

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: P920454

Luminaire Tested: DFN2DIP-SQ4F0-100D070US935-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P920454
REPORT IS A COMBINATION OF REPORTS P900086 AND P896915
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ4F0-100D070US935-RLLFLL
Description: 4 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

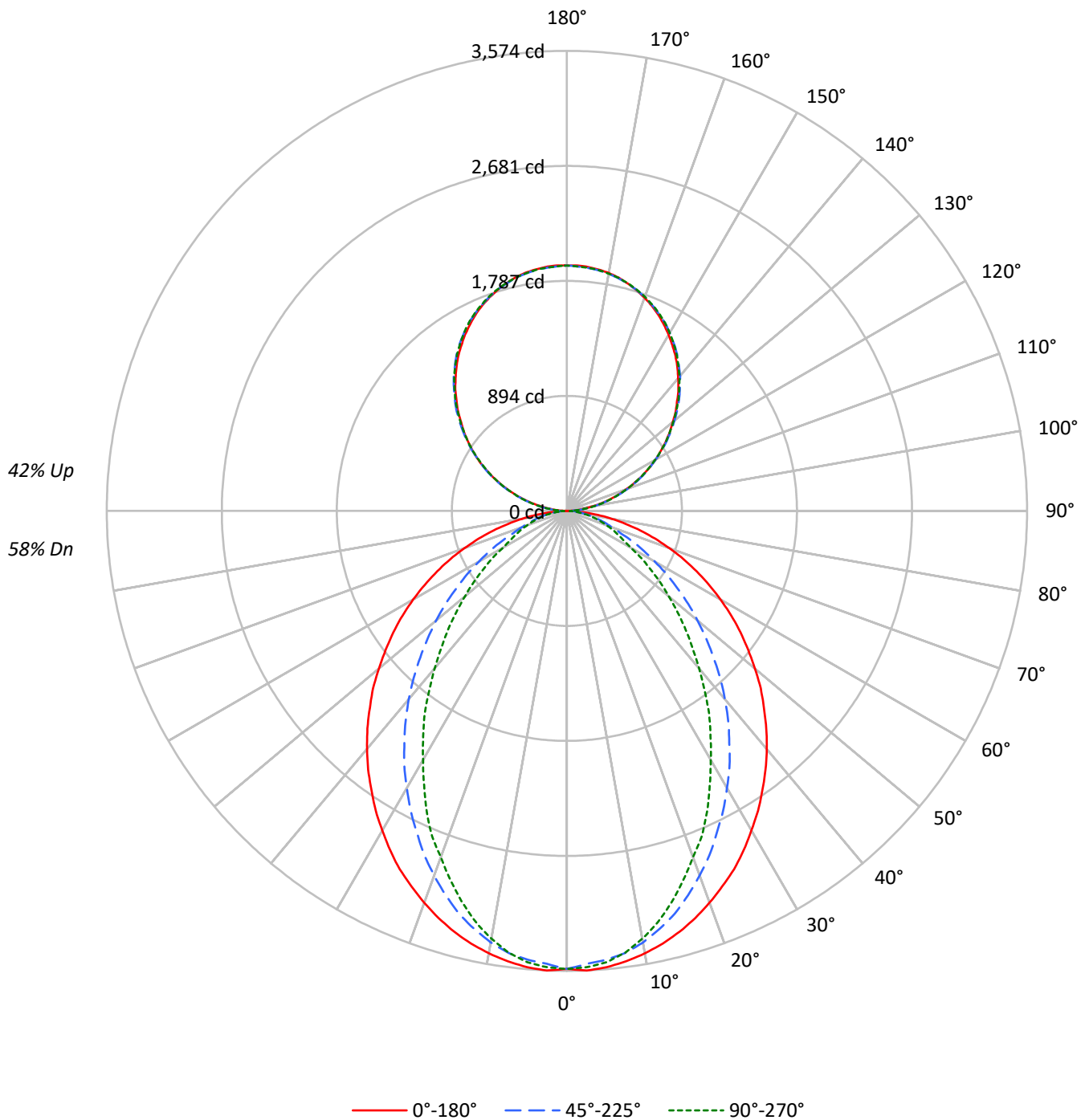
Lumens per Lamp: N/A
Luminaire Lumens: 12652.4 lumens
Efficiency: N/A
Efficacy: 87.3 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.92' x L: 3.92' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 144.9
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
RW	70	50	30	10		70	50	30	10		50	30	10		50	30	10		50	30	10
RCR																					
0	109	109	109	109		102	102	102	102		88	88	88		75	75	75		63	63	63
1	100	96	92	89		93	90	86	83		78	75	73		67	65	64		57	56	55
2	92	84	79	74		85	79	74	69		69	65	62		59	57	54		51	49	47
3	84	75	68	62		78	70	64	59		61	56	52		53	49	46		45	43	41
4	77	67	59	53		72	62	56	50		55	49	45		48	44	40		41	38	35
5	71	60	52	46		66	56	49	44		49	44	39		43	39	35		37	34	31
6	66	54	46	40		61	51	43	38		45	39	35		39	35	31		34	31	28
7	61	49	41	35		57	46	39	34		41	35	31		36	31	28		31	28	25
8	57	44	37	32		53	42	35	30		37	32	28		33	28	25		29	25	23
9	53	41	33	28		49	39	32	27		34	29	25		30	26	23		27	23	20
10	49	38	30	26		46	36	29	25		32	26	23		28	24	21		25	21	19

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2497	2497	2497
5°	2501	2458	2474
10°	2476	2410	2394
15°	2442	2331	2270
20°	2397	2222	2118
25°	2351	2099	1971
30°	2289	1973	1784
35°	2228	1838	1620
40°	2166	1698	1432
45°	2094	1542	1262
50°	2020	1385	1095
55°	1942	1217	935
60°	1852	1042	770
65°	1749	863	694
70°	1624	697	630
75°	1467	615	574
80°	1239	518	501
85°	863	348	381

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2094 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	333.5	2.6
10°-20°	915.5	7.2
20°-30°	1285.4	10.2
30°-40°	1401.2	11.1
40°-50°	1287.8	10.2
50°-60°	1011.4	8.0
60°-70°	658.3	5.2
70°-80°	338.9	2.7
80°-90°	91.9	0.7
90°-100°	117.9	0.9
100°-110°	374.8	3.0
110°-120°	641.3	5.1
120°-130°	843.5	6.7
130°-140°	946.7	7.5
140°-150°	928.4	7.3
150°-160°	778.8	6.2
160°-170°	516.5	4.1
170°-180°	180.5	1.4
0°-30°	2534.4	20.0
0°-40°	3935.6	31.1
0°-60°	6234.8	49.3
0°-90°	7323.9	57.9
90°-120°	1134.1	9.0
90°-150°	3852.7	30.5
90°-180°	5328.0	42.1
0°-180°	12652.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3558	3558	3558	3558	3558	
5°	3558	3542	3500	3530	3520	337
15°	3385	3349	3240	3178	3146	954
25°	3072	2969	2757	2625	2576	1413
35°	2647	2483	2200	1997	1926	1657
45°	2164	1948	1610	1381	1304	1671
55°	1646	1394	1046	854	792	1470
65°	1111	850	560	451	441	1102
75°	592	367	258	235	232	627
85°	138	71	61	61	61	159
90°	2	21	56	53	55	12
95°	84	100	103	103	100	93
105°	346	350	354	357	357	365
115°	644	653	650	648	644	637
125°	936	950	946	941	939	837
135°	1211	1229	1232	1230	1226	936
145°	1470	1481	1491	1492	1486	918
155°	1681	1685	1691	1699	1694	774
165°	1828	1827	1827	1838	1830	516
175°	1903	1898	1895	1906	1896	181
180°	1906	1906	1906	1906	1906	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3558.5	3558.5	3558.5	3558.5	3558.5
2.5°	3574.5	3558.5	3522.9	3555.4	3548.9
5°	3558.5	3542.4	3500.4	3529.5	3519.8
7.5°	3529.5	3510.3	3465.2	3477.8	3461.8
10°	3490.8	3468.3	3404.0	3394.1	3375.0
12.5°	3442.7	3413.6	3326.5	3307.4	3271.8
15°	3384.6	3349.0	3239.7	3178.5	3146.4
17.5°	3316.9	3265.3	3130.1	3059.3	3007.7
20°	3239.7	3175.1	3014.2	2933.9	2862.8
22.5°	3156.0	3081.9	2894.9	2785.7	2737.5
25°	3072.3	2969.2	2756.6	2624.7	2576.2
27.5°	2972.5	2862.8	2627.8	2476.4	2402.3
30°	2866.3	2743.6	2486.0	2322.0	2234.9
32.5°	2763.1	2614.8	2351.0	2157.7	2077.0
35°	2647.2	2482.9	2199.7	1996.7	1925.6
37.5°	2534.5	2357.2	2057.9	1835.5	1755.1
40°	2415.3	2222.2	1909.6	1681.0	1597.3
42.5°	2292.9	2086.9	1761.7	1523.2	1442.9
45°	2164.1	1948.2	1610.3	1381.4	1304.2
47.5°	2041.9	1813.3	1465.4	1236.5	1165.8
50°	1906.5	1677.9	1323.6	1101.2	1033.9
52.5°	1774.3	1532.7	1188.3	975.8	914.6
55°	1645.5	1394.4	1046.5	853.5	792.3
57.5°	1513.6	1255.9	921.2	740.7	689.1
60°	1378.3	1120.7	788.9	624.9	573.3
62.5°	1246.4	988.8	676.1	521.8	496.1
65°	1111.1	850.1	560.3	451.0	441.1
67.5°	982.3	721.3	451.0	396.0	386.4
70°	847.0	595.9	373.4	341.3	328.4
72.5°	718.2	479.7	312.3	286.6	280.2
75°	592.5	367.0	257.6	235.1	232.0
77.5°	467.1	260.7	202.9	189.9	183.5
80°	350.9	186.9	154.5	141.8	141.8
82.5°	244.6	125.7	106.2	99.8	99.8
85°	138.4	70.7	61.1	61.1	61.1
87.5°	51.6	25.7	25.7	22.6	22.6
90°	1.7	20.7	56.3	52.9	54.6
92.5°	35.6	48.3	50.0	51.7	51.7
95°	83.9	100.0	102.9	102.9	100.0
97.5°	139.7	154.5	160.9	160.9	160.9
100°	204.0	217.2	221.8	221.8	220.1
102.5°	271.8	281.5	287.9	289.6	287.9
105°	345.9	350.5	354.0	356.9	356.9
107.5°	419.5	426.4	426.4	427.6	419.5
110°	490.8	500.0	500.0	500.0	495.3



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	567.7	577.6	575.8	571.2	567.7
115°	643.6	652.8	650.0	648.2	643.6
117.5°	718.8	731.5	723.5	718.8	714.3
120°	794.7	807.4	794.7	794.7	789.5
122.5°	863.7	879.8	871.8	867.1	863.7
125°	936.1	950.5	945.9	940.7	939.0
127.5°	1006.8	1024.6	1018.3	1011.4	1006.8
130°	1072.9	1093.6	1090.7	1087.3	1080.9
132.5°	1147.0	1163.1	1164.2	1156.2	1151.6
135°	1210.8	1228.6	1232.1	1230.3	1225.7
137.5°	1282.0	1296.4	1299.2	1298.1	1291.2
140°	1344.7	1359.1	1367.1	1367.1	1360.8
142.5°	1409.0	1423.4	1428.0	1429.7	1423.4
145°	1470.0	1481.4	1490.6	1492.4	1486.1
147.5°	1524.6	1538.9	1545.8	1548.7	1542.4
150°	1580.9	1590.6	1597.0	1602.1	1597.0
152.5°	1630.8	1640.6	1648.6	1655.0	1648.6
155°	1680.8	1685.4	1690.7	1698.7	1693.5
157.5°	1724.0	1727.4	1730.3	1741.8	1733.7
160°	1762.5	1765.9	1767.6	1777.4	1770.5
162.5°	1798.1	1798.1	1799.8	1810.7	1802.7
165°	1828.5	1826.8	1826.8	1838.3	1830.2
167.5°	1856.1	1851.0	1851.0	1862.4	1854.4
170°	1876.8	1872.2	1870.5	1882.0	1872.2
172.5°	1891.2	1886.5	1884.8	1896.3	1886.5
175°	1902.6	1898.1	1894.6	1906.1	1896.3
177.5°	1909.0	1904.4	1900.9	1910.7	1900.9
180°	1906.1	1906.1	1906.1	1906.1	1906.1

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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	11.04	11.94	11.94	12.85	14.01	7.00	7.90	7.90	8.81	9.97
	3H	12.73	13.53	13.64	14.45	15.64	8.20	9.00	9.10	9.92	11.10
	4H	13.35	14.10	14.27	15.03	16.22	8.65	9.41	9.57	10.34	11.53
	6H	13.77	14.47	14.71	15.40	16.61	8.98	9.68	9.91	10.61	11.81
	8H	13.91	14.57	14.84	15.52	16.72	9.07	9.74	10.01	10.68	11.89
	12H	13.97	14.60	14.92	15.54	16.77	9.12	9.75	10.06	10.69	11.92
4H	2H	11.07	11.83	12.00	12.75	13.94	7.61	8.37	8.54	9.29	10.48
	3H	12.91	13.54	13.85	14.50	15.70	8.97	9.60	9.90	10.55	11.76
	4H	13.61	14.18	14.56	15.13	16.36	9.52	10.09	10.47	11.04	12.27
	6H	14.13	14.63	15.09	15.60	16.83	9.94	10.44	10.90	11.41	12.64
	8H	14.31	14.77	15.27	15.74	16.98	10.07	10.54	11.04	11.50	12.75
	12H	14.41	14.83	15.39	15.81	17.06	10.14	10.56	11.12	11.54	12.79
8H	4H	13.58	14.04	14.54	15.01	16.26	9.81	10.27	10.77	11.24	12.48
	6H	14.16	14.54	15.14	15.54	16.79	10.33	10.71	11.32	11.72	12.96
	8H	14.37	14.71	15.37	15.71	16.97	10.52	10.86	11.52	11.86	13.12
	12H	14.52	14.82	15.52	15.81	17.12	10.64	10.94	11.64	11.93	13.24
12H	4H	13.54	13.95	14.52	14.94	16.19	9.82	10.23	10.80	11.22	12.47
	6H	14.13	14.47	15.13	15.47	16.73	10.38	10.72	11.38	11.71	12.98
	8H	14.36	14.65	15.36	15.64	16.95	10.59	10.89	11.59	11.88	13.19

END OF REPORT