

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: P914447

Luminaire Tested: DFN2DIP-SQ2F0-050D070US927-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P914447
REPORT IS A COMBINATION OF REPORTS P901344 AND P898215
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ2F0-050D070US927-RLLONL
Description: 2 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

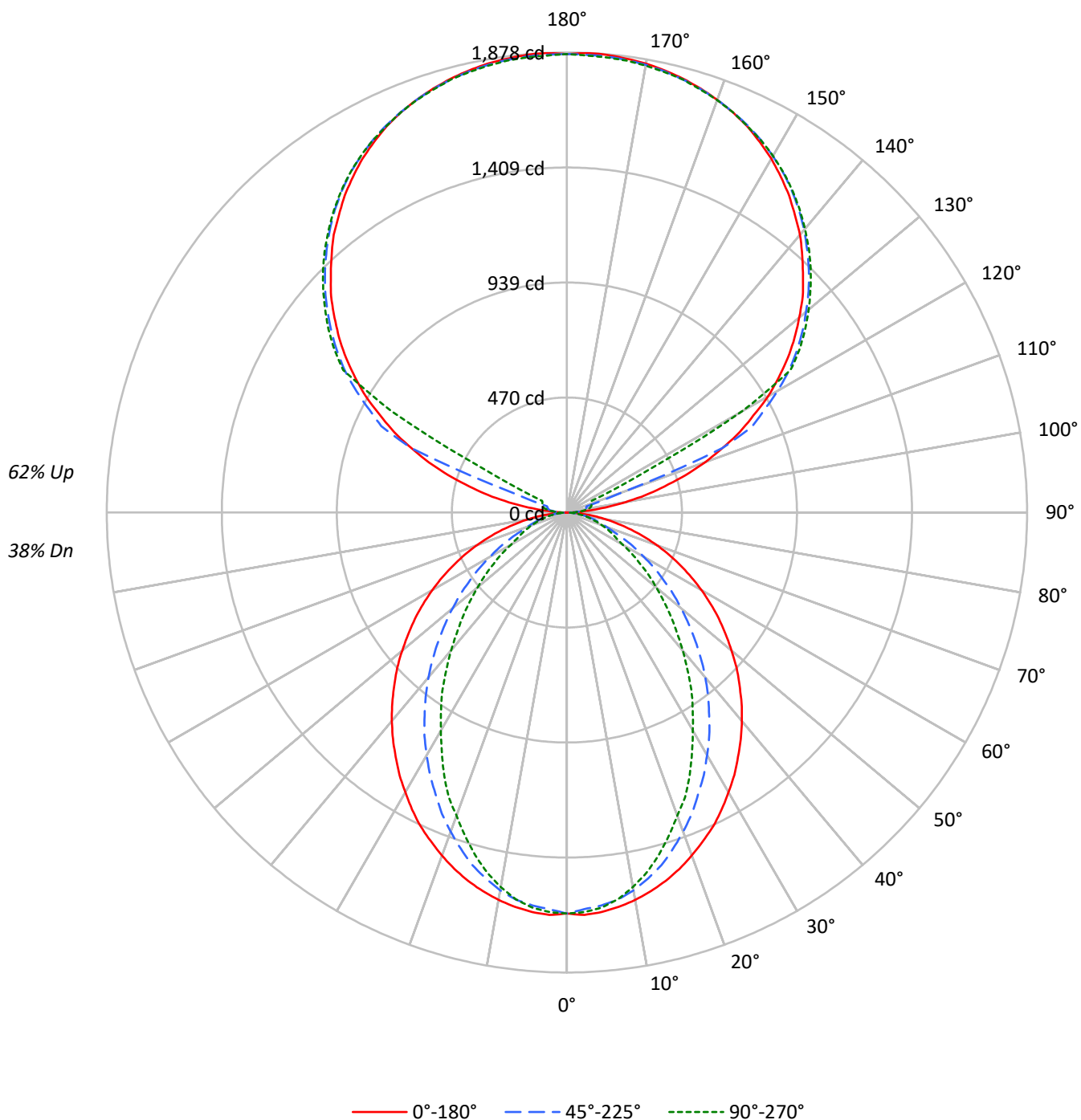
Lumens per Lamp: N/A
Luminaire Lumens: 8856.6 lumens
Efficiency: N/A
Efficacy: 89.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.21' x L: 2.21' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 98.7
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.996
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
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10
RCR																	
0	104	104	104	104	95	95	95	95	77	77	77	60	60	60	45	45	45
1	95	91	88	84	87	83	80	77	68	66	64	54	52	51	40	40	39
2	87	80	74	69	79	73	68	64	60	56	53	47	45	43	36	35	33
3	80	71	64	58	72	65	59	54	53	49	45	42	39	37	32	30	29
4	73	63	55	50	66	57	51	46	47	42	39	38	34	32	29	27	25
5	67	56	48	43	61	51	45	40	42	37	34	34	31	28	26	24	22
6	62	50	43	37	56	46	39	34	38	33	29	31	27	24	24	22	20
7	57	45	38	32	52	42	35	30	35	30	26	28	24	22	22	19	18
8	53	41	34	29	48	38	31	27	32	27	23	26	22	19	20	18	16
9	50	38	31	26	45	35	28	24	29	24	21	24	20	18	19	16	14
10	46	35	28	23	42	32	26	22	27	22	19	22	18	16	17	15	13

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3600	3600	3600
5°	3599	3535	3560
10°	3557	3458	3439
15°	3502	3336	3256
20°	3431	3171	3032
25°	3358	2988	2816
30°	3263	2801	2544
35°	3169	2600	2305
40°	3073	2393	2032
45°	2962	2165	1785
50°	2847	1936	1544
55°	2726	1691	1313
60°	2586	1437	1075
65°	2424	1180	963
70°	2229	940	864
75°	1982	813	776
80°	1627	661	657
85°	1060	410	467

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 2962 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	153.4	1.7
10°-20°	421.2	4.8
20°-30°	591.3	6.7
30°-40°	644.6	7.3
40°-50°	592.4	6.7
50°-60°	465.3	5.3
60°-70°	302.9	3.4
70°-80°	155.9	1.8
80°-90°	43.1	0.5
90°-100°	61.7	0.7
100°-110°	230.0	2.6
110°-120°	610.1	6.9
120°-130°	1011.9	11.4
130°-140°	1074.9	12.1
140°-150°	999.0	11.3
150°-160°	803.2	9.1
160°-170°	517.5	5.8
170°-180°	178.1	2.0
0°-30°	1165.9	13.2
0°-40°	1810.5	20.4
0°-60°	2868.2	32.4
0°-90°	3370.1	38.1
90°-120°	901.9	10.2
90°-150°	3987.7	45.0
90°-180°	5487.0	62.0
0°-180°	8856.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1637	1637	1637	1637	1637	
5°	1637	1630	1610	1624	1619	155
15°	1557	1541	1490	1462	1448	439
25°	1413	1366	1268	1207	1185	650
35°	1218	1142	1012	918	886	762
45°	996	896	741	636	600	769
55°	757	641	481	393	364	676
65°	511	391	258	208	203	507
75°	273	169	118	108	107	288
85°	64	33	28	28	28	73
90°	1	16	27	34	36	8
95°	88	43	53	60	58	104
105°	412	452	83	97	103	440
115°	779	802	836	209	111	767
125°	1101	1119	1144	1154	1158	982
135°	1362	1384	1396	1410	1407	1052
145°	1580	1579	1602	1612	1605	988
155°	1740	1728	1744	1752	1742	802
165°	1834	1826	1830	1839	1830	518
175°	1876	1866	1869	1878	1865	178
180°	1871	1871	1871	1871	1871	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1637.0	1637.0	1637.0	1637.0	1637.0
2.5°	1644.4	1637.0	1620.7	1635.6	1632.6
5°	1637.0	1629.7	1610.3	1623.7	1619.3
7.5°	1623.7	1614.9	1594.1	1600.0	1592.5
10°	1605.9	1595.5	1566.0	1561.5	1552.6
12.5°	1583.7	1570.4	1530.3	1521.5	1505.1
15°	1557.0	1540.7	1490.4	1462.3	1447.5
17.5°	1525.9	1502.2	1439.9	1407.4	1383.6
20°	1490.4	1460.7	1386.6	1349.7	1317.0
22.5°	1451.9	1417.8	1331.8	1281.5	1259.3
25°	1413.3	1365.9	1268.1	1207.4	1185.1
27.5°	1367.5	1317.0	1208.9	1139.2	1105.2
30°	1318.6	1262.2	1143.7	1068.2	1028.1
32.5°	1271.1	1202.9	1081.6	992.6	955.5
35°	1217.8	1142.2	1011.9	918.5	885.9
37.5°	1165.9	1084.4	946.7	844.4	807.5
40°	1111.1	1022.3	878.4	773.3	734.8
42.5°	1054.9	960.0	810.4	700.7	663.8
45°	995.6	896.3	740.8	635.5	599.9
47.5°	939.3	834.2	674.1	568.9	536.3
50°	877.1	771.9	608.9	506.6	475.6
52.5°	816.3	705.1	546.7	448.9	420.8
55°	757.0	641.4	481.4	392.6	364.5
57.5°	696.3	577.8	423.7	340.8	317.0
60°	634.1	515.6	362.9	287.5	263.7
62.5°	573.4	454.9	311.1	240.0	228.2
65°	511.1	391.1	257.8	207.5	203.0
67.5°	451.9	331.8	207.5	182.2	177.8
70°	389.7	274.1	171.8	157.0	151.1
72.5°	330.4	220.7	143.7	131.9	128.9
75°	272.6	168.8	118.5	108.1	106.7
77.5°	214.8	119.9	93.4	87.4	84.4
80°	161.4	86.0	71.1	65.2	65.2
82.5°	112.6	57.8	48.9	45.9	45.9
85°	63.7	32.6	28.1	28.1	28.1
87.5°	23.8	11.8	11.8	10.4	10.4
90°	1.3	16.2	27.0	33.9	36.5
92.5°	33.9	28.4	32.5	35.3	36.5
95°	87.9	43.3	52.8	59.7	58.2
97.5°	158.4	47.5	69.0	73.2	74.5
100°	239.8	54.2	77.2	87.9	90.7
102.5°	329.0	326.5	79.9	94.7	98.9
105°	411.7	452.3	82.6	97.4	102.9
107.5°	507.8	541.6	85.4	100.2	105.7
110°	600.0	628.3	237.0	101.6	106.9

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	686.7	710.9	687.9	104.2	108.4
115°	778.6	801.6	835.5	208.6	111.1
117.5°	858.6	885.6	908.7	714.9	360.2
120°	947.9	968.2	992.7	1008.9	826.1
122.5°	1023.7	1045.4	1072.6	1080.6	1082.0
125°	1100.9	1118.6	1144.3	1153.8	1157.8
127.5°	1171.3	1190.3	1210.7	1224.2	1225.5
130°	1237.7	1259.4	1274.2	1289.2	1287.9
132.5°	1305.4	1323.1	1337.9	1350.1	1348.8
135°	1362.3	1384.0	1396.1	1409.8	1407.1
137.5°	1421.8	1438.1	1451.8	1465.3	1461.3
140°	1480.0	1491.0	1505.8	1518.0	1511.2
142.5°	1528.9	1538.4	1555.9	1566.7	1560.0
145°	1580.4	1579.0	1601.9	1611.5	1604.7
147.5°	1624.9	1621.0	1643.9	1650.7	1645.4
150°	1668.3	1658.9	1680.6	1688.6	1681.9
152.5°	1704.9	1694.1	1714.4	1722.5	1713.1
155°	1740.1	1728.0	1744.2	1752.3	1741.5
157.5°	1768.5	1757.8	1770.0	1779.5	1768.5
160°	1793.0	1784.8	1793.0	1801.0	1791.5
162.5°	1814.6	1806.5	1813.2	1822.7	1810.5
165°	1833.5	1825.5	1829.5	1839.0	1829.5
167.5°	1848.5	1840.2	1844.4	1853.9	1841.7
170°	1860.7	1852.5	1855.2	1864.7	1852.5
172.5°	1868.8	1860.7	1863.4	1872.9	1860.7
175°	1875.5	1866.0	1868.8	1878.2	1864.7
177.5°	1878.2	1868.8	1870.2	1879.7	1867.4
180°	1871.4	1871.4	1871.4	1871.4	1871.4

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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	10.25	11.00	11.31	12.05	13.49	6.21	6.96	7.27	8.01	9.45
	3H	11.90	12.57	12.97	13.63	15.09	7.38	8.04	8.45	9.11	10.56
	4H	12.50	13.12	13.58	14.19	15.65	7.81	8.44	8.89	9.51	10.97
	6H	12.90	13.47	13.99	14.55	16.02	8.11	8.69	9.20	9.76	11.23
	8H	13.01	13.56	14.11	14.65	16.12	8.19	8.74	9.28	9.83	11.29
	12H	13.06	13.59	14.16	14.67	16.16	8.22	8.74	9.32	9.83	11.32
4H	2H	10.26	10.88	11.34	11.95	13.41	6.79	7.42	7.88	8.49	9.95
	3H	12.05	12.58	13.15	13.67	15.15	8.11	8.63	9.20	9.73	11.20
	4H	12.73	13.21	13.83	14.29	15.79	8.64	9.12	9.74	10.20	11.70
	6H	13.22	13.63	14.33	14.74	16.23	9.03	9.44	10.14	10.55	12.04
	8H	13.38	13.76	14.49	14.87	16.37	9.15	9.53	10.26	10.63	12.14
	12H	13.46	13.81	14.59	14.92	16.43	9.20	9.55	10.32	10.66	12.17
8H	4H	12.68	13.07	13.79	14.17	15.67	8.90	9.28	10.01	10.38	11.89
	6H	13.23	13.54	14.35	14.69	16.18	9.39	9.71	10.52	10.85	12.35
	8H	13.43	13.71	14.56	14.83	16.35	9.57	9.84	10.70	10.97	12.49
	12H	13.55	13.79	14.69	14.91	16.47	9.67	9.91	10.80	11.03	12.59
12H	4H	12.63	12.98	13.75	14.09	15.60	8.90	9.24	10.02	10.36	11.87
	6H	13.20	13.48	14.33	14.60	16.12	9.43	9.71	10.57	10.84	12.36
	8H	13.40	13.64	14.54	14.77	16.32	9.62	9.87	10.76	10.99	12.55