

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: P922675

Luminaire Tested: DFN2DIP-SQ2F0-070D060US940-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P922675
REPORT IS A COMBINATION OF REPORTS P901336 AND P898215
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ2F0-070D060US940-RLLONL
Description: 2 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

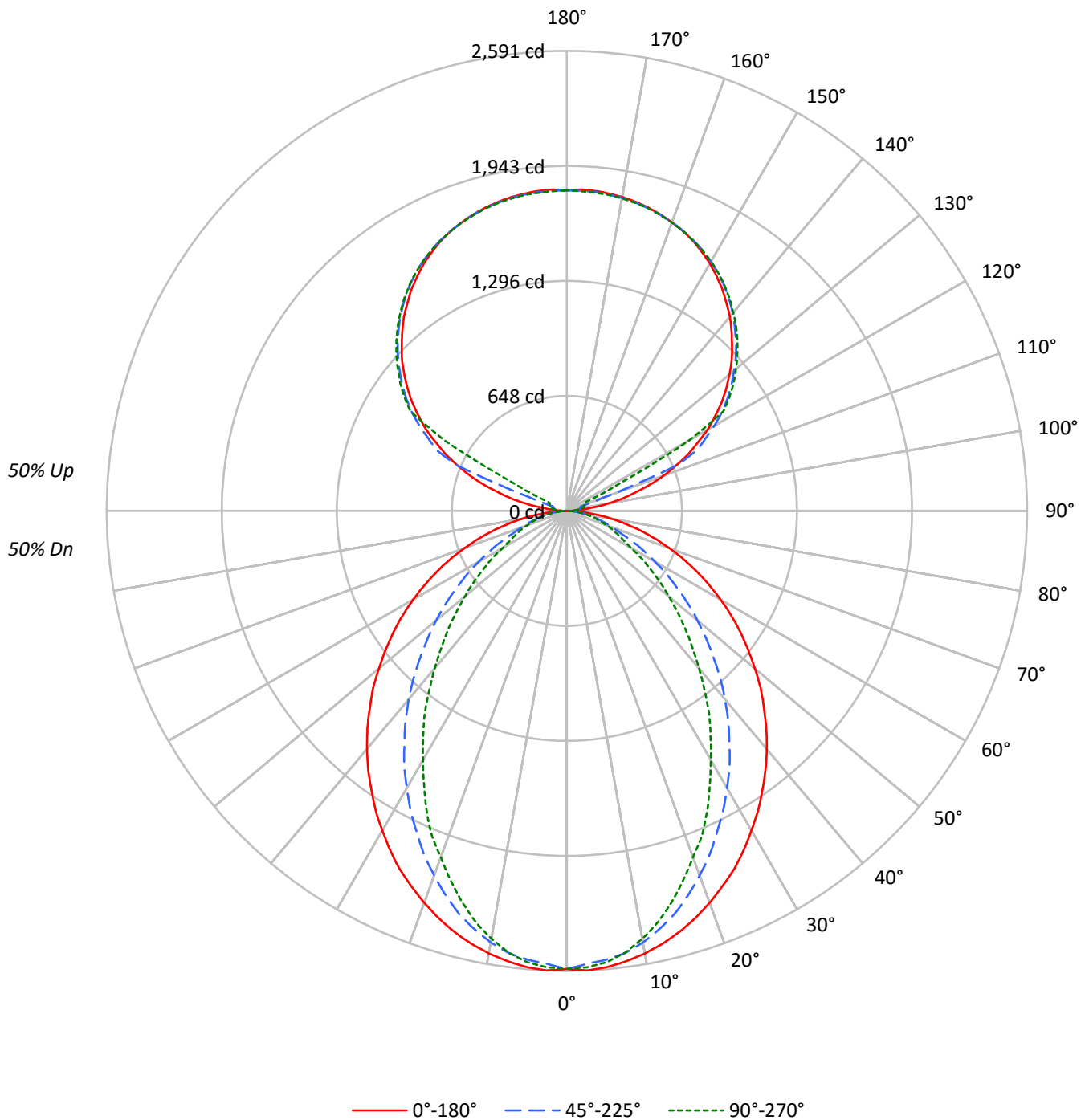
Lumens per Lamp: N/A
Luminaire Lumens: 10602.4 lumens
Efficiency: N/A
Efficacy: 93.3 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.21' x L: 2.21' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 113.6
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9977
Total Harmonic Distortion (THDi): 0.049
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	107	107	107	107	99	99	99	99	83	83	83	69	69	69	56	56	56
1	98	94	90	87	91	87	84	81	74	72	69	62	60	59	50	49	48
2	90	83	77	72	83	77	72	67	65	62	58	55	52	50	45	43	41
3	82	73	66	60	76	68	62	57	58	53	50	49	45	43	40	38	36
4	76	65	57	52	70	60	54	49	52	47	43	44	40	37	36	34	31
5	70	58	50	45	64	54	47	42	47	41	37	40	35	32	33	30	28
6	64	52	45	39	59	49	42	37	42	37	33	36	32	29	30	27	25
7	59	47	40	34	55	44	37	32	38	33	29	33	29	25	28	24	22
8	55	43	36	30	51	40	34	29	35	30	26	30	26	23	25	22	20
9	52	40	32	27	48	37	30	26	32	27	23	28	24	21	24	20	18
10	48	36	29	25	45	34	28	23	30	25	21	26	22	19	22	19	17

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	5673	5673	5673
5°	5672	5570	5610
10°	5606	5449	5420
15°	5519	5257	5131
20°	5407	4997	4778
25°	5292	4708	4438
30°	5142	4413	4009
35°	4994	4097	3633
40°	4843	3772	3203
45°	4668	3412	2813
50°	4487	3050	2433
55°	4296	2665	2069
60°	4076	2264	1695
65°	3821	1859	1517
70°	3511	1480	1361
75°	3122	1281	1223
80°	2564	1041	1036
85°	1669	646	737

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 4668 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	241.8	2.3
10°-20°	663.7	6.3
20°-30°	931.9	8.8
30°-40°	1015.8	9.6
40°-50°	933.6	8.8
50°-60°	733.2	6.9
60°-70°	477.3	4.5
70°-80°	245.7	2.3
80°-90°	65.9	0.6
90°-100°	59.5	0.6
100°-110°	222.0	2.1
110°-120°	588.7	5.6
120°-130°	976.3	9.2
130°-140°	1037.1	9.8
140°-150°	963.9	9.1
150°-160°	774.9	7.3
160°-170°	499.3	4.7
170°-180°	171.9	1.6
0°-30°	1837.4	17.3
0°-40°	2853.2	26.9
0°-60°	4520.0	42.6
0°-90°	5308.8	50.1
90°-120°	870.2	8.2
90°-150°	3847.4	36.3
90°-180°	5294.0	49.9
0°-180°	10602.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2580	2580	2580	2580	2580	
5°	2580	2568	2538	2559	2552	245
15°	2454	2428	2349	2304	2281	691
25°	2227	2152	1998	1903	1868	1024
35°	1919	1800	1595	1448	1396	1201
45°	1569	1412	1167	1002	946	1212
55°	1193	1011	759	619	574	1066
65°	806	616	406	327	320	799
75°	430	266	187	170	168	454
85°	100	51	44	44	44	115
90°	1	16	26	33	35	10
95°	85	42	51	58	56	101
105°	397	436	80	94	99	424
115°	751	774	806	201	107	740
125°	1062	1079	1104	1113	1117	947
135°	1314	1335	1347	1360	1358	1015
145°	1525	1523	1546	1555	1548	954
155°	1679	1667	1683	1691	1680	774
165°	1769	1761	1765	1774	1765	500
175°	1810	1800	1803	1812	1799	172
180°	1806	1806	1806	1806	1806	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2579.8	2579.8	2579.8	2579.8	2579.8
2.5°	2591.4	2579.8	2554.0	2577.6	2572.9
5°	2579.8	2568.1	2537.7	2558.8	2551.8
7.5°	2558.8	2544.9	2512.2	2521.3	2509.7
10°	2530.8	2514.4	2467.8	2460.7	2446.8
12.5°	2495.8	2474.8	2411.6	2397.7	2371.9
15°	2453.7	2427.9	2348.7	2304.4	2281.1
17.5°	2404.7	2367.3	2269.2	2217.9	2180.5
20°	2348.7	2301.9	2185.2	2127.0	2075.5
22.5°	2288.0	2234.3	2098.7	2019.5	1984.6
25°	2227.3	2152.5	1998.4	1902.8	1867.7
27.5°	2155.0	2075.5	1905.1	1795.4	1741.6
30°	2078.0	1989.0	1802.2	1683.4	1620.2
32.5°	2003.1	1895.7	1704.4	1564.2	1505.7
35°	1919.1	1800.0	1594.7	1447.6	1396.1
37.5°	1837.5	1708.9	1491.9	1330.6	1272.5
40°	1751.0	1611.1	1384.4	1218.7	1158.0
42.5°	1662.3	1513.0	1277.1	1104.2	1046.1
45°	1569.0	1412.4	1167.4	1001.5	945.5
47.5°	1480.2	1314.6	1062.4	896.4	845.2
50°	1382.2	1216.5	959.6	798.3	749.6
52.5°	1286.3	1111.2	861.5	707.4	663.1
55°	1192.9	1010.8	758.7	618.8	574.4
57.5°	1097.3	910.5	667.8	537.0	499.6
60°	999.3	812.4	571.9	453.1	415.6
62.5°	903.6	716.8	490.2	378.3	359.6
65°	805.5	616.3	406.3	327.0	319.8
67.5°	712.1	522.9	327.0	287.0	280.2
70°	614.0	431.9	270.7	247.4	238.0
72.5°	520.7	347.8	226.4	207.9	203.1
75°	429.5	266.0	186.7	170.4	168.2
77.5°	338.6	189.0	147.1	137.7	133.0
80°	254.4	135.5	112.0	102.8	102.8
82.5°	177.4	91.1	77.0	72.3	72.3
85°	100.3	51.3	44.3	44.3	44.3
87.5°	37.4	18.5	18.5	16.3	16.3
90°	1.2	15.7	26.0	32.7	35.2
92.5°	32.7	27.5	31.3	34.0	35.2
95°	84.9	41.7	50.9	57.6	56.2
97.5°	152.8	45.7	66.5	70.6	71.9
100°	231.3	52.3	74.5	84.9	87.5
102.5°	317.4	315.0	77.1	91.4	95.4
105°	397.2	436.4	79.7	94.0	99.3
107.5°	490.0	522.5	82.4	96.7	101.9
110°	578.9	606.2	228.7	98.1	103.2

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	662.5	685.9	663.7	100.5	104.6
115°	751.3	773.5	806.2	201.3	107.2
117.5°	828.3	854.4	876.7	689.8	347.5
120°	914.6	934.2	957.8	973.4	797.0
122.5°	987.7	1008.6	1034.8	1042.6	1044.0
125°	1062.2	1079.2	1104.0	1113.2	1117.0
127.5°	1130.2	1148.4	1168.1	1181.2	1182.4
130°	1194.2	1215.1	1229.4	1243.8	1242.6
132.5°	1259.5	1276.6	1290.8	1302.6	1301.4
135°	1314.5	1335.4	1347.0	1360.2	1357.5
137.5°	1371.8	1387.5	1400.7	1413.7	1409.9
140°	1428.0	1438.6	1452.9	1464.6	1458.1
142.5°	1475.2	1484.3	1501.3	1511.6	1505.1
145°	1524.8	1523.4	1545.6	1554.8	1548.3
147.5°	1567.8	1563.9	1586.1	1592.6	1587.5
150°	1609.7	1600.5	1621.5	1629.2	1622.7
152.5°	1644.9	1634.5	1654.0	1662.0	1652.8
155°	1678.9	1667.2	1682.9	1690.7	1680.2
157.5°	1706.4	1695.9	1707.7	1716.9	1706.4
160°	1729.9	1722.0	1729.9	1737.7	1728.6
162.5°	1750.7	1742.9	1749.4	1758.6	1746.9
165°	1769.1	1761.3	1765.1	1774.3	1765.1
167.5°	1783.4	1775.6	1779.6	1788.8	1776.9
170°	1795.3	1787.3	1790.0	1799.1	1787.3
172.5°	1803.0	1795.3	1797.9	1807.1	1795.3
175°	1809.5	1800.4	1803.0	1812.1	1799.1
177.5°	1812.1	1803.0	1804.4	1813.6	1801.8
180°	1805.6	1805.6	1805.6	1805.6	1805.6

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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	13.07	13.90	14.03	14.87	16.15	9.03	9.86	9.99	10.83	12.11
	3H	14.73	15.47	15.70	16.45	17.75	10.20	10.94	11.17	11.93	13.22
	4H	15.32	16.02	16.31	17.01	18.31	10.64	11.34	11.63	12.33	13.63
	6H	15.73	16.37	16.73	17.37	18.68	10.94	11.59	11.94	12.58	13.90
	8H	15.85	16.46	16.85	17.47	18.78	11.02	11.64	12.03	12.65	13.96
	12H	15.90	16.48	16.91	17.49	18.82	11.06	11.64	12.07	12.65	13.98
4H	2H	13.08	13.78	14.08	14.77	16.08	9.62	10.32	10.61	11.30	12.61
	3H	14.89	15.47	15.89	16.49	17.81	10.94	11.53	11.95	12.54	13.86
	4H	15.57	16.10	16.58	17.11	18.45	11.48	12.01	12.49	13.02	14.36
	6H	16.06	16.52	17.08	17.55	18.89	11.88	12.33	12.90	13.37	14.70
	8H	16.23	16.65	17.25	17.68	19.03	11.99	12.42	13.02	13.45	14.80
	12H	16.31	16.70	17.35	17.74	19.09	12.05	12.43	13.09	13.47	14.83
8H	4H	15.53	15.96	16.55	16.98	18.33	11.74	12.17	12.77	13.20	14.55
	6H	16.07	16.43	17.12	17.49	18.84	12.24	12.59	13.29	13.66	15.01
	8H	16.28	16.59	17.33	17.64	19.01	12.42	12.73	13.47	13.78	15.15
	12H	16.40	16.68	17.46	17.72	19.13	12.52	12.79	13.58	13.84	15.25
12H	4H	15.48	15.87	16.52	16.91	18.26	11.75	12.13	12.79	13.17	14.53
	6H	16.05	16.36	17.10	17.41	18.78	12.28	12.59	13.34	13.65	15.01
	8H	16.25	16.53	17.31	17.57	18.99	12.48	12.75	13.53	13.80	15.21