

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: P914419

Luminaire Tested: DFN2DIP-SQ2F0-040D060US927-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P914419
REPORT IS A COMBINATION OF REPORTS P901330 AND P898215
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ2F0-040D060US927-RLLONL
Description: 2 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

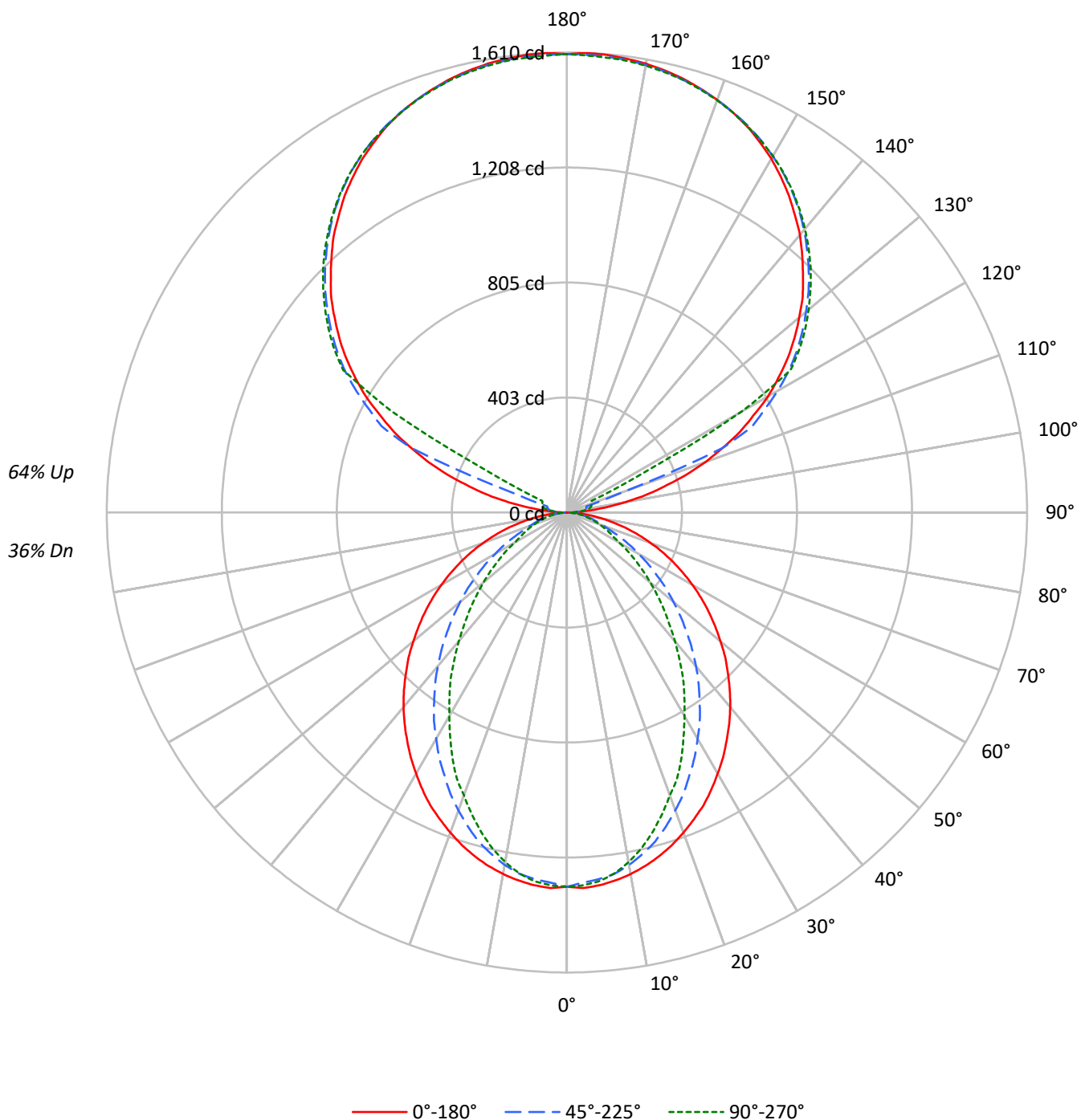
Lumens per Lamp: N/A
Luminaire Lumens: 7398.9 lumens
Efficiency: N/A
Efficacy: 93.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.21' x L: 2.21' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 79.6
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9952
Total Harmonic Distortion (THDi): 0.069
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P914419

CATALOG NUMBER: DFN2DIP-SQ2F0-040D060US927-RLLONL

Luminous Intensity Polar Plot



TEST NUMBER: P914419

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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	104	104	104	104	94	94	94	94	76	76	76	59	59	59	44	44	44
1	95	91	87	84	86	83	80	77	67	65	63	52	51	50	39	38	38
2	87	80	74	69	78	73	68	63	59	56	53	46	44	42	35	33	32
3	79	70	63	58	72	64	58	53	52	48	45	41	38	36	31	29	28
4	73	63	55	49	66	57	51	46	47	42	38	37	34	31	28	26	24
5	67	56	48	42	60	51	44	39	42	37	33	33	30	27	25	23	21
6	62	50	42	37	56	46	39	34	38	33	29	30	27	24	23	21	19
7	57	45	38	32	52	41	35	30	34	29	26	28	24	21	21	19	17
8	53	41	34	29	48	38	31	27	31	26	23	25	22	19	20	17	15
9	49	37	30	25	45	34	28	24	29	24	20	23	20	17	18	16	14
10	46	34	27	23	42	32	25	21	26	22	18	22	18	15	17	14	13

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2880	2880	2880
5°	2879	2828	2848
10°	2846	2766	2751
15°	2802	2669	2605
20°	2745	2537	2426
25°	2687	2390	2253
30°	2610	2240	2035
35°	2535	2080	1844
40°	2458	1915	1626
45°	2370	1732	1428
50°	2277	1548	1235
55°	2181	1353	1050
60°	2069	1149	861
65°	1940	944	770
70°	1783	751	691
75°	1585	650	621
80°	1301	528	526
85°	847	328	374

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2370 cd/sqm

TEST NUMBER: P914419

CATALOG NUMBER: DFN2DIP-SQ2F0-040D060US927-RLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	122.7	1.7
10°-20°	336.9	4.6
20°-30°	473.1	6.4
30°-40°	515.7	7.0
40°-50°	473.9	6.4
50°-60°	372.2	5.0
60°-70°	242.3	3.3
70°-80°	124.7	1.7
80°-90°	34.7	0.5
90°-100°	52.9	0.7
100°-110°	197.2	2.7
110°-120°	523.0	7.1
120°-130°	867.4	11.7
130°-140°	921.3	12.5
140°-150°	856.3	11.6
150°-160°	688.4	9.3
160°-170°	443.6	6.0
170°-180°	152.7	2.1
0°-30°	932.7	12.6
0°-40°	1448.4	19.6
0°-60°	2294.6	31.0
0°-90°	2696.2	36.4
90°-120°	773.0	10.4
90°-150°	3418.0	46.2
90°-180°	4703.0	63.6
0°-180°	7398.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1310	1310	1310	1310	1310	
5°	1310	1304	1288	1299	1296	124
15°	1246	1233	1192	1170	1158	351
25°	1131	1093	1014	966	948	520
35°	974	914	810	735	709	610
45°	796	717	593	508	480	615
55°	606	513	385	314	292	541
65°	409	313	206	166	162	405
75°	218	135	95	86	85	231
85°	51	26	22	22	22	58
90°	1	14	23	29	31	7
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: P914419

CATALOG NUMBER: DFN2DIP-SQ2F0-040D060US927-RLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1309.6	1309.6	1309.6	1309.6	1309.6
2.5°	1315.6	1309.6	1296.6	1308.5	1306.1
5°	1309.6	1303.7	1288.2	1298.9	1295.5
7.5°	1298.9	1291.9	1275.3	1279.9	1274.1
10°	1284.8	1276.4	1252.8	1249.1	1242.1
12.5°	1267.0	1256.3	1224.2	1217.2	1204.1
15°	1245.6	1232.6	1192.3	1169.8	1158.0
17.5°	1220.8	1201.7	1151.9	1125.9	1106.9
20°	1192.3	1168.5	1109.3	1079.7	1053.6
22.5°	1161.5	1134.2	1065.4	1025.2	1007.5
25°	1130.7	1092.7	1014.5	966.0	948.1
27.5°	1094.0	1053.6	967.1	911.4	884.1
30°	1054.9	1009.7	914.9	854.5	822.5
32.5°	1016.9	962.3	865.2	794.1	764.4
35°	974.3	913.8	809.5	734.8	708.7
37.5°	932.8	867.5	757.3	675.5	645.9
40°	888.9	817.8	702.8	618.7	587.9
42.5°	843.8	768.0	648.3	560.5	531.0
45°	796.5	717.0	592.6	508.4	480.0
47.5°	751.5	667.3	539.3	455.1	429.0
50°	701.6	617.5	487.1	405.3	380.5
52.5°	653.0	564.1	437.4	359.1	336.6
55°	605.6	513.2	385.2	314.1	291.6
57.5°	557.1	462.2	339.0	272.6	253.7
60°	507.2	412.4	290.3	230.0	211.0
62.5°	458.8	363.9	248.8	192.0	182.6
65°	408.9	312.8	206.2	166.0	162.3
67.5°	361.6	265.5	166.0	145.8	142.2
70°	311.7	219.3	137.4	125.6	120.8
72.5°	264.4	176.6	114.9	105.5	103.1
75°	218.0	135.1	94.8	86.5	85.4
77.5°	171.9	95.9	74.7	69.9	67.5
80°	129.1	68.8	56.8	52.2	52.2
82.5°	90.1	46.3	39.1	36.7	36.7
85°	50.9	26.1	22.5	22.5	22.5
87.5°	19.0	9.4	9.4	8.3	8.3
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: P914419

CATALOG NUMBER: DFN2DIP-SQ2F0-040D060US927-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

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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	9.29	10.02	10.36	11.09	12.55	5.25	5.98	6.32	7.05	8.51
	3H	10.94	11.60	12.02	12.67	14.15	6.42	7.07	7.50	8.15	9.62
	4H	11.53	12.15	12.62	13.23	14.71	6.85	7.47	7.94	8.55	10.03
	6H	11.93	12.50	13.03	13.59	15.08	7.15	7.72	8.25	8.80	10.29
	8H	12.05	12.59	13.15	13.69	15.17	7.23	7.77	8.33	8.87	10.35
	12H	12.10	12.61	13.21	13.71	15.21	7.26	7.77	8.37	8.86	10.37
4H	2H	9.29	9.91	10.39	10.99	12.47	5.83	6.44	6.92	7.52	9.00
	3H	11.09	11.61	12.20	12.71	14.20	7.14	7.66	8.25	8.77	10.26
	4H	11.76	12.24	12.87	13.33	14.84	7.67	8.15	8.78	9.24	10.75
	6H	12.25	12.66	13.37	13.78	15.28	8.07	8.47	9.18	9.59	11.10
	8H	12.42	12.79	13.53	13.91	15.43	8.18	8.56	9.30	9.67	11.19
	12H	12.50	12.84	13.63	13.96	15.49	8.23	8.58	9.37	9.70	11.23
8H	4H	11.72	12.10	12.84	13.21	14.73	7.93	8.31	9.05	9.42	10.94
	6H	12.26	12.57	13.40	13.73	15.24	8.42	8.74	9.56	9.89	11.41
	8H	12.46	12.74	13.61	13.87	15.41	8.60	8.87	9.74	10.01	11.55
	12H	12.58	12.82	13.73	13.95	15.53	8.70	8.94	9.85	10.07	11.64
12H	4H	11.67	12.01	12.80	13.13	14.66	7.93	8.27	9.06	9.40	10.92
	6H	12.23	12.51	13.38	13.64	15.18	8.47	8.74	9.61	9.87	11.41
	8H	12.44	12.68	13.58	13.81	15.38	8.66	8.90	9.80	10.03	11.60