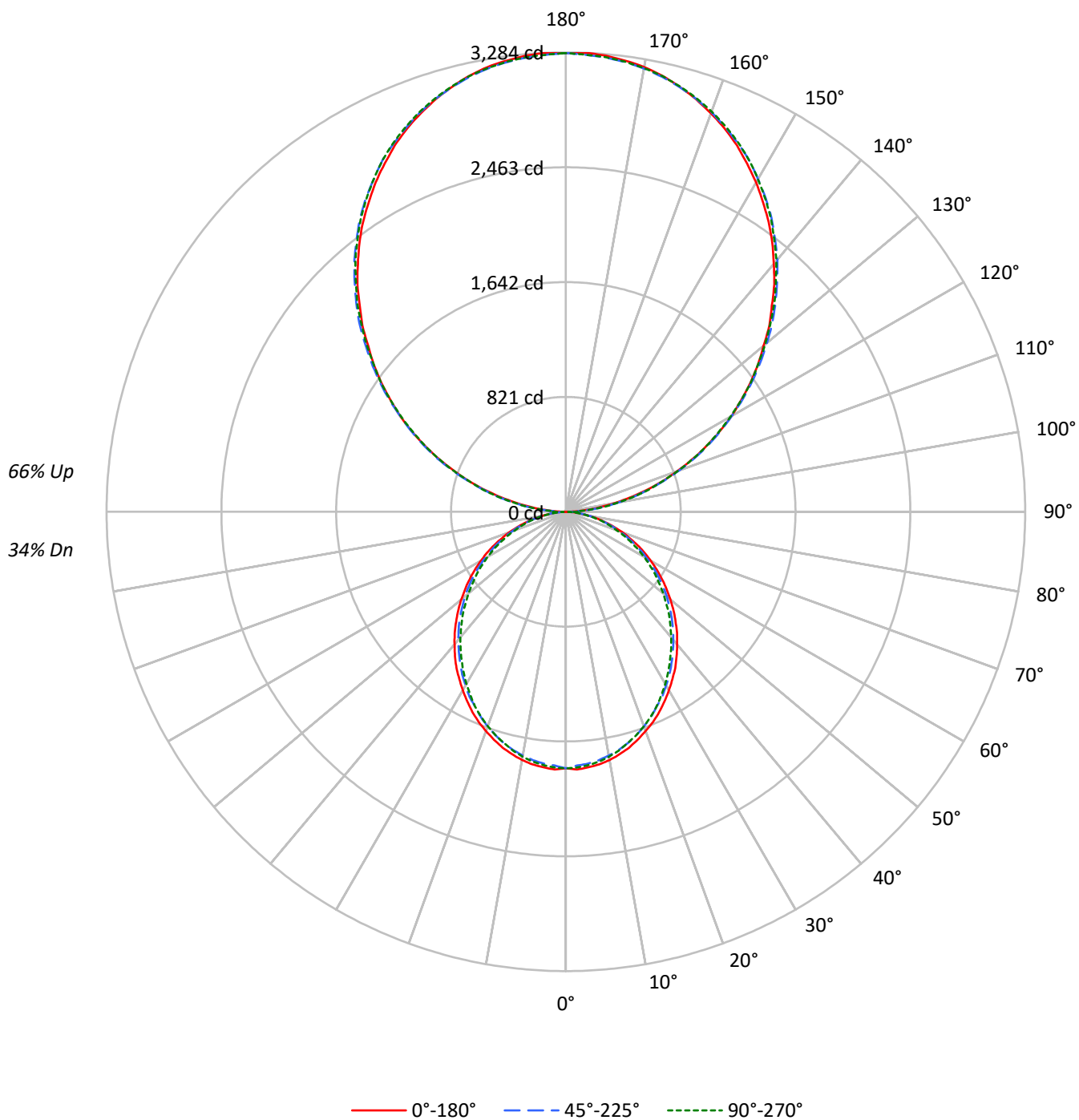
Lumens per Lamp: N/A
Luminaire Lumens: 13841.2 lumens
Efficiency: N/A
Efficacy: 108.1 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.06' x L: 3.06' x H: 0.1')
CIE Type: Semi-Indirect

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

TEST NUMBER: P903676

CATALOG NUMBER: DFN2DIP-SQ3F0-050D110US830-FLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P903676

CATALOG NUMBER: DFN2DIP-SQ3F0-050D110US830-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	103	103	103	103	93	93	93	93	74	74	74	57	57	57	41	41	41
1	94	90	86	83	85	81	78	75	65	63	61	50	49	47	36	36	35
2	86	78	73	67	77	71	66	62	57	53	50	44	42	40	32	31	29
3	78	69	62	56	70	62	56	51	50	46	42	39	36	33	28	26	25
4	71	61	53	47	64	55	49	44	45	40	36	35	31	29	25	23	21
5	65	54	46	40	59	49	42	37	40	35	31	31	27	25	23	20	19
6	60	48	41	35	54	44	37	32	36	31	27	28	24	22	21	18	16
7	56	44	36	31	50	40	33	28	32	27	24	25	22	19	19	16	15
8	52	40	32	27	46	36	29	25	29	24	21	23	20	17	17	15	13
9	48	36	29	24	43	33	26	22	27	22	19	21	18	15	16	14	12
10	45	33	26	21	40	30	24	20	25	20	17	20	16	14	15	12	11

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2101	2101	2101
5°	2103	2070	2085
10°	2085	2041	2056
15°	2053	2006	2011
20°	2010	1958	1966
25°	1967	1901	1913
30°	1914	1848	1846
35°	1864	1785	1775
40°	1802	1721	1707
45°	1741	1658	1638
50°	1673	1591	1558
55°	1602	1514	1484
60°	1522	1422	1400
65°	1434	1327	1300
70°	1323	1211	1193
75°	1169	1072	1093
80°	982	894	903
85°	691	592	591

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 3298 cd/sqm

TEST NUMBER: P903676

CATALOG NUMBER: DFN2DIP-SQ3F0-050D110US830-FLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	172.6	1.2
10°-20°	485.6	3.5
20°-30°	713.7	5.2
30°-40°	828.9	6.0
40°-50°	827.8	6.0
50°-60°	721.8	5.2
60°-70°	533.6	3.9
70°-80°	301.9	2.2
80°-90°	89.0	0.6
90°-100°	202.9	1.5
100°-110°	644.7	4.7
110°-120°	1103.3	8.0
120°-130°	1451.0	10.5
130°-140°	1628.6	11.8
140°-150°	1597.1	11.5
150°-160°	1339.7	9.7
160°-170°	888.5	6.4
170°-180°	310.5	2.2
0°-30°	1371.9	9.9
0°-40°	2200.7	15.9
0°-60°	3750.4	27.1
0°-90°	4674.9	33.8
90°-120°	1950.9	14.1
90°-150°	6627.6	47.9
90°-180°	9166.0	66.2
0°-180°	13841.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1834	1834	1834	1834	1834	
5°	1834	1827	1807	1821	1818	174
15°	1746	1735	1712	1719	1710	492
25°	1580	1566	1536	1539	1536	727
35°	1363	1346	1317	1307	1298	851
45°	1109	1097	1070	1051	1044	856
55°	839	829	808	786	778	750
65°	566	555	538	522	513	560
75°	296	293	284	273	277	316
85°	72	70	69	63	62	81
90°	3	36	97	91	94	14
95°	144	172	177	177	172	161
105°	595	603	609	614	614	628
115°	1107	1123	1118	1115	1107	1095
125°	1610	1635	1627	1618	1615	1439
135°	2083	2114	2119	2116	2109	1610
145°	2529	2548	2564	2567	2556	1580
155°	2892	2899	2908	2922	2913	1331
165°	3146	3142	3142	3162	3148	887
175°	3273	3265	3259	3279	3262	311
180°	3279	3279	3279	3279	3279	

TEST NUMBER: P903676

CATALOG NUMBER: DFN2DIP-SQ3F0-050D110US830-FLLFLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1833.7	1833.7	1833.7	1833.7	1833.7
2.5°	1844.4	1835.6	1816.2	1833.7	1830.4
5°	1833.7	1826.8	1807.3	1821.4	1818.1
7.5°	1821.4	1810.9	1791.5	1805.7	1802.1
10°	1802.1	1789.8	1768.7	1782.6	1777.4
12.5°	1775.6	1765.1	1744.0	1752.8	1749.2
15°	1745.6	1735.1	1712.1	1719.3	1710.4
17.5°	1708.5	1698.1	1675.1	1683.9	1675.1
20°	1668.0	1657.6	1632.9	1638.0	1631.2
22.5°	1627.6	1611.7	1588.7	1588.7	1585.1
25°	1579.9	1565.8	1535.9	1539.3	1535.9
27.5°	1526.9	1514.6	1491.8	1486.5	1477.7
30°	1474.1	1460.0	1433.6	1428.3	1421.3
32.5°	1417.7	1407.2	1378.9	1368.3	1361.2
35°	1363.0	1345.5	1317.2	1306.6	1297.8
37.5°	1301.3	1285.4	1257.2	1244.8	1236.0
40°	1237.9	1223.7	1195.4	1179.7	1172.6
42.5°	1176.2	1162.0	1133.9	1116.1	1105.6
45°	1109.2	1096.8	1070.3	1051.0	1043.9
47.5°	1043.9	1031.5	1003.3	983.8	973.4
50°	975.1	966.3	941.6	916.9	908.0
52.5°	908.0	895.7	872.9	853.5	841.1
55°	839.4	828.8	807.6	786.5	777.7
57.5°	770.5	761.8	738.8	717.7	710.5
60°	701.7	694.8	670.1	650.6	645.5
62.5°	634.8	622.5	604.8	587.2	580.1
65°	566.1	555.4	537.8	522.0	513.1
67.5°	495.6	486.6	470.9	458.5	451.4
70°	430.3	423.2	407.3	394.9	388.0
72.5°	363.4	356.2	347.4	335.1	329.8
75°	296.1	292.8	283.8	273.3	276.9
77.5°	236.3	229.1	225.6	220.4	215.2
80°	176.4	174.6	171.0	165.8	162.2
82.5°	119.9	119.9	118.2	111.1	111.1
85°	72.2	70.5	68.8	63.4	61.7
87.5°	31.8	28.3	24.7	19.4	17.6
90°	2.9	35.6	96.9	91.0	93.9
92.5°	61.3	83.0	86.0	89.0	89.0
95°	144.3	172.0	176.9	176.9	172.0
97.5°	240.3	265.9	276.8	276.8	276.8
100°	350.9	373.6	381.5	381.5	378.6
102.5°	467.6	484.4	495.3	498.2	495.3
105°	595.1	603.0	609.0	613.9	613.9
107.5°	721.6	733.5	733.5	735.5	721.6
110°	844.2	860.1	860.1	860.1	852.2

TEST NUMBER: P903676

CATALOG NUMBER: DFN2DIP-SQ3F0-050D110US830-FLLFL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	976.7	993.4	990.5	982.6	976.7
115°	1107.2	1122.9	1118.0	1115.1	1107.2
117.5°	1236.7	1258.4	1244.5	1236.7	1228.8
120°	1367.2	1388.9	1367.2	1367.2	1358.3
122.5°	1485.8	1513.4	1499.6	1491.7	1485.8
125°	1610.3	1635.0	1627.1	1618.3	1615.2
127.5°	1731.9	1762.6	1751.7	1739.8	1731.9
130°	1845.6	1881.2	1876.2	1870.3	1859.4
132.5°	1973.1	2000.8	2002.8	1989.0	1981.0
135°	2082.8	2113.5	2119.4	2116.5	2108.6
137.5°	2205.5	2230.1	2235.1	2233.1	2221.3
140°	2313.2	2337.9	2351.7	2351.7	2340.9
142.5°	2423.9	2448.6	2456.5	2459.5	2448.6
145°	2528.7	2548.4	2564.3	2567.2	2556.4
147.5°	2622.6	2647.3	2659.2	2664.1	2653.3
150°	2719.5	2736.3	2747.1	2756.1	2747.1
152.5°	2805.5	2822.3	2836.1	2847.0	2836.1
155°	2891.5	2899.4	2908.3	2922.2	2913.2
157.5°	2965.6	2971.6	2976.5	2996.2	2982.4
160°	3031.9	3037.8	3040.7	3057.6	3045.7
162.5°	3093.1	3093.1	3096.2	3114.9	3101.1
165°	3145.5	3142.5	3142.5	3162.3	3148.5
167.5°	3193.0	3184.1	3184.1	3203.9	3190.0
170°	3228.6	3220.7	3217.7	3237.4	3220.7
172.5°	3253.3	3245.4	3242.4	3262.2	3245.4
175°	3273.1	3265.2	3259.2	3279.0	3262.2
177.5°	3283.9	3276.0	3270.1	3286.9	3270.1
180°	3279.0	3279.0	3279.0	3279.0	3279.0

TEST NUMBER: P903676

CATALOG NUMBER: DFN2DIP-SQ3F0-050D110US830-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	8.09	8.82	9.18	9.91	11.39	7.65	8.38	8.73	9.46	10.95
	3H	9.74	10.39	10.83	11.49	12.99	9.25	9.90	10.34	11.00	12.50
	4H	10.32	10.94	11.42	12.03	13.54	9.82	10.45	10.93	11.54	13.05
	6H	10.71	11.28	11.82	12.38	13.90	10.21	10.78	11.32	11.88	13.40
	8H	10.81	11.35	11.92	12.46	13.98	10.30	10.85	11.42	11.96	13.48
	12H	10.85	11.37	11.97	12.47	14.01	10.34	10.86	11.46	11.96	13.50
4H	2H	8.53	9.16	9.64	10.25	11.76	8.18	8.80	9.29	9.90	11.40
	3H	10.38	10.90	11.50	12.02	13.54	9.97	10.49	11.09	11.61	13.14
	4H	11.09	11.56	12.21	12.67	14.22	10.66	11.14	11.78	12.25	13.79
	6H	11.59	12.00	12.72	13.13	14.67	11.16	11.57	12.29	12.70	14.23
	8H	11.73	12.12	12.86	13.24	14.79	11.30	11.68	12.43	12.80	14.35
	12H	11.80	12.15	12.94	13.28	14.84	11.35	11.70	12.50	12.83	14.39
8H	4H	11.27	11.65	12.40	12.78	14.33	10.89	11.27	12.02	12.40	13.95
	6H	11.89	12.20	13.04	13.37	14.92	11.50	11.82	12.65	12.99	14.53
	8H	12.10	12.38	13.26	13.53	15.09	11.71	11.99	12.87	13.13	14.70
	12H	12.23	12.47	13.39	13.61	15.21	11.82	12.06	12.98	13.20	14.80
12H	4H	11.25	11.59	12.39	12.73	14.29	10.88	11.22	12.02	12.36	13.92
	6H	11.92	12.19	13.07	13.34	14.91	11.54	11.82	12.70	12.97	14.53
	8H	12.15	12.39	13.31	13.53	15.14	11.77	12.01	12.93	13.15	14.76