

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: P917614

Luminaire Tested: DFN2DIP-SQ4F0-070D060US930-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P917614
REPORT IS A COMBINATION OF REPORTS P900062 AND P896915
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ4F0-070D060US930-RLLFLL
Description: 4 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

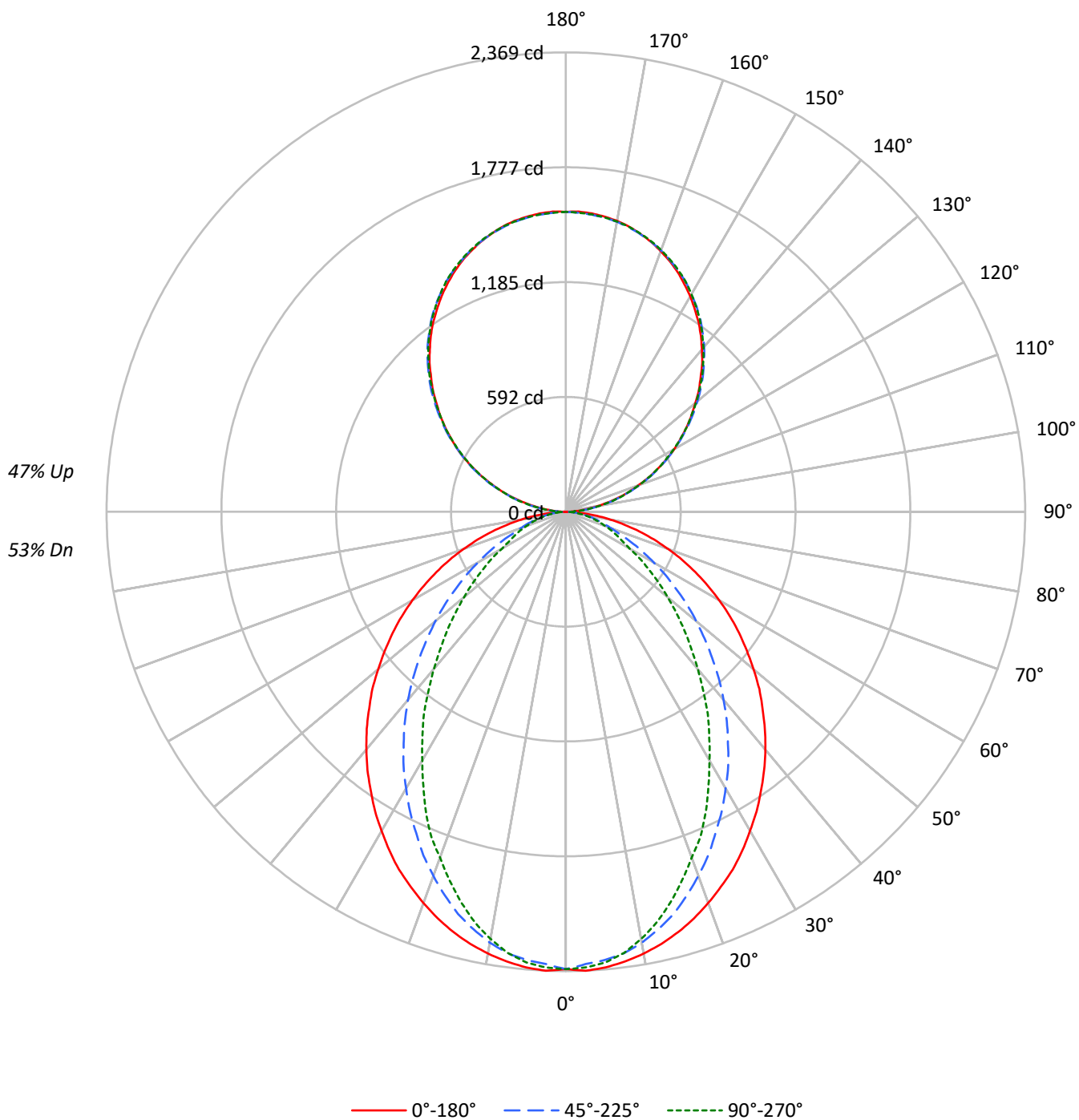
Lumens per Lamp: N/A
Luminaire Lumens: 9180.2 lumens
Efficiency: N/A
Efficacy: 86.2 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.92' x L: 3.92' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 106.5
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: P917614

CATALOG NUMBER: DFN2DIP-SQ4F0-070D060US930-RLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P917614

CATALOG NUMBER: DFN2DIP-SQ4F0-070D060US930-RLFL

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	108	108	108	108	100	100	100	100	85	85	85	71	71	71	59	59	59
1	99	95	91	88	92	88	85	82	75	73	71	64	62	60	53	52	51
2	91	83	77	72	84	78	72	68	67	63	59	56	54	51	47	45	43
3	83	74	67	61	77	69	62	57	59	54	51	50	47	44	42	40	38
4	76	66	58	52	70	61	54	49	53	48	44	45	41	38	38	35	33
5	70	59	51	45	65	55	48	43	48	42	38	41	37	33	34	31	29
6	65	53	45	39	60	50	42	37	43	38	33	37	33	30	31	28	26
7	60	48	40	35	56	45	38	33	39	34	30	34	30	26	29	26	23
8	56	44	36	31	52	41	34	29	36	30	27	31	27	24	27	23	21
9	52	40	33	28	48	38	31	26	33	28	24	29	24	21	25	21	19
10	49	37	30	25	45	35	28	24	31	25	22	27	22	19	23	20	17

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1655	1655	1655
5°	1658	1629	1640
10°	1641	1597	1587
15°	1619	1545	1505
20°	1589	1473	1404
25°	1558	1391	1306
30°	1517	1308	1183
35°	1477	1218	1074
40°	1436	1125	949
45°	1388	1022	837
50°	1339	918	726
55°	1287	807	620
60°	1228	691	511
65°	1159	572	460
70°	1076	462	417
75°	972	408	381
80°	821	343	332
85°	571	231	252

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1388 cd/sqm

TEST NUMBER: P917614

CATALOG NUMBER: DFN2DIP-SQ4F0-070D060US930-RLFL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	221.1	2.4
10°-20°	606.9	6.6
20°-30°	852.0	9.3
30°-40°	928.8	10.1
40°-50°	853.6	9.3
50°-60°	670.4	7.3
60°-70°	436.4	4.8
70°-80°	224.6	2.4
80°-90°	61.7	0.7
90°-100°	95.7	1.0
100°-110°	304.2	3.3
110°-120°	520.6	5.7
120°-130°	684.6	7.5
130°-140°	768.4	8.4
140°-150°	753.5	8.2
150°-160°	632.1	6.9
160°-170°	419.2	4.6
170°-180°	146.5	1.6
0°-30°	1679.9	18.3
0°-40°	2608.7	28.4
0°-60°	4132.7	45.0
0°-90°	4855.4	52.9
90°-120°	920.5	10.0
90°-150°	3127.0	34.1
90°-180°	4325.0	47.1
0°-180°	9180.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2359	2359	2359	2359	2359	
5°	2359	2348	2320	2340	2333	224
15°	2244	2220	2147	2107	2086	632
25°	2036	1968	1827	1740	1708	937
35°	1755	1646	1458	1324	1276	1098
45°	1434	1291	1067	916	864	1108
55°	1091	924	694	566	525	975
65°	736	564	371	299	292	730
75°	393	243	171	156	154	415
85°	92	47	40	40	40	105
90°	1	17	46	43	44	9
95°	68	81	84	84	81	76
105°	281	284	287	290	290	296
115°	522	530	528	526	522	517
125°	760	771	768	764	762	679
135°	983	997	1000	999	995	760
145°	1193	1202	1210	1211	1206	745
155°	1364	1368	1372	1379	1374	628
165°	1484	1483	1483	1492	1486	419
175°	1544	1541	1538	1547	1539	147
180°	1547	1547	1547	1547	1547	

TEST NUMBER: P917614

CATALOG NUMBER: DFN2DIP-SQ4F0-070D060US930-RLFL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2358.7	2358.7	2358.7	2358.7	2358.7
2.5°	2369.3	2358.7	2335.2	2356.7	2352.4
5°	2358.7	2348.1	2320.3	2339.5	2333.1
7.5°	2339.5	2326.8	2296.9	2305.3	2294.7
10°	2313.9	2299.0	2256.3	2249.8	2237.1
12.5°	2281.9	2262.7	2205.0	2192.3	2168.7
15°	2243.5	2219.9	2147.4	2106.9	2085.6
17.5°	2198.6	2164.5	2074.8	2027.8	1993.6
20°	2147.4	2104.6	1998.0	1944.7	1897.6
22.5°	2092.0	2042.8	1918.9	1846.4	1814.5
25°	2036.5	1968.0	1827.2	1739.8	1707.6
27.5°	1970.3	1897.6	1741.8	1641.5	1592.4
30°	1899.9	1818.6	1647.8	1539.1	1481.4
32.5°	1831.5	1733.2	1558.4	1430.2	1376.7
35°	1754.7	1645.8	1458.1	1323.6	1276.4
37.5°	1680.0	1562.4	1364.1	1216.6	1163.4
40°	1600.9	1473.0	1265.8	1114.3	1058.7
42.5°	1519.9	1383.3	1167.7	1009.6	956.4
45°	1434.5	1291.4	1067.4	915.7	864.5
47.5°	1353.4	1201.9	971.3	819.6	772.7
50°	1263.7	1112.2	877.3	729.9	685.3
52.5°	1176.1	1015.9	787.7	646.8	606.3
55°	1090.7	924.2	693.7	565.7	525.2
57.5°	1003.3	832.5	610.6	491.0	456.8
60°	913.6	742.8	522.9	414.3	380.0
62.5°	826.1	655.4	448.2	345.8	328.8
65°	736.5	563.5	371.4	299.0	292.4
67.5°	651.1	478.1	299.0	262.4	256.2
70°	561.4	394.9	247.5	226.2	217.6
72.5°	476.1	318.0	207.0	190.0	185.7
75°	392.7	243.2	170.7	155.8	153.8
77.5°	309.6	172.8	134.5	125.9	121.6
80°	232.6	123.8	102.4	94.0	94.0
82.5°	162.2	83.3	70.4	66.1	66.1
85°	91.7	46.9	40.5	40.5	40.5
87.5°	34.2	17.0	17.0	14.9	14.9
90°	1.4	16.8	45.7	42.9	44.3
92.5°	28.9	39.2	40.6	42.0	42.0
95°	68.1	81.1	83.5	83.5	81.1
97.5°	113.3	125.5	130.6	130.6	130.6
100°	165.6	176.3	180.0	180.0	178.6
102.5°	220.6	228.5	233.7	235.1	233.7
105°	280.8	284.5	287.3	289.7	289.7
107.5°	340.5	346.1	346.1	347.0	340.5
110°	398.4	405.8	405.8	405.8	402.0

TEST NUMBER: P917614

CATALOG NUMBER: DFN2DIP-SQ4F0-070D060US930-RLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	460.8	468.7	467.3	463.6	460.8
115°	522.4	529.9	527.5	526.1	522.4
117.5°	583.5	593.8	587.2	583.5	579.8
120°	645.1	655.3	645.1	645.1	640.8
122.5°	701.0	714.0	707.5	703.8	701.0
125°	759.8	771.4	767.7	763.5	762.1
127.5°	817.2	831.6	826.5	820.9	817.2
130°	870.8	887.6	885.3	882.5	877.3
132.5°	931.0	944.0	944.9	938.4	934.7
135°	982.8	997.2	1000.0	998.6	994.8
137.5°	1040.6	1052.2	1054.6	1053.6	1048.1
140°	1091.4	1103.1	1109.6	1109.6	1104.5
142.5°	1143.6	1155.3	1159.0	1160.4	1155.3
145°	1193.1	1202.4	1209.9	1211.3	1206.2
147.5°	1237.4	1249.0	1254.7	1256.9	1251.8
150°	1283.1	1291.0	1296.2	1300.3	1296.2
152.5°	1323.6	1331.6	1338.1	1343.3	1338.1
155°	1364.2	1368.0	1372.1	1378.8	1374.5
157.5°	1399.2	1402.1	1404.4	1413.7	1407.2
160°	1430.5	1433.3	1434.7	1442.6	1437.0
162.5°	1459.4	1459.4	1460.8	1469.7	1463.1
165°	1484.1	1482.7	1482.7	1492.1	1485.6
167.5°	1506.5	1502.4	1502.4	1511.6	1505.1
170°	1523.3	1519.6	1518.2	1527.5	1519.6
172.5°	1535.0	1531.2	1529.8	1539.1	1531.2
175°	1544.3	1540.6	1537.7	1547.1	1539.1
177.5°	1549.4	1545.7	1542.9	1550.8	1542.9
180°	1547.1	1547.1	1547.1	1547.1	1547.1

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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	9.17	10.03	10.11	10.98	12.21	5.14	5.99	6.07	6.94	8.17
	3H	10.86	11.62	11.81	12.58	13.84	6.33	7.09	7.28	8.05	9.31
	4H	11.47	12.19	12.44	13.16	14.42	6.78	7.50	7.74	8.47	9.73
	6H	11.90	12.56	12.87	13.53	14.81	7.10	7.77	8.08	8.74	10.01
	8H	12.03	12.66	13.01	13.65	14.92	7.19	7.82	8.18	8.81	10.09
	12H	12.09	12.69	13.08	13.67	14.97	7.24	7.84	8.22	8.82	10.12
4H	2H	9.20	9.92	10.17	10.88	12.15	5.74	6.46	6.71	7.42	8.69
	3H	11.03	11.63	12.01	12.63	13.90	7.09	7.69	8.07	8.68	9.96
	4H	11.73	12.28	12.72	13.26	14.57	7.64	8.19	8.63	9.17	10.48
	6H	12.25	12.72	13.25	13.73	15.03	8.06	8.53	9.06	9.54	10.84
	8H	12.43	12.87	13.43	13.87	15.19	8.19	8.63	9.19	9.63	10.95
	12H	12.53	12.92	13.55	13.94	15.26	8.26	8.65	9.28	9.67	10.99
8H	4H	11.70	12.14	12.70	13.14	14.46	7.92	8.36	8.93	9.37	10.68
	6H	12.27	12.63	13.30	13.68	14.99	8.44	8.81	9.47	9.85	11.17
	8H	12.49	12.81	13.52	13.84	15.17	8.64	8.96	9.67	9.99	11.32
	12H	12.63	12.91	13.67	13.94	15.32	8.76	9.04	9.79	10.07	11.44
12H	4H	11.65	12.05	12.67	13.07	14.39	7.93	8.33	8.95	9.35	10.67
	6H	12.25	12.57	13.28	13.60	14.93	8.49	8.81	9.53	9.85	11.18
	8H	12.47	12.75	13.51	13.78	15.15	8.71	8.99	9.74	10.02	11.39