

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: P914472

Luminaire Tested: DFN2DIP-SQ2F0-060D080US927-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P914472
REPORT IS A COMBINATION OF REPORTS P899837 AND P896659
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ2F0-060D080US927-FLLFLL
Description: 2 foot, Square Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

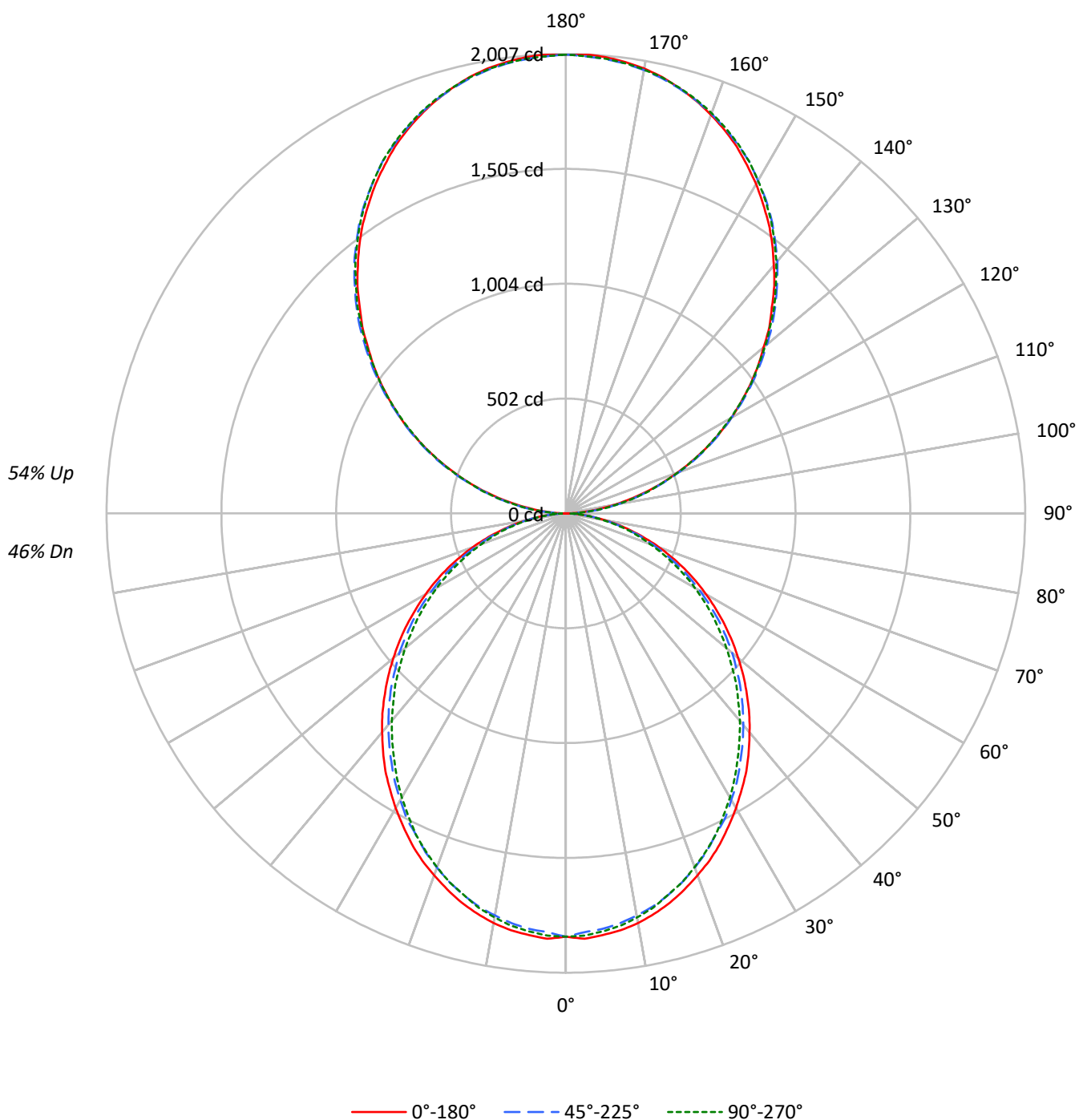
Lumens per Lamp: N/A
Luminaire Lumens: 10314.2 lumens
Efficiency: N/A
Efficacy: 86.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.21' x L: 2.21' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 120
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9781
Total Harmonic Distortion (THDi): 0.075
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
RCR																	
0	106	106	106	106	97	97	97	97	81	81	81		66	66	66		52
1	97	93	89	85	89	85	82	79	71	69	66		58	56	55		46
2	88	81	75	70	81	74	69	65	62	58	55		51	48	46		41
3	80	71	64	58	73	65	59	54	55	50	46		45	42	39		36
4	74	63	55	49	67	58	51	46	49	43	39		40	36	33		32
5	67	56	48	42	62	52	45	39	44	38	34		36	32	29		29
6	62	50	42	36	57	46	39	34	39	34	30		33	28	25		26
7	57	45	37	32	53	42	35	30	36	30	26		30	25	22		24
8	53	41	33	28	49	38	31	26	32	27	23		27	23	20		22
9	50	37	30	25	45	35	28	24	30	24	21		25	21	18		20
10	46	34	27	22	42	32	25	21	27	22	19		23	19	16		19

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4067	4067	4067
5°	4066	4001	4031
10°	4026	3939	3971
15°	3960	3865	3880
20°	3873	3766	3787
25°	3786	3649	3681
30°	3679	3541	3547
35°	3577	3413	3406
40°	3453	3285	3271
45°	3328	3155	3132
50°	3192	3019	2973
55°	3049	2861	2824
60°	2886	2676	2655
65°	2708	2482	2455
70°	2482	2246	2238
75°	2171	1963	2030
80°	1793	1603	1649
85°	1211	1012	1036

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3328 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	174.1	1.7
10°-20°	489.8	4.7
20°-30°	719.8	7.0
30°-40°	836.0	8.1
40°-50°	834.9	8.1
50°-60°	728.0	7.1
60°-70°	538.2	5.2
70°-80°	304.5	3.0
80°-90°	86.1	0.8
90°-100°	124.0	1.2
100°-110°	394.1	3.8
110°-120°	674.4	6.5
120°-130°	886.9	8.6
130°-140°	995.5	9.7
140°-150°	976.2	9.5
150°-160°	818.9	7.9
160°-170°	543.1	5.3
170°-180°	189.8	1.8
0°-30°	1383.6	13.4
0°-40°	2219.6	21.5
0°-60°	3782.5	36.7
0°-90°	4711.2	45.7
90°-120°	1192.5	11.6
90°-150°	4051.1	39.3
90°-180°	5603.0	54.3
0°-180°	10314.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1849	1849	1849	1849	1849	
5°	1849	1842	1823	1837	1834	176
15°	1760	1750	1727	1734	1725	496
25°	1593	1579	1549	1552	1549	733
35°	1375	1357	1328	1318	1309	858
45°	1119	1106	1079	1060	1053	863
55°	847	836	814	793	784	757
65°	571	560	542	526	518	564
75°	299	295	286	276	279	319
85°	73	71	69	64	62	81
90°	2	22	59	56	57	10
95°	88	105	108	108	105	98
105°	364	369	372	375	375	384
115°	677	686	683	682	677	669
125°	984	999	995	989	987	880
135°	1273	1292	1296	1294	1289	984
145°	1546	1558	1567	1569	1563	966
155°	1767	1772	1778	1786	1781	813
165°	1923	1921	1921	1933	1924	542
175°	2001	1996	1992	2004	1994	190
180°	2004	2004	2004	2004	2004	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1849.4	1849.4	1849.4	1849.4	1849.4
2.5°	1860.2	1851.3	1831.7	1849.4	1846.0
5°	1849.4	1842.5	1822.8	1837.0	1833.6
7.5°	1837.0	1826.5	1806.8	1821.1	1817.6
10°	1817.6	1805.1	1783.8	1797.9	1792.6
12.5°	1790.8	1780.2	1758.9	1767.8	1764.2
15°	1760.5	1750.0	1726.8	1734.0	1725.1
17.5°	1723.2	1712.7	1689.5	1698.3	1689.5
20°	1682.3	1671.7	1646.8	1652.1	1645.1
22.5°	1641.6	1625.5	1602.3	1602.3	1598.7
25°	1593.4	1579.3	1549.0	1552.4	1549.0
27.5°	1540.0	1527.6	1504.5	1499.3	1490.4
30°	1486.8	1472.4	1445.9	1440.6	1433.4
32.5°	1429.8	1419.3	1390.8	1380.0	1372.8
35°	1374.8	1357.0	1328.5	1317.7	1308.8
37.5°	1312.5	1296.4	1268.0	1255.4	1246.6
40°	1248.5	1234.1	1205.7	1189.9	1182.6
42.5°	1186.2	1171.9	1143.6	1125.7	1115.1
45°	1118.7	1106.2	1079.4	1060.0	1052.8
47.5°	1052.8	1040.4	1011.9	992.3	981.7
50°	983.4	974.5	949.7	924.7	915.8
52.5°	915.8	903.4	880.4	860.8	848.3
55°	846.6	835.8	814.5	793.2	784.3
57.5°	777.2	768.3	745.1	723.8	716.6
60°	707.7	700.8	675.9	656.2	650.9
62.5°	640.2	627.7	610.0	592.2	585.1
65°	570.9	560.2	542.5	526.4	517.5
67.5°	499.8	490.8	474.9	462.5	455.3
70°	434.0	426.8	410.7	398.3	391.3
72.5°	366.4	359.3	350.4	337.9	332.6
75°	298.7	295.3	286.2	275.7	279.2
77.5°	238.3	231.2	227.5	222.3	217.0
80°	177.9	176.0	172.5	167.2	163.6
82.5°	121.0	121.0	119.2	112.1	112.1
85°	72.8	71.1	69.4	63.9	62.3
87.5°	32.1	28.5	24.9	19.6	17.7
90°	1.8	21.8	59.3	55.6	57.4
92.5°	37.5	50.8	52.6	54.3	54.3
95°	88.2	105.1	108.1	108.1	105.1
97.5°	146.9	162.6	169.2	169.2	169.2
100°	214.5	228.4	233.2	233.2	231.4
102.5°	285.8	296.1	302.7	304.5	302.7
105°	363.8	368.6	372.2	375.3	375.3
107.5°	441.1	448.4	448.4	449.6	441.1
110°	516.0	525.7	525.7	525.7	520.9

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	597.0	607.3	605.5	600.6	597.0
115°	676.8	686.4	683.4	681.6	676.8
117.5°	755.9	769.2	760.7	755.9	751.1
120°	835.7	849.0	835.7	835.7	830.2
122.5°	908.2	925.1	916.6	911.8	908.2
125°	984.3	999.4	994.6	989.1	987.4
127.5°	1058.7	1077.4	1070.7	1063.5	1058.7
130°	1128.1	1149.9	1146.8	1143.3	1136.6
132.5°	1206.1	1223.0	1224.2	1215.8	1210.9
135°	1273.1	1291.9	1295.5	1293.7	1288.9
137.5°	1348.1	1363.2	1366.2	1365.0	1357.7
140°	1414.0	1429.0	1437.5	1437.5	1430.8
142.5°	1481.6	1496.7	1501.6	1503.4	1496.7
145°	1545.7	1557.7	1567.4	1569.2	1562.6
147.5°	1603.1	1618.2	1625.4	1628.5	1621.8
150°	1662.3	1672.5	1679.2	1684.7	1679.2
152.5°	1714.8	1725.1	1733.6	1740.3	1733.6
155°	1767.4	1772.3	1777.7	1786.1	1780.7
157.5°	1812.7	1816.4	1819.4	1831.4	1823.0
160°	1853.2	1856.9	1858.7	1868.9	1861.7
162.5°	1890.7	1890.7	1892.5	1904.0	1895.5
165°	1922.7	1920.9	1920.9	1933.0	1924.5
167.5°	1951.7	1946.3	1946.3	1958.4	1949.9
170°	1973.5	1968.6	1966.8	1978.9	1968.6
172.5°	1988.6	1983.8	1982.0	1994.0	1983.8
175°	2000.7	1995.8	1992.2	2004.3	1994.0
177.5°	2007.3	2002.5	1998.8	2009.1	1998.8
180°	2004.3	2004.3	2004.3	2004.3	2004.3

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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	11.62	12.44	12.61	13.44	14.78	11.17	12.00	12.16	13.00	14.33
	3H	13.25	13.99	14.26	15.01	16.36	12.76	13.50	13.77	14.52	15.87
	4H	13.83	14.53	14.84	15.54	16.90	13.33	14.03	14.35	15.05	16.41
	6H	14.21	14.85	15.24	15.88	17.25	13.71	14.35	14.74	15.38	16.75
	8H	14.31	14.92	15.34	15.96	17.33	13.80	14.42	14.84	15.46	16.82
	12H	14.35	14.93	15.38	15.96	17.35	13.84	14.42	14.88	15.45	16.85
4H	2H	12.06	12.76	13.08	13.78	15.14	11.71	12.41	12.73	13.42	14.78
	3H	13.90	14.48	14.93	15.53	16.90	13.49	14.08	14.52	15.12	16.50
	4H	14.60	15.13	15.64	16.17	17.57	14.17	14.71	15.21	15.75	17.14
	6H	15.09	15.55	16.14	16.61	18.01	14.66	15.12	15.71	16.18	17.57
	8H	15.23	15.66	16.28	16.71	18.12	14.79	15.22	15.84	16.28	17.69
	12H	15.29	15.68	16.36	16.75	18.16	14.85	15.23	15.91	16.30	17.71
8H	4H	14.78	15.21	15.83	16.26	17.67	14.40	14.83	15.45	15.89	17.29
	6H	15.39	15.74	16.46	16.84	18.24	15.00	15.36	16.07	16.45	17.86
	8H	15.59	15.91	16.67	16.98	18.41	15.20	15.51	16.28	16.59	18.01
	12H	15.71	15.98	16.79	17.06	18.52	15.30	15.57	16.38	16.65	18.11
12H	4H	14.76	15.15	15.83	16.22	17.63	14.39	14.78	15.46	15.85	17.26
	6H	15.41	15.72	16.49	16.80	18.23	15.04	15.35	16.12	16.43	17.85
	8H	15.64	15.91	16.72	16.98	18.45	15.25	15.53	16.34	16.60	18.07