

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: P914887

Luminaire Tested: DFN2DIP-SQ4F0-070D060US927-RLLONL

Issue Date: 11/21/2024

**Test Information**

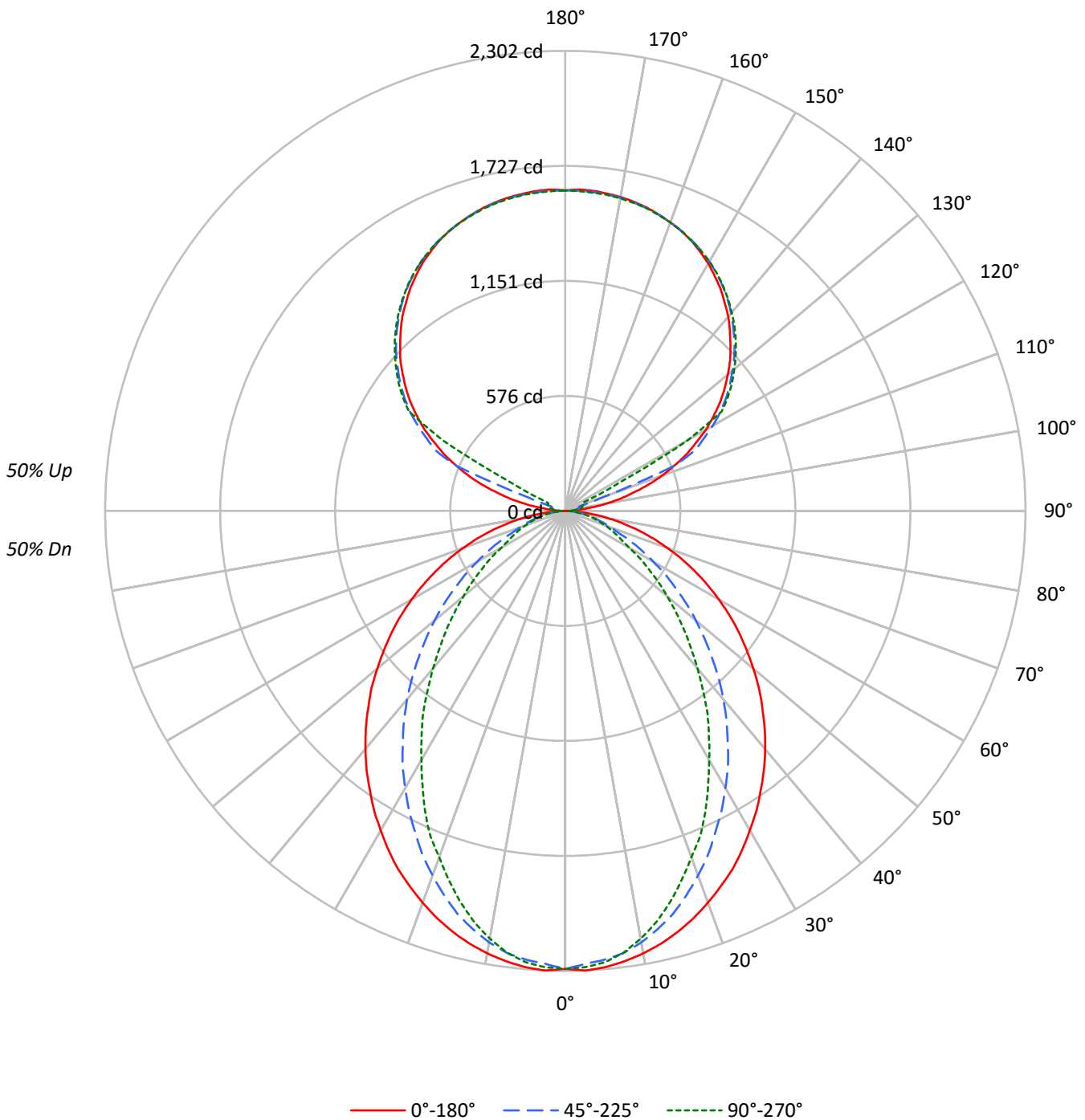
Test Method: LM-79-2019  
Report Number: P914887  
REPORT IS A COMBINATION OF REPORTS P901582 AND P898471  
Test Lab: INNOVATION CENTER  
Issue Date: 11/21/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: DFN2DIP-SQ4F0-070D060US927-RLLONL  
Description: 4 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens  
Light Source: -  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 9419.0 lumens  
Efficiency: N/A  
Efficacy: 88.4 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: P914887  
CATALOG NUMBER: DFN2DIP-SQ4F0-070D060US927-RLLONL

### Luminous Intensity Polar Plot





TEST NUMBER: P914887

CATALOG NUMBER: DFN2DIP-SQ4F0-070D060US927-RLLONL

**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20				20				20				20				20				
RC	80				70				50				30				10			0	
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR																					
0	107	107	107	107	99	99	99	99	83	83	83	69	69	69	56	56	56	56	56	56	50
1	98	94	90	87	91	87	84	81	74	72	69	62	60	59	50	49	48	48	48	48	43
2	90	83	77	72	83	77	72	67	65	62	58	55	52	50	45	43	41	41	41	41	37
3	82	73	66	60	76	68	62	57	58	53	50	49	45	43	40	38	36	36	36	36	32
4	76	65	57	52	70	60	54	49	52	47	43	44	40	37	36	34	31	31	31	31	28
5	70	58	50	45	64	54	47	42	47	41	37	40	35	32	33	30	28	28	28	28	24
6	64	52	45	39	59	49	42	37	42	37	33	36	32	29	30	27	25	25	25	25	22
7	59	47	40	34	55	44	37	32	38	33	29	33	29	25	28	24	22	22	22	22	19
8	55	43	36	30	51	40	34	29	35	30	26	30	26	23	25	22	20	20	20	20	18
9	52	40	32	27	48	37	30	26	32	27	23	28	24	21	24	20	18	18	18	18	16
10	48	36	29	25	45	34	28	23	30	25	21	26	22	19	22	19	17	17	17	17	15

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	1608	1608	1608
5°	1611	1583	1593
10°	1595	1552	1542
15°	1573	1501	1462
20°	1544	1431	1364
25°	1514	1352	1269
30°	1474	1271	1149
35°	1435	1184	1044
40°	1395	1093	922
45°	1349	993	813
50°	1301	892	705
55°	1251	784	602
60°	1193	671	496
65°	1126	556	447
70°	1046	449	405
75°	945	396	370
80°	798	334	322
85°	555	225	246

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 1349 cd/sqm



TEST NUMBER: P914887

CATALOG NUMBER: DFN2DIP-SQ4F0-070D060US927-RLLONL

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	214.8	2.3
10°-20°	589.7	6.3
20°-30°	827.9	8.8
30°-40°	902.4	9.6
40°-50°	829.4	8.8
50°-60°	651.4	6.9
60°-70°	424.0	4.5
70°-80°	218.2	2.3
80°-90°	58.5	0.6
90°-100°	52.9	0.6
100°-110°	197.2	2.1
110°-120°	523.0	5.6
120°-130°	867.4	9.2
130°-140°	921.3	9.8
140°-150°	856.3	9.1
150°-160°	688.4	7.3
160°-170°	443.6	4.7
170°-180°	152.7	1.6
0°-30°	1632.3	17.3
0°-40°	2534.7	26.9
0°-60°	4015.5	42.6
0°-90°	4716.3	50.1
90°-120°	773.0	8.2
90°-150°	3418.0	36.3
90°-180°	4703.0	49.9
0°-180°	9419.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2292	2292	2292	2292	2292	
5°	2292	2282	2254	2273	2267	217
15°	2180	2157	2086	2047	2026	614
25°	1979	1912	1775	1690	1659	910
35°	1705	1599	1417	1286	1240	1067
45°	1394	1255	1037	890	840	1076
55°	1060	898	674	550	510	947
65°	716	548	361	290	284	709
75°	382	236	166	151	149	404
85°	89	46	39	39	39	102
90°	1	14	23	29	31	9
95°	75	37	45	51	50	89
105°	353	388	71	84	88	377
115°	667	687	716	179	95	657
125°	944	959	981	989	992	842
135°	1168	1186	1197	1208	1206	902
145°	1355	1353	1373	1381	1376	847
155°	1492	1481	1495	1502	1493	687
165°	1572	1565	1568	1576	1568	444
175°	1608	1599	1602	1610	1598	153
180°	1604	1604	1604	1604	1604	



TEST NUMBER: P914887

CATALOG NUMBER: DFN2DIP-SQ4F0-070D060US927-RLONL

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2291.9	2291.9	2291.9	2291.9	2291.9
2.5°	2302.2	2291.9	2269.0	2289.9	2285.7
5°	2291.9	2281.5	2254.5	2273.2	2267.0
7.5°	2273.2	2260.8	2231.8	2239.9	2229.6
10°	2248.3	2233.8	2192.4	2186.0	2173.7
12.5°	2217.2	2198.5	2142.5	2130.1	2107.2
15°	2179.8	2157.0	2086.5	2047.2	2026.5
17.5°	2136.3	2103.1	2015.9	1970.3	1937.1
20°	2086.5	2044.9	1941.3	1889.6	1843.8
22.5°	2032.7	1984.9	1864.5	1794.1	1763.1
25°	1978.7	1912.2	1775.4	1690.4	1659.2
27.5°	1914.5	1843.8	1692.4	1595.0	1547.2
30°	1846.0	1767.0	1601.1	1495.5	1439.4
32.5°	1779.6	1684.1	1514.2	1389.6	1337.7
35°	1704.9	1599.1	1416.7	1286.0	1240.2
37.5°	1632.4	1518.1	1325.4	1182.1	1130.4
40°	1555.5	1431.2	1229.9	1082.7	1028.7
42.5°	1476.8	1344.1	1134.6	981.0	929.3
45°	1393.8	1254.7	1037.1	889.7	839.9
47.5°	1315.0	1167.8	943.8	796.4	750.8
50°	1227.9	1080.7	852.5	709.2	665.9
52.5°	1142.7	987.1	765.3	628.4	589.1
55°	1059.8	898.0	674.0	549.7	510.3
57.5°	974.9	808.9	593.3	477.1	443.9
60°	887.7	721.8	508.1	402.5	369.2
62.5°	802.7	636.8	435.5	336.0	319.5
65°	715.6	547.5	360.9	290.5	284.1
67.5°	632.6	464.5	290.5	255.0	248.9
70°	545.5	383.7	240.5	219.8	211.4
72.5°	462.6	309.0	201.1	184.7	180.5
75°	381.6	236.3	165.9	151.4	149.4
77.5°	300.8	167.9	130.7	122.3	118.2
80°	226.0	120.3	99.5	91.3	91.3
82.5°	157.6	81.0	68.4	64.2	64.2
85°	89.1	45.6	39.4	39.4	39.4
87.5°	33.2	16.5	16.5	14.5	14.5
90°	1.1	13.9	23.1	29.1	31.3
92.5°	29.1	24.4	27.8	30.2	31.3
95°	75.4	37.1	45.2	51.2	49.9
97.5°	135.8	40.6	59.1	62.7	63.8
100°	205.5	46.4	66.1	75.4	77.7
102.5°	282.0	279.8	68.5	81.2	84.8
105°	352.8	387.7	70.8	83.5	88.2
107.5°	435.3	464.2	73.2	85.9	90.5
110°	514.3	538.5	203.2	87.1	91.7



TEST NUMBER: P914887

CATALOG NUMBER: DFN2DIP-SQ4F0-070D060US927-RLLONL

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	588.5	609.3	589.6	89.3	92.9
115°	667.4	687.1	716.2	178.8	95.2
117.5°	735.9	759.1	778.9	612.8	308.7
120°	812.5	829.9	850.9	864.7	708.1
122.5°	877.4	896.0	919.3	926.2	927.5
125°	943.6	958.8	980.8	989.0	992.4
127.5°	1004.0	1020.3	1037.8	1049.3	1050.4
130°	1060.9	1079.5	1092.2	1105.0	1103.9
132.5°	1119.0	1134.1	1146.8	1157.2	1156.1
135°	1167.8	1186.4	1196.7	1208.4	1206.0
137.5°	1218.7	1232.6	1244.4	1255.9	1252.5
140°	1268.6	1278.0	1290.7	1301.2	1295.4
142.5°	1310.5	1318.7	1333.7	1342.9	1337.1
145°	1354.6	1353.4	1373.1	1381.2	1375.5
147.5°	1392.8	1389.3	1409.1	1414.8	1410.3
150°	1430.0	1421.9	1440.5	1447.4	1441.6
152.5°	1461.3	1452.1	1469.4	1476.5	1468.3
155°	1491.5	1481.1	1495.1	1502.0	1492.7
157.5°	1515.9	1506.6	1517.1	1525.3	1515.9
160°	1536.8	1529.8	1536.8	1543.7	1535.6
162.5°	1555.3	1548.4	1554.2	1562.3	1551.9
165°	1571.6	1564.7	1568.1	1576.3	1568.1
167.5°	1584.4	1577.4	1581.0	1589.1	1578.6
170°	1594.9	1587.8	1590.2	1598.3	1587.8
172.5°	1601.8	1594.9	1597.2	1605.4	1594.9
175°	1607.6	1599.4	1601.8	1609.9	1598.3
177.5°	1609.9	1601.8	1603.0	1611.1	1600.7
180°	1604.1	1604.1	1604.1	1604.1	1604.1



TEST NUMBER: P914887  
 CATALOG NUMBER: DFN2DIP-SQ4F0-070D060US927-RLONL

**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	8.82	9.65	9.78	10.62	11.89	4.78	5.61	5.74	6.58	7.86
	3H	10.50	11.24	11.47	12.22	13.52	5.97	6.71	6.94	7.69	8.99
	4H	11.11	11.81	12.10	12.80	14.10	6.42	7.12	7.41	8.11	9.41
	6H	11.54	12.18	12.53	13.17	14.49	6.74	7.39	7.74	8.38	9.69
	8H	11.66	12.28	12.67	13.29	14.60	6.83	7.44	7.84	8.45	9.77
	12H	11.73	12.31	12.74	13.31	14.65	6.87	7.46	7.88	8.46	9.80
4H	2H	8.84	9.54	9.83	10.52	11.83	5.38	6.08	6.37	7.06	8.37
	3H	10.67	11.25	11.67	12.27	13.59	6.73	7.31	7.73	8.33	9.64
	4H	11.36	11.90	12.38	12.91	14.25	7.28	7.81	8.29	8.82	10.16
	6H	11.88	12.34	12.91	13.37	14.71	7.70	8.15	8.72	9.19	10.52
	8H	12.06	12.49	13.09	13.51	14.87	7.82	8.25	8.85	9.28	10.63
	12H	12.16	12.55	13.20	13.59	14.94	7.89	8.28	8.93	9.32	10.67
8H	4H	11.33	11.76	12.36	12.79	14.14	7.56	7.99	8.58	9.01	10.36
	6H	11.90	12.26	12.95	13.32	14.67	8.08	8.43	9.12	9.50	10.85
	8H	12.12	12.43	13.18	13.49	14.86	8.27	8.58	9.32	9.63	11.00
	12H	12.27	12.54	13.32	13.58	15.00	8.39	8.66	9.45	9.71	11.12
12H	4H	11.28	11.67	12.33	12.71	14.07	7.56	7.95	8.60	8.99	10.35
	6H	11.88	12.19	12.93	13.24	14.61	8.13	8.44	9.18	9.49	10.86
	8H	12.10	12.38	13.16	13.42	14.83	8.34	8.61	9.40	9.66	11.07