

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: P906564

Luminaire Tested: DFN2DIP-SQ3F0-100D060US835-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P906564
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-SQ3F0-100D060US835-FLLFLL
Description: 3 foot, Square Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

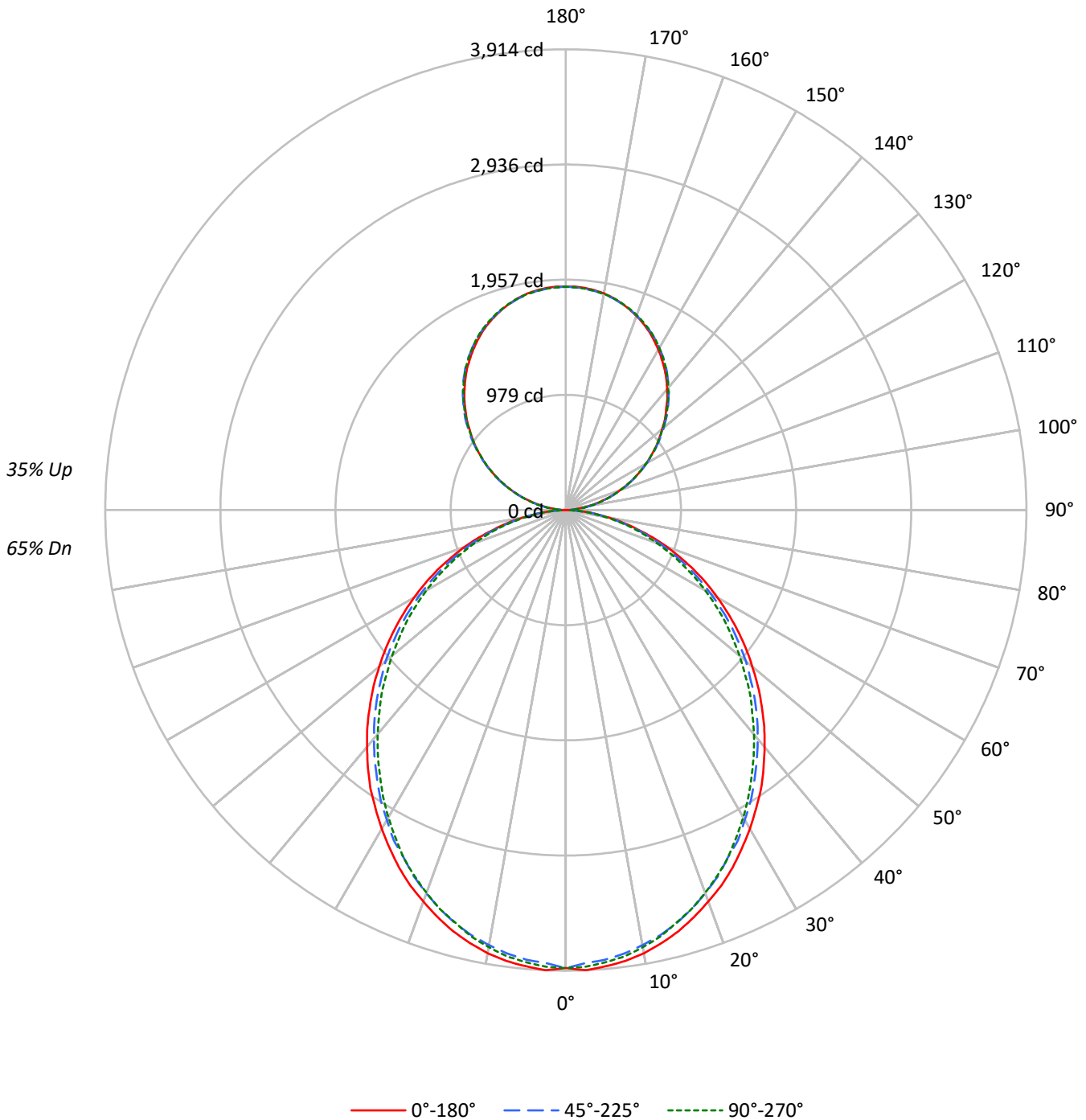
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 15210.0 lumens
Efficiency: N/A
Efficacy: 105.9 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			0	
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR																					
0	111	111	111	111	104	104	104	104	92	92	92	80	80	80	70	70	70	70	70	70	65
1	101	97	93	89	95	91	88	84	81	78	75	71	69	67	62	60	59	59	59	59	55
2	92	85	78	73	86	80	74	69	71	66	63	62	59	56	55	52	50	50	50	50	46
3	84	74	67	61	79	70	63	58	62	57	53	55	51	47	48	45	42	42	42	42	39
4	77	66	58	52	72	62	55	49	55	50	45	49	44	41	43	40	37	37	37	37	33
5	71	59	50	44	66	56	48	42	50	44	39	44	39	35	39	35	32	32	32	32	29
6	65	53	45	39	61	50	43	37	45	39	34	40	35	31	35	31	28	28	28	28	26
7	60	48	40	34	57	45	38	33	41	35	30	36	31	28	32	28	25	25	25	25	23
8	56	44	36	30	53	41	34	29	37	31	27	33	28	25	30	26	22	22	22	22	20
9	52	40	32	27	49	38	31	26	34	28	24	31	26	22	27	23	20	20	20	20	18
10	49	37	29	24	46	35	28	23	32	26	22	28	24	20	25	21	19	19	19	19	17

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4458	4458	4458
5°	4463	4393	4424
10°	4424	4331	4363
15°	4356	4257	4268
20°	4265	4155	4171
25°	4175	4034	4059
30°	4062	3920	3916
35°	3955	3787	3766
40°	3824	3653	3623
45°	3693	3518	3476
50°	3550	3376	3306
55°	3400	3212	3150
60°	3230	3017	2970
65°	3044	2816	2759
70°	2807	2569	2531
75°	2480	2274	2319
80°	2084	1897	1917
85°	1467	1258	1254

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 3693 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	366.2	2.4
10°-20°	1030.4	6.8
20°-30°	1514.3	10.0
30°-40°	1758.8	11.6
40°-50°	1756.6	11.5
50°-60°	1531.7	10.1
60°-70°	1132.3	7.4
70°-80°	640.6	4.2
80°-90°	174.5	1.1
90°-100°	117.4	0.8
100°-110°	373.1	2.5
110°-120°	638.5	4.2
120°-130°	839.7	5.5
130°-140°	942.5	6.2
140°-150°	924.2	6.1
150°-160°	775.3	5.1
160°-170°	514.2	3.4
170°-180°	179.7	1.2
0°-30°	2911.0	19.1
0°-40°	4669.7	30.7
0°-60°	7958.0	52.3
0°-90°	9905.4	65.1
90°-120°	1129.0	7.4
90°-150°	3835.4	25.2
90°-180°	5305.0	34.9
0°-180°	15210.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3891	3891	3891	3891	3891	
5°	3891	3876	3835	3865	3858	369
15°	3704	3682	3633	3648	3630	1043
25°	3352	3323	3259	3266	3259	1543
35°	2892	2855	2795	2772	2754	1806
45°	2354	2327	2271	2230	2215	1816
55°	1781	1759	1714	1669	1650	1592
65°	1201	1179	1141	1108	1089	1188
75°	628	621	602	580	588	671
85°	153	150	146	135	131	171
90°	2	21	56	53	54	15
95°	84	100	102	102	100	93
105°	344	349	352	355	355	363
115°	641	650	647	645	641	634
125°	932	946	942	936	935	833
135°	1205	1223	1226	1225	1220	932
145°	1463	1475	1484	1486	1479	914
155°	1673	1678	1683	1691	1686	770
165°	1820	1819	1819	1830	1822	514
175°	1894	1890	1886	1898	1888	180
180°	1898	1898	1898	1898	1898	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3891.1	3891.1	3891.1	3891.1	3891.1
2.5°	3913.7	3895.0	3853.7	3891.1	3883.9
5°	3891.1	3876.4	3835.1	3864.9	3857.7
7.5°	3864.9	3842.6	3801.3	3831.5	3824.0
10°	3824.0	3797.8	3752.9	3782.7	3771.6
12.5°	3767.6	3745.4	3700.5	3719.2	3711.6
15°	3704.1	3681.9	3633.0	3648.1	3629.5
17.5°	3625.5	3603.3	3554.4	3573.1	3554.4
20°	3539.3	3517.1	3464.7	3475.8	3461.1
22.5°	3453.6	3419.9	3371.0	3371.0	3363.5
25°	3352.4	3322.6	3259.1	3266.2	3259.1
27.5°	3240.0	3213.8	3165.4	3154.3	3135.6
30°	3128.1	3097.9	3041.9	3030.8	3015.7
32.5°	3008.2	2986.0	2926.0	2903.4	2888.3
35°	2892.3	2855.0	2795.0	2772.4	2753.7
37.5°	2761.3	2727.5	2667.6	2641.4	2622.7
40°	2626.7	2596.5	2536.6	2503.3	2488.2
42.5°	2495.7	2465.5	2406.0	2368.3	2346.1
45°	2353.6	2327.4	2271.0	2230.1	2215.1
47.5°	2215.1	2188.9	2128.9	2087.6	2065.4
50°	2069.0	2050.3	1997.9	1945.5	1926.9
52.5°	1926.9	1900.7	1852.2	1811.0	1784.8
55°	1781.2	1758.6	1713.7	1668.8	1650.2
57.5°	1635.1	1616.4	1567.6	1522.8	1507.7
60°	1489.0	1474.3	1421.9	1380.6	1369.5
62.5°	1346.9	1320.7	1283.4	1246.1	1231.0
65°	1201.2	1178.6	1141.3	1107.5	1088.9
67.5°	1051.6	1032.5	999.2	973.0	957.9
70°	913.0	897.9	864.2	838.0	823.3
72.5°	770.9	755.8	737.2	711.0	699.8
75°	628.4	621.3	602.2	580.0	587.5
77.5°	501.4	486.3	478.7	467.6	456.5
80°	374.3	370.4	362.8	351.7	344.2
82.5°	254.5	254.5	250.9	235.8	235.8
85°	153.2	149.7	146.1	134.6	131.0
87.5°	67.5	59.9	52.4	41.3	37.3
90°	1.7	20.6	56.1	52.6	54.3
92.5°	35.5	48.1	49.8	51.5	51.5
95°	83.5	99.5	102.4	102.4	99.5
97.5°	139.0	153.9	160.2	160.2	160.2
100°	203.1	216.2	220.8	220.8	219.1
102.5°	270.6	280.3	286.6	288.3	286.6
105°	344.4	349.0	352.4	355.3	355.3
107.5°	417.6	424.5	424.5	425.6	417.6
110°	488.6	497.7	497.7	497.7	493.1



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	565.2	574.9	573.2	568.6	565.2
115°	640.7	649.9	647.0	645.3	640.7
117.5°	715.7	728.3	720.2	715.7	711.1
120°	791.2	803.8	791.2	791.2	786.0
122.5°	859.8	875.8	867.8	863.3	859.8
125°	931.9	946.2	941.6	936.5	934.8
127.5°	1002.3	1020.0	1013.7	1006.9	1002.3
130°	1068.1	1088.7	1085.8	1082.4	1076.1
132.5°	1141.9	1157.9	1159.0	1151.0	1146.4
135°	1205.4	1223.1	1226.5	1224.8	1220.2
137.5°	1276.3	1290.6	1293.5	1292.3	1285.5
140°	1338.7	1353.0	1361.0	1361.0	1354.7
142.5°	1402.7	1417.0	1421.6	1423.3	1417.0
145°	1463.4	1474.8	1484.0	1485.7	1479.4
147.5°	1517.7	1532.0	1538.9	1541.7	1535.4
150°	1573.8	1583.5	1589.8	1594.9	1589.8
152.5°	1623.5	1633.3	1641.3	1647.6	1641.3
155°	1673.3	1677.9	1683.0	1691.1	1685.9
157.5°	1716.2	1719.7	1722.5	1734.0	1726.0
160°	1754.6	1758.0	1759.7	1769.4	1762.6
162.5°	1790.0	1790.0	1791.7	1802.6	1794.6
165°	1820.3	1818.6	1818.6	1830.1	1822.1
167.5°	1847.8	1842.7	1842.7	1854.1	1846.1
170°	1868.4	1863.8	1862.1	1873.5	1863.8
172.5°	1882.7	1878.1	1876.4	1887.8	1878.1
175°	1894.1	1889.6	1886.1	1897.6	1887.8
177.5°	1900.4	1895.9	1892.4	1902.1	1892.4
180°	1897.6	1897.6	1897.6	1897.6	1897.6



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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	13.72	14.74	14.54	15.57	16.61	13.28	14.29	14.09	15.13	16.17
	3H	15.39	16.30	16.22	17.15	18.21	14.90	15.81	15.73	16.66	17.72
	4H	15.98	16.84	16.82	17.70	18.77	15.49	16.35	16.33	17.20	18.28
	6H	16.38	17.18	17.24	18.04	19.13	15.88	16.68	16.74	17.54	18.63
	8H	16.49	17.25	17.36	18.13	19.22	15.99	16.75	16.86	17.63	18.72
	12H	16.54	17.26	17.41	18.14	19.25	16.03	16.76	16.91	17.63	18.75
4H	2H	14.20	15.06	15.05	15.91	16.99	13.84	14.70	14.69	15.56	16.63
	3H	16.07	16.79	16.93	17.68	18.77	15.66	16.38	16.52	17.27	18.36
	4H	16.79	17.44	17.66	18.33	19.45	16.36	17.02	17.24	17.90	19.02
	6H	17.31	17.87	18.20	18.78	19.90	16.87	17.44	17.76	18.35	19.47
	8H	17.46	17.99	18.35	18.89	20.03	17.02	17.55	17.91	18.45	19.59
	12H	17.54	18.01	18.45	18.94	20.08	17.09	17.56	18.00	18.49	19.63
8H	4H	16.99	17.52	17.88	18.42	19.56	16.61	17.14	17.51	18.05	19.18
	6H	17.62	18.06	18.54	19.01	20.14	17.24	17.68	18.16	18.62	19.76
	8H	17.84	18.23	18.77	19.17	20.32	17.45	17.84	18.38	18.78	19.93
	12H	17.98	18.32	18.91	19.25	20.45	17.57	17.91	18.50	18.84	20.04
12H	4H	16.98	17.46	17.90	18.38	19.52	16.62	17.09	17.53	18.02	19.16
	6H	17.65	18.04	18.58	18.98	20.13	17.28	17.67	18.21	18.61	19.76
	8H	17.90	18.24	18.83	19.17	20.37	17.52	17.86	18.45	18.79	19.99