

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: P914995

Luminaire Tested: DFN2DIP-SQ4F0-100D060US927-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P914995
REPORT IS A COMBINATION OF REPORTS P901588 AND P898471
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ4F0-100D060US927-RLLONL
Description: 4 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

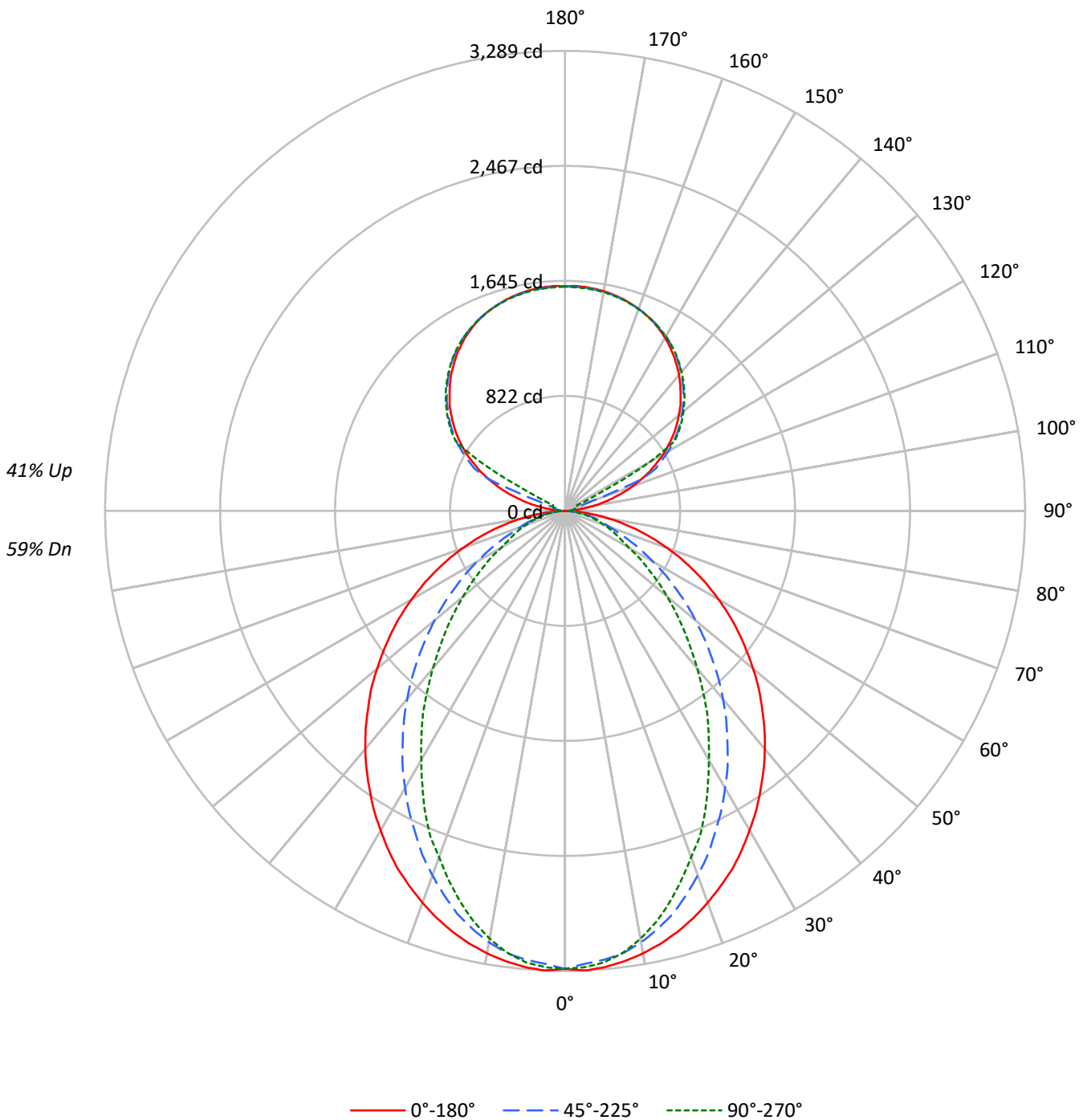
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 11439.1 lumens
Efficiency: N/A
Efficacy: 83.0 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): 137.9
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9968
Total Harmonic Distortion (THDi): 0.064
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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Luminous Intensity Polar Plot





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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	109	109	109	109	102	102	102	102	88	88	88	76	76	76	64	64	64	59			
1	100	96	92	89	94	90	87	84	78	76	74	68	66	64	58	57	55	51			
2	92	85	79	74	86	79	74	70	69	65	62	60	57	55	51	49	48	43			
3	84	75	68	62	78	70	64	59	62	57	53	54	50	47	46	43	41	37			
4	77	67	59	53	72	63	56	51	55	50	46	48	44	41	42	39	36	33			
5	71	60	52	46	66	56	49	44	50	44	40	44	39	36	38	34	32	29			
6	66	54	46	40	61	51	44	38	45	39	35	40	35	32	35	31	28	26			
7	61	49	41	36	57	46	39	34	41	35	31	36	32	28	32	28	25	23			
8	57	45	37	32	53	42	35	30	38	32	28	33	29	25	29	26	23	21			
9	53	41	34	29	50	39	32	27	35	29	25	31	26	23	27	23	21	19			
10	50	38	31	26	46	36	29	25	32	27	23	29	24	21	25	22	19	17			

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2297	2297	2297
5°	2301	2261	2276
10°	2278	2217	2203
15°	2247	2145	2089
20°	2205	2044	1949
25°	2163	1931	1814
30°	2106	1815	1642
35°	2050	1691	1491
40°	1993	1562	1318
45°	1927	1419	1161
50°	1858	1275	1008
55°	1787	1120	860
60°	1704	959	709
65°	1609	795	639
70°	1494	641	579
75°	1349	566	528
80°	1139	477	461
85°	793	320	350

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 1927 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	306.9	2.7
10°-20°	842.4	7.4
20°-30°	1182.6	10.3
30°-40°	1289.2	11.3
40°-50°	1184.9	10.4
50°-60°	930.5	8.1
60°-70°	605.7	5.3
70°-80°	311.8	2.7
80°-90°	82.4	0.7
90°-100°	52.9	0.5
100°-110°	197.2	1.7
110°-120°	523.0	4.6
120°-130°	867.4	7.6
130°-140°	921.3	8.1
140°-150°	856.3	7.5
150°-160°	688.4	6.0
160°-170°	443.6	3.9
170°-180°	152.7	1.3
0°-30°	2331.9	20.4
0°-40°	3621.0	31.7
0°-60°	5736.5	50.1
0°-90°	6736.4	58.9
90°-120°	773.0	6.8
90°-150°	3418.0	29.9
90°-180°	4703.0	41.1
0°-180°	11439.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3274	3274	3274	3274	3274	
5°	3274	3259	3221	3247	3238	310
15°	3114	3081	2981	2924	2895	878
25°	2827	2732	2536	2415	2370	1300
35°	2436	2284	2024	1837	1772	1524
45°	1991	1792	1482	1271	1200	1538
55°	1514	1283	963	785	729	1353
65°	1022	782	516	415	406	1014
75°	545	338	237	216	213	577
85°	127	65	56	56	56	146
90°	1	14	23	29	31	11
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: P914995

CATALOG NUMBER: DFN2DIP-SQ4F0-100D060US927-RLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3274.1	3274.1	3274.1	3274.1	3274.1
2.5°	3288.8	3274.1	3241.4	3271.2	3265.3
5°	3274.1	3259.3	3220.6	3247.4	3238.5
7.5°	3247.4	3229.7	3188.2	3199.9	3185.1
10°	3211.8	3191.1	3132.0	3122.9	3105.3
12.5°	3167.5	3140.8	3060.6	3043.0	3010.3
15°	3114.1	3081.3	2980.7	2924.5	2894.9
17.5°	3051.8	3004.3	2879.9	2814.8	2767.3
20°	2980.7	2921.3	2773.3	2699.4	2634.0
22.5°	2903.7	2835.5	2663.6	2563.0	2518.7
25°	2826.7	2731.8	2536.2	2414.9	2370.3
27.5°	2734.9	2634.0	2417.7	2278.5	2210.3
30°	2637.2	2524.3	2287.3	2136.4	2056.3
32.5°	2542.3	2405.8	2163.1	1985.2	1911.0
35°	2435.6	2284.5	2023.9	1837.1	1771.7
37.5°	2331.9	2168.8	1893.4	1688.8	1614.9
40°	2222.2	2044.6	1757.0	1546.7	1469.7
42.5°	2109.7	1920.1	1620.9	1401.4	1327.5
45°	1991.1	1792.5	1481.6	1271.0	1199.9
47.5°	1878.7	1668.3	1348.3	1137.7	1072.6
50°	1754.1	1543.8	1217.8	1013.2	951.3
52.5°	1632.4	1410.2	1093.4	897.8	841.5
55°	1513.9	1282.9	962.9	785.3	729.0
57.5°	1392.7	1155.6	847.6	681.5	634.1
60°	1268.1	1031.1	725.9	575.0	527.5
62.5°	1146.8	909.7	622.1	480.1	456.5
65°	1022.3	782.1	515.6	414.9	405.8
67.5°	903.8	663.6	414.9	364.3	355.5
70°	779.3	548.3	343.6	314.0	302.1
72.5°	660.8	441.3	287.3	263.7	257.8
75°	545.1	337.6	237.0	216.3	213.4
77.5°	429.8	239.9	186.7	174.8	168.8
80°	322.8	172.0	142.1	130.5	130.5
82.5°	225.1	115.7	97.8	91.8	91.8
85°	127.3	65.0	56.2	56.2	56.2
87.5°	47.5	23.6	23.6	20.8	20.8
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



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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	10.84	11.75	11.73	12.65	13.79	6.80	7.71	7.69	8.61	9.75
	3H	12.53	13.34	13.43	14.25	15.42	8.00	8.81	8.89	9.72	10.89
	4H	13.14	13.91	14.06	14.83	16.00	8.45	9.22	9.36	10.13	11.31
	6H	13.57	14.28	14.50	15.20	16.39	8.78	9.48	9.70	10.40	11.59
	8H	13.70	14.38	14.64	15.31	16.50	8.87	9.54	9.80	10.48	11.67
	12H	13.77	14.41	14.71	15.34	16.55	8.92	9.56	9.85	10.49	11.70
4H	2H	10.87	11.64	11.79	12.55	13.73	7.41	8.18	8.33	9.09	10.27
	3H	12.71	13.35	13.64	14.29	15.48	8.77	9.40	9.69	10.35	11.54
	4H	13.41	13.99	14.35	14.93	16.15	9.32	9.90	10.26	10.84	12.06
	6H	13.93	14.43	14.88	15.40	16.61	9.74	10.24	10.69	11.21	12.42
	8H	14.11	14.58	15.07	15.54	16.77	9.87	10.34	10.83	11.30	12.53
	12H	14.21	14.63	15.18	15.61	16.84	9.94	10.36	10.92	11.34	12.57
8H	4H	13.38	13.85	14.34	14.81	16.04	9.61	10.07	10.56	11.03	12.26
	6H	13.96	14.34	14.93	15.34	16.57	10.13	10.52	11.11	11.52	12.74
	8H	14.18	14.52	15.16	15.51	16.75	10.32	10.66	11.31	11.65	12.90
	12H	14.32	14.62	15.31	15.60	16.90	10.45	10.75	11.44	11.73	13.02
12H	4H	13.34	13.76	14.31	14.73	15.97	9.62	10.04	10.59	11.01	12.25
	6H	13.93	14.27	14.92	15.26	16.51	10.18	10.52	11.17	11.51	12.76
	8H	14.16	14.46	15.15	15.44	16.74	10.40	10.70	11.39	11.68	12.97