

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: P919855

Luminaire Tested: DFN2DIP-SQ2F0-030D070US935-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P919855
REPORT IS A COMBINATION OF REPORTS P901340 AND P898215
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ2F0-030D070US935-RLLONL
Description: 2 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

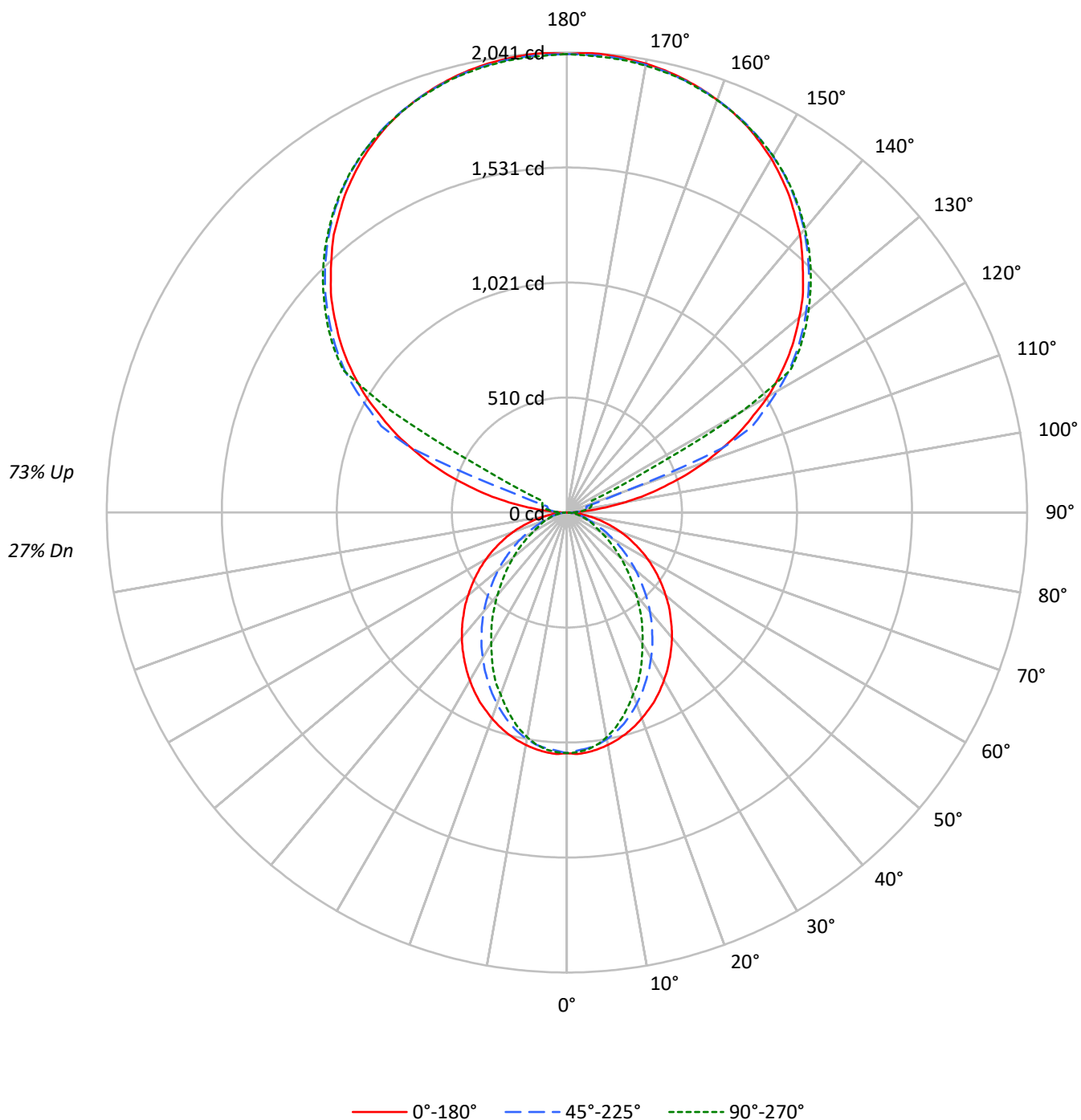
Lumens per Lamp: N/A
Luminaire Lumens: 8162.2 lumens
Efficiency: N/A
Efficacy: 105.3 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.21' x L: 2.21' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 77.5
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9963
Total Harmonic Distortion (THDi): 0.065
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	102	102	102	102		91	91	91	91		71	71	71		52	52	52		35	35	35
1	93	89	85	82		83	79	76	74		62	60	58		46	45	44		31	31	30
2	85	78	72	67		75	70	65	61		55	51	49		41	39	37		28	27	26
3	77	69	62	56		69	62	56	51		48	44	41		36	34	31		25	23	22
4	71	61	53	48		63	55	48	43		43	39	35		32	29	27		22	21	19
5	65	54	46	41		58	49	42	37		39	34	30		29	26	23		20	18	17
6	60	48	41	35		53	44	37	32		35	30	26		26	23	21		18	16	15
7	55	44	36	31		49	39	33	28		31	27	23		24	21	18		17	15	13
8	51	40	32	27		46	36	29	25		29	24	21		22	19	16		16	13	12
9	48	36	29	24		43	33	26	22		26	22	18		20	17	15		14	12	11
10	44	33	26	22		40	30	24	20		24	20	16		19	15	13		13	11	10

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2348	2348	2348
5°	2347	2305	2321
10°	2320	2255	2243
15°	2284	2175	2123
20°	2237	2068	1977
25°	2190	1948	1836
30°	2128	1826	1659
35°	2067	1696	1503
40°	2004	1561	1325
45°	1932	1412	1164
50°	1857	1262	1007
55°	1778	1103	856
60°	1686	937	702
65°	1581	769	628
70°	1453	612	563
75°	1292	530	506
80°	1061	430	428
85°	690	267	304

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1932 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	100.1	1.2
10°-20°	274.7	3.4
20°-30°	385.6	4.7
30°-40°	420.3	5.1
40°-50°	386.3	4.7
50°-60°	303.4	3.7
60°-70°	197.5	2.4
70°-80°	101.7	1.2
80°-90°	29.5	0.4
90°-100°	67.1	0.8
100°-110°	250.0	3.1
110°-120°	663.1	8.1
120°-130°	1099.8	13.5
130°-140°	1168.3	14.3
140°-150°	1085.8	13.3
150°-160°	872.9	10.7
160°-170°	562.5	6.9
170°-180°	193.6	2.4
0°-30°	760.3	9.3
0°-40°	1180.7	14.5
0°-60°	1870.4	22.9
0°-90°	2199.1	26.9
90°-120°	980.2	12.0
90°-150°	4334.1	53.1
90°-180°	5963.0	73.1
0°-180°	8162.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1068	1068	1068	1068	1068	
5°	1068	1063	1050	1059	1056	101
15°	1015	1005	972	954	944	286
25°	922	891	827	787	773	424
35°	794	745	660	599	578	497
45°	649	584	483	414	391	501
55°	494	418	314	256	238	441
65°	333	255	168	135	132	330
75°	178	110	77	70	70	188
85°	42	21	18	18	18	48
90°	1	18	29	37	40	8
95°	96	47	57	65	63	113
105°	448	492	90	106	112	478
115°	846	871	908	227	121	833
125°	1196	1216	1244	1254	1258	1067
135°	1481	1504	1517	1532	1529	1144
145°	1718	1716	1741	1751	1744	1074
155°	1891	1878	1896	1904	1893	872
165°	1993	1984	1988	1999	1988	563
175°	2038	2028	2031	2041	2027	194
180°	2034	2034	2034	2034	2034	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1067.6	1067.6	1067.6	1067.6	1067.6
2.5°	1072.4	1067.6	1056.9	1066.6	1064.7
5°	1067.6	1062.7	1050.2	1058.9	1055.9
7.5°	1058.9	1053.1	1039.6	1043.4	1038.5
10°	1047.2	1040.5	1021.2	1018.2	1012.5
12.5°	1032.8	1024.1	998.0	992.2	981.5
15°	1015.4	1004.7	971.9	953.6	943.9
17.5°	995.1	979.6	939.0	917.8	902.3
20°	971.9	952.5	904.2	880.2	858.8
22.5°	946.8	924.5	868.5	835.7	821.2
25°	921.7	890.7	827.0	787.4	772.8
27.5°	891.7	858.8	788.3	743.0	720.7
30°	859.9	823.1	745.8	696.6	670.5
32.5°	828.9	784.5	705.3	647.3	623.1
35°	794.2	744.8	659.9	599.0	577.7
37.5°	760.3	707.1	617.3	550.6	526.6
40°	724.6	666.7	572.9	504.3	479.2
42.5°	687.9	626.1	528.5	456.9	432.8
45°	649.3	584.4	483.1	414.4	391.2
47.5°	612.5	544.0	439.6	370.9	349.7
50°	572.0	503.3	397.1	330.4	310.1
52.5°	532.3	459.9	356.5	292.7	274.4
55°	493.6	418.3	313.9	256.1	237.7
57.5°	454.1	376.8	276.4	222.2	206.7
60°	413.5	336.2	236.7	187.4	172.0
62.5°	373.9	296.6	202.9	156.5	148.9
65°	333.3	255.0	168.1	135.3	132.3
67.5°	294.7	216.4	135.3	118.8	115.9
70°	254.1	178.7	112.0	102.4	98.5
72.5°	215.4	143.9	93.7	86.0	84.0
75°	177.7	110.1	77.3	70.5	69.6
77.5°	140.1	78.2	60.9	57.0	55.0
80°	105.3	56.1	46.3	42.5	42.5
82.5°	73.4	37.7	31.9	30.0	30.0
85°	41.5	21.2	18.3	18.3	18.3
87.5°	15.5	7.7	7.7	6.8	6.8
90°	1.4	17.7	29.4	36.9	39.7
92.5°	36.9	30.9	35.3	38.3	39.7
95°	95.6	47.0	57.3	64.8	63.3
97.5°	172.1	51.6	75.0	79.6	80.9
100°	260.6	58.9	83.9	95.6	98.6
102.5°	357.6	354.8	86.9	103.0	107.5
105°	447.5	491.6	89.8	105.9	111.8
107.5°	551.9	588.7	92.8	108.9	114.9
110°	652.1	682.9	257.6	110.5	116.2

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	746.3	772.7	747.7	113.2	117.8
115°	846.3	871.2	908.1	226.7	120.8
117.5°	933.1	962.5	987.7	777.1	391.5
120°	1030.3	1052.3	1078.9	1096.6	897.8
122.5°	1112.6	1136.2	1165.8	1174.5	1176.0
125°	1196.5	1215.7	1243.7	1254.0	1258.3
127.5°	1273.1	1293.6	1315.9	1330.6	1332.0
130°	1345.2	1368.8	1384.9	1401.2	1399.8
132.5°	1418.8	1438.0	1454.1	1467.4	1466.0
135°	1480.7	1504.2	1517.4	1532.2	1529.3
137.5°	1545.3	1563.1	1577.9	1592.6	1588.2
140°	1608.6	1620.5	1636.6	1649.8	1642.5
142.5°	1661.7	1672.1	1691.1	1702.8	1695.5
145°	1717.7	1716.1	1741.1	1751.4	1744.1
147.5°	1766.1	1761.8	1786.7	1794.1	1788.3
150°	1813.3	1803.0	1826.6	1835.3	1828.0
152.5°	1853.0	1841.2	1863.3	1872.2	1861.9
155°	1891.3	1878.1	1895.7	1904.5	1892.8
157.5°	1922.2	1910.5	1923.7	1934.1	1922.2
160°	1948.8	1939.8	1948.8	1957.5	1947.1
162.5°	1972.2	1963.4	1970.7	1981.1	1967.8
165°	1992.8	1984.1	1988.4	1998.7	1988.4
167.5°	2009.1	2000.1	2004.7	2015.0	2001.7
170°	2022.3	2013.4	2016.4	2026.7	2013.4
172.5°	2031.1	2022.3	2025.3	2035.6	2022.3
175°	2038.4	2028.1	2031.1	2041.3	2026.7
177.5°	2041.3	2031.1	2032.6	2043.0	2029.6
180°	2034.0	2034.0	2034.0	2034.0	2034.0

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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	7.33	8.00	8.46	9.12	10.69	3.29	3.96	4.42	5.08	6.65
	3H	8.97	9.57	10.12	10.71	12.29	4.44	5.04	5.59	6.18	7.76
	4H	9.56	10.13	10.71	11.26	12.85	4.87	5.44	6.03	6.58	8.17
	6H	9.96	10.48	11.12	11.62	13.22	5.17	5.69	6.33	6.83	8.43
	8H	10.07	10.57	11.24	11.72	13.31	5.25	5.75	6.41	6.90	8.49
	12H	10.12	10.59	11.29	11.74	13.35	5.28	5.75	6.45	6.90	8.51
4H	2H	7.32	7.89	8.48	9.02	10.61	3.85	4.42	5.01	5.56	7.14
	3H	9.11	9.59	10.28	10.75	12.35	5.17	5.64	6.33	6.80	8.40
	4H	9.78	10.22	10.95	11.37	12.99	5.69	6.13	6.86	7.28	8.90
	6H	10.27	10.64	11.44	11.81	13.42	6.08	6.46	7.26	7.63	9.24
	8H	10.43	10.78	11.60	11.94	13.57	6.20	6.55	7.37	7.71	9.33
	12H	10.51	10.82	11.70	12.00	13.63	6.25	6.56	7.43	7.73	9.37
8H	4H	9.73	10.08	10.91	11.24	12.87	5.95	6.30	7.12	7.46	9.09
	6H	10.27	10.56	11.46	11.76	13.39	6.44	6.72	7.63	7.93	9.55
	8H	10.48	10.73	11.67	11.91	13.55	6.61	6.86	7.81	8.05	9.69
	12H	10.59	10.81	11.79	11.99	13.67	6.71	6.93	7.91	8.11	9.79
12H	4H	9.68	9.99	10.87	11.17	12.80	5.94	6.26	7.13	7.43	9.06
	6H	10.25	10.50	11.44	11.68	13.32	6.48	6.73	7.68	7.91	9.56
	8H	10.45	10.66	11.65	11.84	13.52	6.67	6.89	7.87	8.07	9.74