

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: P920204

Luminaire Tested: DFN2DIP-SQ3F0-100D060US935-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P920204
REPORT IS A COMBINATION OF REPORTS P899909 AND P896733
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ3F0-100D060US935-FLLFLL
Description: 3 foot, Square Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

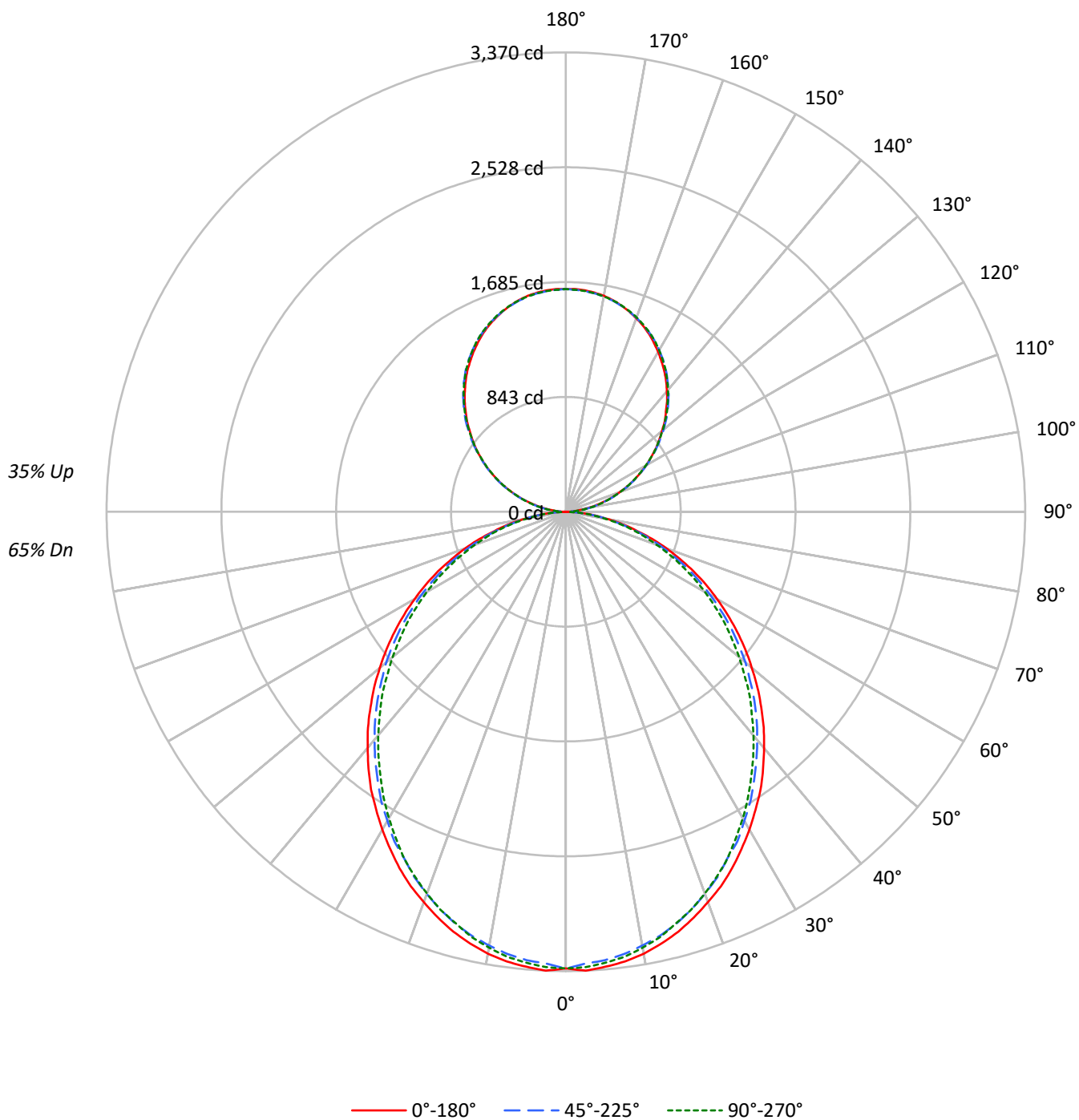
Lumens per Lamp: N/A
Luminaire Lumens: 13095.8 lumens
Efficiency: N/A
Efficacy: 91.2 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.06' x L: 3.06' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 143.6
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	30	10
RCR																	
0	111	111	111	111	104	104	104	104	92	92	92	80	80	80	70	70	70
1	101	97	93	89	95	91	88	84	81	78	75	71	69	67	62	60	59
2	92	85	78	73	86	80	74	69	71	66	63	62	59	56	55	52	50
3	84	74	67	61	79	70	63	58	62	57	53	55	51	47	48	45	42
4	77	66	58	52	72	62	55	49	55	50	45	49	44	41	43	40	37
5	71	59	50	44	66	56	48	42	50	44	39	44	39	35	39	35	32
6	65	53	45	39	61	50	43	37	45	39	34	40	35	31	35	31	28
7	60	48	40	34	57	45	38	33	41	35	30	36	31	28	32	28	25
8	56	44	36	30	53	41	34	29	37	31	27	33	28	25	30	26	22
9	52	40	32	27	49	38	31	26	34	28	24	31	26	22	27	23	20
10	49	37	29	24	46	35	28	23	32	26	22	28	24	20	25	21	19

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3839	3839	3839
5°	3842	3783	3809
10°	3809	3729	3757
15°	3750	3665	3675
20°	3672	3577	3591
25°	3594	3473	3494
30°	3498	3375	3372
35°	3406	3261	3242
40°	3293	3145	3119
45°	3180	3029	2993
50°	3057	2907	2847
55°	2927	2765	2712
60°	2781	2598	2558
65°	2621	2424	2376
70°	2417	2212	2180
75°	2135	1958	1996
80°	1795	1634	1650
85°	1263	1083	1080

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3180 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	315.3	2.4
10°-20°	887.2	6.8
20°-30°	1303.8	10.0
30°-40°	1514.3	11.6
40°-50°	1512.4	11.5
50°-60°	1318.8	10.1
60°-70°	974.9	7.4
70°-80°	551.6	4.2
80°-90°	150.2	1.1
90°-100°	101.1	0.8
100°-110°	321.2	2.5
110°-120°	549.7	4.2
120°-130°	723.0	5.5
130°-140°	811.5	6.2
140°-150°	795.8	6.1
150°-160°	667.5	5.1
160°-170°	442.7	3.4
170°-180°	154.7	1.2
0°-30°	2506.3	19.1
0°-40°	4020.6	30.7
0°-60°	6851.8	52.3
0°-90°	8528.5	65.1
90°-120°	972.0	7.4
90°-150°	3302.3	25.2
90°-180°	4567.0	34.9
0°-180°	13095.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3350	3350	3350	3350	3350	
5°	3350	3338	3302	3328	3322	318
15°	3189	3170	3128	3141	3125	898
25°	2886	2861	2806	2812	2806	1328
35°	2490	2458	2406	2387	2371	1555
45°	2026	2004	1955	1920	1907	1564
55°	1534	1514	1476	1437	1421	1371
65°	1034	1015	983	954	938	1023
75°	541	535	518	499	506	578
85°	132	129	126	116	113	147
90°	2	18	48	45	47	13
95°	72	86	88	88	86	80
105°	296	300	303	306	306	313
115°	552	560	557	556	552	546
125°	802	815	811	806	805	717
135°	1038	1053	1056	1055	1051	802
145°	1260	1270	1278	1279	1274	787
155°	1441	1445	1449	1456	1452	663
165°	1567	1566	1566	1576	1569	442
175°	1631	1627	1624	1634	1625	155
180°	1634	1634	1634	1634	1634	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3350.2	3350.2	3350.2	3350.2	3350.2
2.5°	3369.7	3353.6	3318.0	3350.2	3344.0
5°	3350.2	3337.6	3302.0	3327.7	3321.5
7.5°	3327.7	3308.5	3272.9	3298.9	3292.5
10°	3292.5	3269.9	3231.2	3256.9	3247.3
12.5°	3243.9	3224.8	3186.1	3202.2	3195.7
15°	3189.2	3170.1	3128.0	3141.0	3125.0
17.5°	3121.5	3102.4	3060.3	3076.4	3060.3
20°	3047.3	3028.2	2983.1	2992.7	2980.0
22.5°	2973.5	2944.5	2902.4	2902.4	2896.0
25°	2886.4	2860.8	2806.1	2812.2	2806.1
27.5°	2789.6	2767.1	2725.4	2715.8	2699.7
30°	2693.3	2667.3	2619.1	2609.5	2596.5
32.5°	2590.1	2570.9	2519.3	2499.8	2486.8
35°	2490.3	2458.1	2406.5	2387.0	2370.9
37.5°	2377.5	2348.4	2296.8	2274.2	2258.1
40°	2261.6	2235.6	2184.0	2155.3	2142.3
42.5°	2148.8	2122.8	2071.6	2039.1	2020.0
45°	2026.4	2003.9	1955.3	1920.1	1907.2
47.5°	1907.2	1884.6	1833.0	1797.4	1778.3
50°	1781.4	1765.3	1720.2	1675.1	1659.1
52.5°	1659.1	1636.5	1594.7	1559.3	1536.7
55°	1533.6	1514.2	1475.5	1436.8	1420.8
57.5°	1407.8	1391.7	1349.7	1311.1	1298.1
60°	1282.0	1269.4	1224.3	1188.7	1179.1
62.5°	1159.7	1137.1	1105.0	1072.9	1059.9
65°	1034.2	1014.8	982.7	953.6	937.5
67.5°	905.4	889.0	860.3	837.8	824.7
70°	786.1	773.1	744.1	721.5	708.9
72.5°	663.7	650.7	634.7	612.2	602.5
75°	541.1	534.9	518.5	499.4	505.8
77.5°	431.7	418.7	412.2	402.6	393.0
80°	322.3	318.9	312.4	302.8	296.4
82.5°	219.1	219.1	216.0	203.0	203.0
85°	131.9	128.9	125.8	115.9	112.8
87.5°	58.1	51.6	45.1	35.6	32.1
90°	1.5	17.7	48.3	45.3	46.8
92.5°	30.6	41.4	42.9	44.3	44.3
95°	71.9	85.7	88.2	88.2	85.7
97.5°	119.7	132.5	137.9	137.9	137.9
100°	174.9	186.1	190.1	190.1	188.6
102.5°	233.0	241.3	246.8	248.2	246.8
105°	296.5	300.5	303.4	305.9	305.9
107.5°	359.6	365.5	365.5	366.4	359.6
110°	420.7	428.5	428.5	428.5	424.6

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	486.6	495.0	493.5	489.6	486.6
115°	551.6	559.6	557.1	555.6	551.6
117.5°	616.2	627.1	620.1	616.2	612.3
120°	681.2	692.1	681.2	681.2	676.7
122.5°	740.3	754.1	747.2	743.3	740.3
125°	802.4	814.7	810.7	806.3	804.9
127.5°	863.0	878.2	872.8	866.9	863.0
130°	919.6	937.4	934.9	931.9	926.5
132.5°	983.2	996.9	997.9	991.0	987.0
135°	1037.8	1053.1	1056.0	1054.6	1050.6
137.5°	1098.9	1111.2	1113.7	1112.7	1106.8
140°	1152.6	1164.9	1171.8	1171.8	1166.4
142.5°	1207.7	1220.0	1224.0	1225.5	1220.0
145°	1260.0	1269.8	1277.7	1279.2	1273.8
147.5°	1306.7	1319.0	1325.0	1327.4	1322.0
150°	1355.0	1363.4	1368.8	1373.2	1368.8
152.5°	1397.8	1406.3	1413.2	1418.6	1413.2
155°	1440.7	1444.7	1449.1	1456.0	1451.6
157.5°	1477.6	1480.7	1483.1	1493.0	1486.1
160°	1510.7	1513.6	1515.1	1523.4	1517.6
162.5°	1541.2	1541.2	1542.6	1552.0	1545.1
165°	1567.3	1565.8	1565.8	1575.7	1568.8
167.5°	1591.0	1586.6	1586.6	1596.4	1589.5
170°	1608.7	1604.7	1603.3	1613.1	1604.7
172.5°	1621.0	1617.0	1615.6	1625.4	1617.0
175°	1630.8	1626.9	1623.9	1633.8	1625.4
177.5°	1636.2	1632.4	1629.4	1637.7	1629.4
180°	1633.8	1633.8	1633.8	1633.8	1633.8

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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	13.20	14.22	14.02	15.05	16.09	12.76	13.77	13.57	14.61	15.65
	3H	14.87	15.78	15.70	16.63	17.69	14.38	15.29	15.21	16.14	17.20
	4H	15.46	16.32	16.30	17.18	18.25	14.97	15.83	15.81	16.68	17.76
	6H	15.86	16.66	16.72	17.52	18.61	15.36	16.16	16.22	17.02	18.11
	8H	15.97	16.73	16.84	17.61	18.70	15.47	16.23	16.34	17.11	18.20
	12H	16.02	16.74	16.89	17.62	18.73	15.51	16.24	16.39	17.11	18.23
4H	2H	13.68	14.54	14.53	15.39	16.47	13.32	14.18	14.17	15.04	16.11
	3H	15.55	16.27	16.41	17.16	18.25	15.14	15.86	16.00	16.75	17.84
	4H	16.27	16.92	17.14	17.81	18.93	15.84	16.50	16.72	17.38	18.50
	6H	16.79	17.35	17.68	18.26	19.38	16.35	16.92	17.24	17.83	18.95
	8H	16.94	17.47	17.83	18.37	19.51	16.50	17.03	17.39	17.93	19.07
	12H	17.02	17.49	17.93	18.42	19.56	16.57	17.04	17.48	17.97	19.11
8H	4H	16.47	17.00	17.36	17.90	19.04	16.09	16.62	16.99	17.53	18.66
	6H	17.10	17.54	18.02	18.49	19.62	16.72	17.16	17.64	18.10	19.24
	8H	17.32	17.71	18.25	18.65	19.80	16.93	17.32	17.86	18.26	19.41
	12H	17.46	17.80	18.39	18.73	19.93	17.05	17.39	17.98	18.32	19.52
12H	4H	16.46	16.94	17.38	17.86	19.00	16.10	16.57	17.01	17.50	18.64
	6H	17.13	17.52	18.06	18.46	19.61	16.76	17.15	17.69	18.09	19.24
	8H	17.38	17.72	18.31	18.65	19.85	17.00	17.34	17.93	18.27	19.47