

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: P917632

Luminaire Tested: DFN2DIP-SQ4F0-070D110US930-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P917632
REPORT IS A COMBINATION OF REPORTS P900151 AND P896915
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ4F0-070D110US930-FLLFL
Description: 4 foot, Square Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

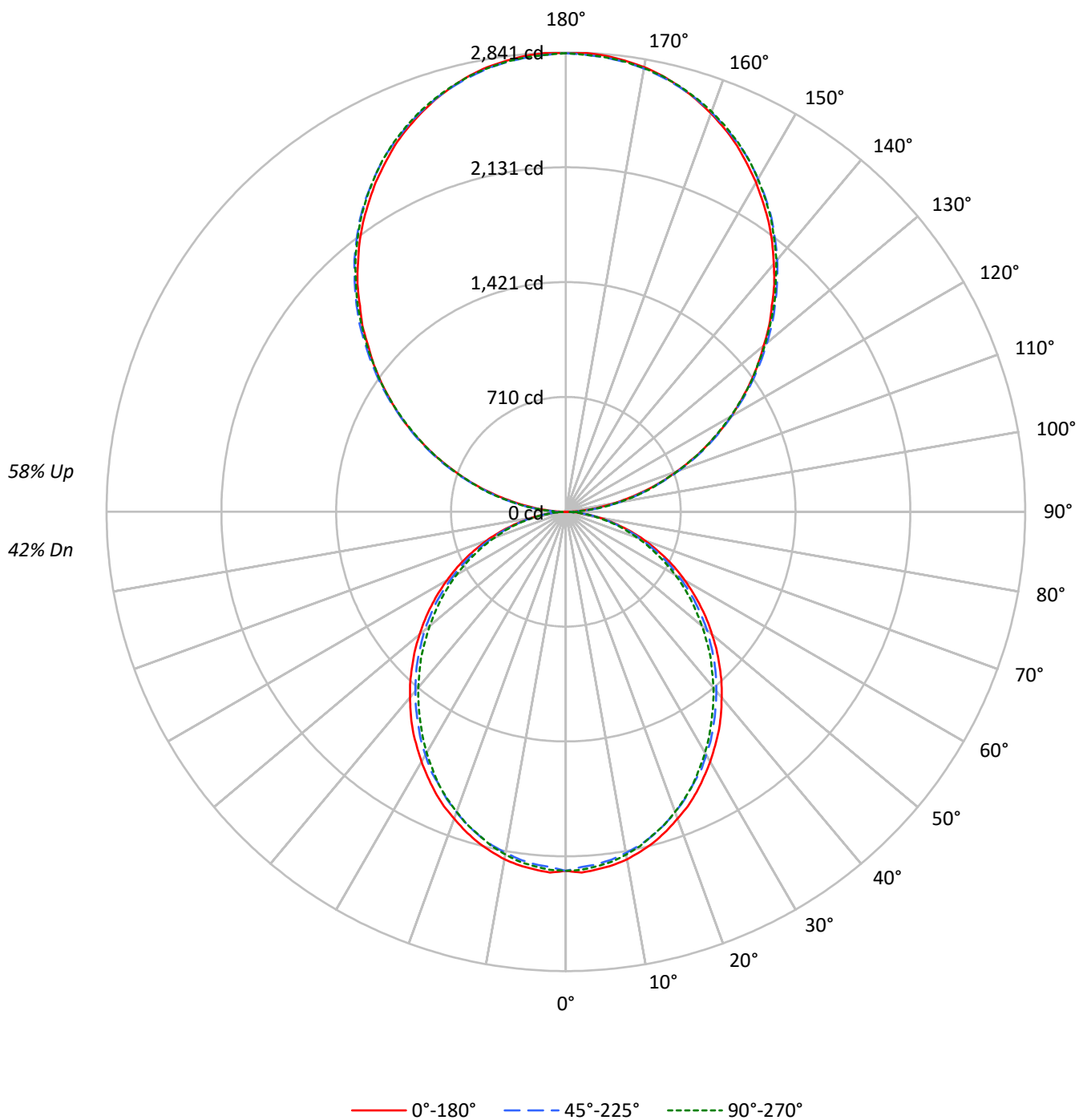
Lumens per Lamp: N/A
Luminaire Lumens: 13586.9 lumens
Efficiency: N/A
Efficacy: 94.3 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.92' x L: 3.92' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 144.1
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9967
Total Harmonic Distortion (THDi): 0.063
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P917632

CATALOG NUMBER: DFN2DIP-SQ4F0-070D110US930-FLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P917632

CATALOG NUMBER: DFN2DIP-SQ4F0-070D110US930-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	105	105	105	105	96	96	96	96	79	79	79	63	63	63	48	48	48
1	96	92	88	84	87	84	80	78	69	67	65	55	54	52	43	42	41
2	87	80	74	69	79	73	68	64	60	57	53	49	46	44	38	36	34
3	80	70	63	57	72	64	58	53	53	49	45	43	40	37	33	31	29
4	73	62	54	48	66	57	50	45	47	42	38	38	35	32	30	27	25
5	67	55	47	41	61	51	44	39	42	37	33	34	30	27	27	24	22
6	61	50	42	36	56	46	39	33	38	33	29	31	27	24	24	22	19
7	57	45	37	31	52	41	34	29	34	29	25	28	24	21	22	19	17
8	53	41	33	28	48	37	31	26	31	26	22	26	22	19	20	18	15
9	49	37	30	25	45	34	28	23	29	24	20	24	20	17	19	16	14
10	46	34	27	22	42	31	25	21	26	21	18	22	18	15	17	15	13

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1558	1558	1558
5°	1561	1537	1547
10°	1548	1516	1527
15°	1525	1492	1494
20°	1494	1457	1461
25°	1464	1416	1423
30°	1425	1378	1374
35°	1389	1333	1323
40°	1344	1287	1273
45°	1300	1241	1223
50°	1251	1193	1165
55°	1200	1138	1112
60°	1142	1072	1050
65°	1079	1004	978
70°	999	921	901
75°	888	821	830
80°	754	695	693
85°	545	475	466

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 2232 cd/sqm

TEST NUMBER: P917632

CATALOG NUMBER: DFN2DIP-SQ4F0-070D110US930-FLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	209.0	1.5
10°-20°	588.1	4.3
20°-30°	864.2	6.4
30°-40°	1003.7	7.4
40°-50°	1002.5	7.4
50°-60°	874.2	6.4
60°-70°	646.2	4.8
70°-80°	365.6	2.7
80°-90°	104.6	0.8
90°-100°	175.5	1.3
100°-110°	557.7	4.1
110°-120°	954.3	7.0
120°-130°	1255.1	9.2
130°-140°	1408.8	10.4
140°-150°	1381.5	10.2
150°-160°	1158.9	8.5
160°-170°	768.5	5.7
170°-180°	268.6	2.0
0°-30°	1661.3	12.2
0°-40°	2665.1	19.6
0°-60°	4541.7	33.4
0°-90°	5658.1	41.6
90°-120°	1687.5	12.4
90°-150°	5732.8	42.2
90°-180°	7929.0	58.4
0°-180°	13586.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2221	2221	2221	2221	2221	
5°	2221	2212	2189	2206	2202	211
15°	2114	2101	2073	2082	2071	595
25°	1913	1896	1860	1864	1860	880
35°	1651	1629	1595	1582	1572	1031
45°	1343	1328	1296	1273	1264	1037
55°	1016	1004	978	952	942	909
65°	686	673	651	632	621	678
75°	359	355	344	331	335	383
85°	88	85	83	77	75	98
90°	2	31	84	79	81	13
95°	125	149	153	153	149	139
105°	515	522	527	531	531	543
115°	958	971	967	965	958	947
125°	1393	1414	1407	1400	1397	1245
135°	1802	1828	1833	1831	1824	1393
145°	2187	2204	2218	2221	2211	1367
155°	2501	2508	2516	2528	2520	1151
165°	2721	2718	2718	2735	2723	768
175°	2831	2824	2819	2836	2822	269
180°	2836	2836	2836	2836	2836	

TEST NUMBER: P917632

CATALOG NUMBER: DFN2DIP-SQ4F0-070D110US930-FLLFLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2220.6	2220.6	2220.6	2220.6	2220.6
2.5°	2233.6	2222.9	2199.3	2220.6	2216.6
5°	2220.6	2212.3	2188.7	2205.7	2201.6
7.5°	2205.7	2193.0	2169.4	2186.7	2182.4
10°	2182.4	2167.4	2141.8	2158.8	2152.5
12.5°	2150.2	2137.5	2111.9	2122.5	2118.2
15°	2114.0	2101.3	2073.4	2082.0	2071.3
17.5°	2069.1	2056.4	2028.5	2039.2	2028.5
20°	2019.9	2007.3	1977.3	1983.7	1975.3
22.5°	1971.0	1951.7	1923.9	1923.9	1919.5
25°	1913.3	1896.2	1860.0	1864.1	1860.0
27.5°	1849.1	1834.2	1806.5	1800.2	1789.5
30°	1785.3	1768.0	1736.1	1729.7	1721.1
32.5°	1716.8	1704.1	1669.9	1657.0	1648.4
35°	1650.7	1629.4	1595.1	1582.2	1571.6
37.5°	1575.9	1556.6	1522.4	1507.5	1496.8
40°	1499.1	1481.9	1447.6	1428.6	1420.0
42.5°	1424.3	1407.1	1373.1	1351.6	1338.9
45°	1343.2	1328.3	1296.1	1272.8	1264.1
47.5°	1264.1	1249.2	1215.0	1191.4	1178.8
50°	1180.8	1170.1	1140.2	1110.4	1099.7
52.5°	1099.7	1084.8	1057.1	1033.6	1018.6
55°	1016.5	1003.6	978.0	952.4	941.8
57.5°	933.2	922.5	894.6	869.0	860.5
60°	849.8	841.4	811.5	788.0	781.6
62.5°	768.7	753.7	732.5	711.2	702.5
65°	685.6	672.6	651.3	632.1	621.4
67.5°	600.1	589.3	570.2	555.3	546.7
70°	521.1	512.5	493.2	478.3	469.9
72.5°	439.9	431.4	420.7	405.8	399.4
75°	358.6	354.6	343.6	331.0	335.3
77.5°	286.2	277.5	273.2	266.8	260.6
80°	213.6	211.4	207.1	200.7	196.4
82.5°	145.2	145.2	143.2	134.6	134.6
85°	87.5	85.4	83.4	76.8	74.8
87.5°	38.5	34.2	29.9	23.6	21.3
90°	2.5	30.8	83.8	78.7	81.2
92.5°	53.0	71.8	74.4	77.0	77.0
95°	124.8	148.8	153.0	153.0	148.8
97.5°	207.8	230.0	239.5	239.5	239.5
100°	303.5	323.2	330.0	330.0	327.5
102.5°	404.5	419.0	428.4	431.0	428.4
105°	514.8	521.6	526.8	531.0	531.0
107.5°	624.2	634.5	634.5	636.2	624.2
110°	730.3	744.0	744.0	744.0	737.1

TEST NUMBER: P917632

CATALOG NUMBER: DFN2DIP-SQ4F0-070D110US930-FLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	844.8	859.3	856.8	849.9	844.8
115°	957.7	971.3	967.1	964.6	957.7
117.5°	1069.8	1088.5	1076.5	1069.8	1062.9
120°	1182.6	1201.4	1182.6	1182.6	1174.9
122.5°	1285.2	1309.1	1297.1	1290.3	1285.2
125°	1392.9	1414.3	1407.4	1399.8	1397.2
127.5°	1498.1	1524.6	1515.2	1505.0	1498.1
130°	1596.4	1627.3	1622.9	1617.8	1608.4
132.5°	1706.7	1730.7	1732.4	1720.4	1713.6
135°	1801.6	1828.1	1833.3	1830.8	1823.9
137.5°	1907.7	1929.1	1933.3	1931.6	1921.4
140°	2000.9	2022.3	2034.3	2034.3	2024.9
142.5°	2096.7	2118.1	2124.9	2127.4	2118.1
145°	2187.3	2204.4	2218.1	2220.6	2211.3
147.5°	2268.6	2289.9	2300.2	2304.4	2295.1
150°	2352.4	2366.9	2376.3	2384.0	2376.3
152.5°	2426.7	2441.2	2453.2	2462.7	2453.2
155°	2501.2	2507.9	2515.7	2527.7	2519.9
157.5°	2565.3	2570.4	2574.6	2591.8	2579.8
160°	2622.6	2627.7	2630.2	2644.8	2634.6
162.5°	2675.6	2675.6	2678.2	2694.4	2682.4
165°	2720.9	2718.3	2718.3	2735.4	2723.4
167.5°	2761.9	2754.2	2754.2	2771.4	2759.4
170°	2792.7	2785.9	2783.3	2800.4	2785.9
172.5°	2814.1	2807.2	2804.7	2821.8	2807.2
175°	2831.2	2824.4	2819.2	2836.3	2821.8
177.5°	2840.6	2833.7	2828.6	2843.2	2828.6
180°	2836.3	2836.3	2836.3	2836.3	2836.3

TEST NUMBER: P917632

CATALOG NUMBER: DFN2DIP-SQ4F0-070D110US930-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	8.00	8.79	9.02	9.82	11.21	7.55	8.34	8.58	9.38	10.76
	3H	9.66	10.37	10.69	11.41	12.81	9.17	9.88	10.20	10.92	12.32
	4H	10.24	10.92	11.29	11.96	13.37	9.75	10.42	10.80	11.47	12.88
	6H	10.64	11.26	11.70	12.31	13.74	10.14	10.76	11.20	11.81	13.24
	8H	10.75	11.34	11.81	12.40	13.82	10.25	10.84	11.31	11.90	13.32
	12H	10.80	11.36	11.86	12.42	13.86	10.29	10.85	11.35	11.91	13.35
4H	2H	8.45	9.12	9.51	10.17	11.58	8.10	8.77	9.15	9.81	11.23
	3H	10.32	10.88	11.38	11.95	13.37	9.91	10.47	10.97	11.54	12.97
	4H	11.03	11.54	12.10	12.61	14.06	10.61	11.12	11.67	12.18	13.63
	6H	11.55	11.99	12.62	13.07	14.52	11.11	11.55	12.19	12.64	14.08
	8H	11.70	12.11	12.77	13.19	14.65	11.26	11.67	12.34	12.75	14.21
	12H	11.77	12.14	12.86	13.23	14.70	11.32	11.69	12.41	12.78	14.25
8H	4H	11.22	11.63	12.30	12.71	14.17	10.84	11.26	11.92	12.34	13.79
	6H	11.85	12.20	12.96	13.32	14.77	11.47	11.81	12.57	12.93	14.39
	8H	12.08	12.38	13.18	13.48	14.95	11.68	11.98	12.79	13.09	14.56
	12H	12.21	12.47	13.32	13.57	15.08	11.80	12.06	12.91	13.16	14.67
12H	4H	11.20	11.58	12.30	12.67	14.13	10.84	11.21	11.93	12.30	13.76
	6H	11.88	12.18	12.99	13.29	14.76	11.51	11.81	12.62	12.92	14.39
	8H	12.13	12.39	13.24	13.49	15.00	11.75	12.01	12.86	13.11	14.62

END OF REPORT