

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: P906850

Luminaire Tested: DFN2DIP-SQ4F0-110D070US835-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P906850
REPORT IS A COMBINATION OF REPORTS P900088 AND P896915
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ4F0-110D070US835-RLLFLL
Description: 4 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

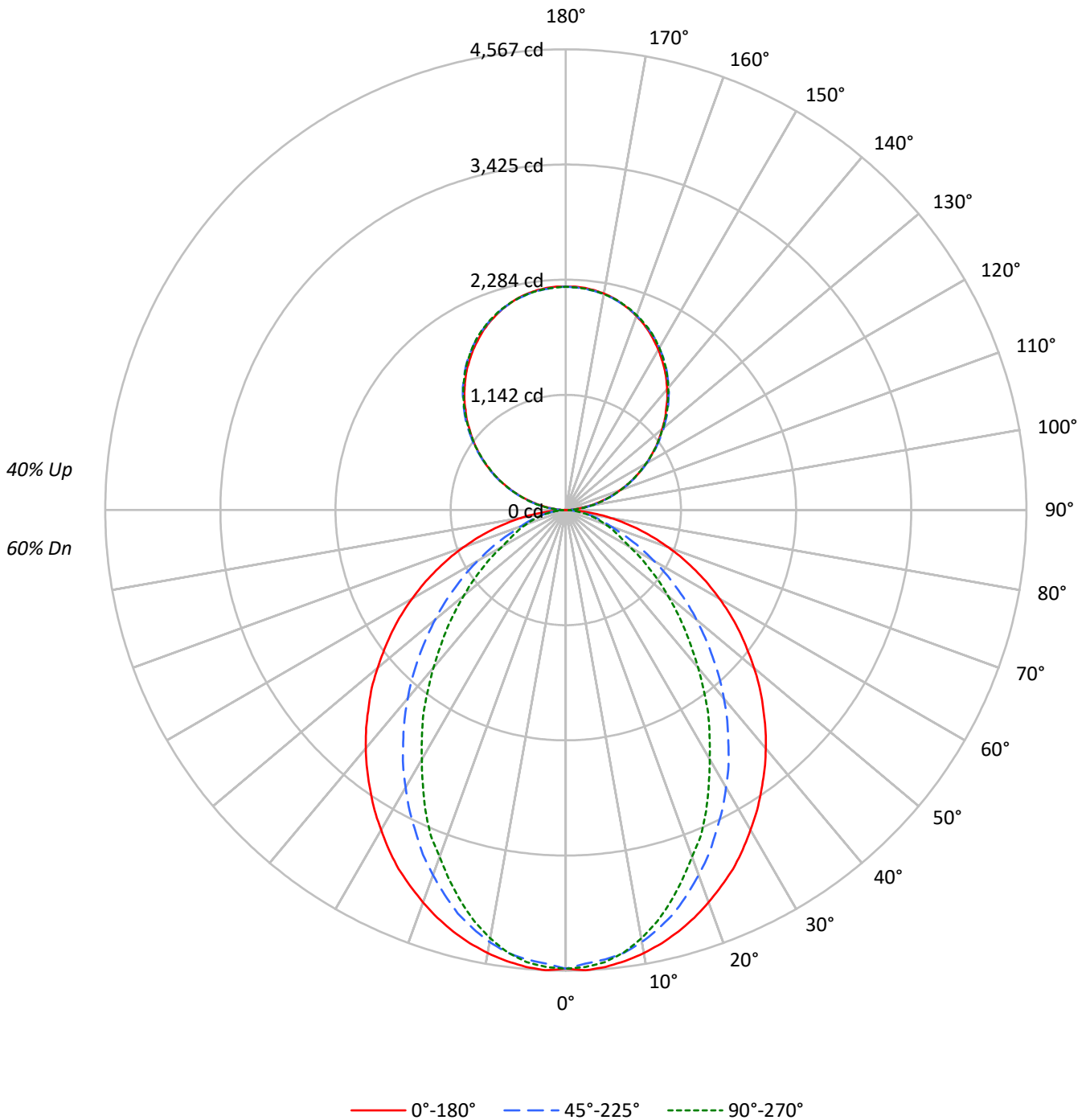
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 15545.0 lumens
Efficiency: N/A
Efficacy: 98.8 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: Semi-Direct

Input Watts (W): 157.3
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9951
Total Harmonic Distortion (THDi): 0.07
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	110	110	110	110	102	102	102	102	89	89	89	77	77	77	65	65	65	60			
1	101	96	93	89	94	90	87	84	79	77	74	68	67	65	59	58	56	52			
2	92	85	79	74	86	80	74	70	70	66	63	61	58	55	52	50	48	44			
3	84	75	68	62	79	71	64	59	62	57	53	54	51	47	47	44	42	38			
4	78	67	59	53	72	63	56	51	56	50	46	49	45	41	42	39	37	33			
5	71	60	52	46	67	57	49	44	50	44	40	44	40	36	38	35	32	29			
6	66	54	46	40	62	51	44	39	45	40	35	40	36	32	35	32	29	26			
7	61	49	41	36	57	46	39	34	41	36	31	37	32	29	32	29	26	23			
8	57	45	37	32	53	42	36	31	38	32	28	34	29	26	30	26	23	21			
9	53	41	34	29	50	39	32	28	35	29	25	31	27	23	28	24	21	19			
10	50	38	31	26	47	36	29	25	32	27	23	29	24	21	26	22	19	18			

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3190	3190	3190
5°	3195	3140	3160
10°	3163	3079	3058
15°	3120	2978	2900
20°	3062	2838	2706
25°	3003	2681	2518
30°	2924	2521	2280
35°	2846	2348	2070
40°	2767	2169	1830
45°	2675	1970	1612
50°	2580	1770	1399
55°	2481	1555	1195
60°	2367	1331	984
65°	2234	1103	887
70°	2074	890	804
75°	1873	786	734
80°	1582	662	640
85°	1102	445	487

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 2675 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	426.1	2.7
10°-20°	1169.7	7.5
20°-30°	1642.2	10.6
30°-40°	1790.1	11.5
40°-50°	1645.3	10.6
50°-60°	1292.1	8.3
60°-70°	841.1	5.4
70°-80°	432.9	2.8
80°-90°	116.8	0.8
90°-100°	137.0	0.9
100°-110°	435.3	2.8
110°-120°	744.9	4.8
120°-130°	979.6	6.3
130°-140°	1099.6	7.1
140°-150°	1078.3	6.9
150°-160°	904.5	5.8
160°-170°	599.9	3.9
170°-180°	209.7	1.3
0°-30°	3238.0	20.8
0°-40°	5028.1	32.3
0°-60°	7965.5	51.2
0°-90°	9356.3	60.2
90°-120°	1317.2	8.5
90°-150°	4474.7	28.8
90°-180°	6189.0	39.8
0°-180°	15545.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	4546	4546	4546	4546	4546	
5°	4546	4526	4472	4509	4497	431
15°	4324	4279	4139	4061	4020	1218
25°	3925	3793	3522	3353	3291	1805
35°	3382	3172	2810	2551	2460	2117
45°	2765	2489	2057	1765	1666	2135
55°	2102	1781	1337	1090	1012	1879
65°	1420	1086	716	576	564	1407
75°	757	469	329	300	296	801
85°	177	90	78	78	78	203
90°	2	24	65	61	63	15
95°	97	116	120	120	116	108
105°	402	407	411	414	414	424
115°	748	758	755	753	748	739
125°	1087	1104	1099	1093	1091	972
135°	1406	1427	1431	1429	1424	1087
145°	1707	1721	1731	1733	1726	1067
155°	1952	1958	1964	1973	1967	899
165°	2124	2122	2122	2135	2126	599
175°	2210	2204	2200	2214	2202	210
180°	2214	2214	2214	2214	2214	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	4546.3	4546.3	4546.3	4546.3	4546.3
2.5°	4566.8	4546.3	4500.9	4542.4	4534.1
5°	4546.3	4525.8	4472.1	4509.2	4497.0
7.5°	4509.2	4484.7	4427.1	4443.3	4422.7
10°	4459.9	4431.0	4349.0	4336.3	4311.9
12.5°	4398.3	4361.2	4249.9	4225.4	4180.0
15°	4324.1	4278.7	4139.0	4060.9	4019.8
17.5°	4237.7	4171.8	3998.9	3908.5	3842.6
20°	4139.0	4056.5	3850.9	3748.3	3657.5
22.5°	4032.1	3937.3	3698.6	3558.9	3497.3
25°	3925.1	3793.3	3521.8	3353.3	3291.3
27.5°	3797.7	3657.5	3357.2	3163.8	3069.1
30°	3661.9	3505.2	3176.1	2966.5	2855.2
32.5°	3530.1	3340.6	3003.6	2756.6	2653.6
35°	3382.1	3172.1	2810.3	2551.0	2460.2
37.5°	3238.1	3011.5	2629.1	2344.9	2242.4
40°	3085.7	2839.1	2439.7	2147.6	2040.7
42.5°	2929.4	2666.2	2250.7	1946.0	1843.4
45°	2764.9	2489.0	2057.3	1764.8	1666.2
47.5°	2608.6	2316.6	1872.2	1579.7	1489.4
50°	2435.7	2143.7	1691.1	1406.9	1320.9
52.5°	2266.8	1958.2	1518.2	1246.7	1168.5
55°	2102.2	1781.4	1337.0	1090.4	1012.3
57.5°	1933.8	1604.6	1176.8	946.4	880.4
60°	1760.9	1431.8	1007.9	798.4	732.5
62.5°	1592.4	1263.3	863.9	666.6	633.8
65°	1419.5	1086.0	715.9	576.2	563.5
67.5°	1255.0	921.5	576.2	505.9	493.7
70°	1082.1	761.3	477.1	436.1	419.5
72.5°	917.5	612.9	399.0	366.2	357.9
75°	756.9	468.8	329.1	300.3	296.4
77.5°	596.7	333.1	259.3	242.7	234.4
80°	448.3	238.8	197.3	181.2	181.2
82.5°	312.5	160.6	135.8	127.5	127.5
85°	176.8	90.4	78.1	78.1	78.1
87.5°	65.9	32.7	32.7	28.8	28.8
90°	2.0	24.0	65.4	61.4	63.4
92.5°	41.4	56.1	58.1	60.1	60.1
95°	97.4	116.1	119.5	119.5	116.1
97.5°	162.2	179.5	186.9	186.9	186.9
100°	236.9	252.3	257.6	257.6	255.6
102.5°	315.7	327.0	334.4	336.4	334.4
105°	401.8	407.1	411.1	414.5	414.5
107.5°	487.2	495.2	495.2	496.6	487.2
110°	570.0	580.7	580.7	580.7	575.3



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	659.4	670.8	668.8	663.4	659.4
115°	747.5	758.2	754.9	752.9	747.5
117.5°	834.9	849.6	840.3	834.9	829.6
120°	923.0	937.7	923.0	923.0	917.0
122.5°	1003.1	1021.8	1012.5	1007.1	1003.1
125°	1087.2	1103.9	1098.6	1092.6	1090.6
127.5°	1169.3	1190.0	1182.7	1174.7	1169.3
130°	1246.1	1270.1	1266.8	1262.8	1255.4
132.5°	1332.2	1350.9	1352.2	1342.9	1337.5
135°	1406.3	1426.9	1431.0	1428.9	1423.6
137.5°	1489.0	1505.7	1509.0	1507.7	1499.7
140°	1561.8	1578.5	1587.8	1587.8	1580.5
142.5°	1636.5	1653.2	1658.5	1660.5	1653.2
145°	1707.3	1720.6	1731.3	1733.3	1726.0
147.5°	1770.7	1787.4	1795.4	1798.7	1791.4
150°	1836.1	1847.4	1854.8	1860.8	1854.8
152.5°	1894.1	1905.5	1914.8	1922.2	1914.8
155°	1952.2	1957.5	1963.6	1972.9	1966.9
157.5°	2002.3	2006.3	2009.6	2023.0	2013.6
160°	2047.0	2051.0	2053.0	2064.3	2056.3
162.5°	2088.4	2088.4	2090.4	2103.0	2093.7
165°	2123.7	2121.7	2121.7	2135.1	2125.7
167.5°	2155.8	2149.8	2149.8	2163.1	2153.8
170°	2179.8	2174.5	2172.5	2185.8	2174.5
172.5°	2196.5	2191.1	2189.1	2202.5	2191.1
175°	2209.8	2204.5	2200.5	2213.8	2202.5
177.5°	2217.2	2211.8	2207.8	2219.2	2207.8
180°	2213.8	2213.8	2213.8	2213.8	2213.8



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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	12.09	13.01	12.96	13.90	15.02	8.05	8.97	8.92	9.86	10.98
	3H	13.78	14.60	14.66	15.50	16.65	9.25	10.07	10.13	10.97	12.12
	4H	14.39	15.17	15.30	16.08	17.23	9.70	10.48	10.60	11.38	12.54
	6H	14.82	15.54	15.74	16.45	17.62	10.03	10.74	10.94	11.65	12.82
	8H	14.96	15.64	15.88	16.56	17.73	10.12	10.80	11.04	11.73	12.90
	12H	15.02	15.67	15.95	16.59	17.78	10.17	10.82	11.09	11.74	12.93
4H	2H	12.12	12.90	13.02	13.80	14.96	8.66	9.44	9.57	10.34	11.50
	3H	13.96	14.61	14.88	15.54	16.71	10.02	10.67	10.93	11.60	12.77
	4H	14.66	15.25	15.59	16.18	17.38	10.57	11.16	11.50	12.09	13.29
	6H	15.19	15.69	16.13	16.65	17.84	11.00	11.50	11.94	12.46	13.66
	8H	15.36	15.84	16.31	16.79	18.00	11.13	11.60	12.07	12.55	13.76
	12H	15.47	15.89	16.43	16.86	18.07	11.20	11.62	12.16	12.59	13.81
8H	4H	14.64	15.11	15.58	16.06	17.27	10.86	11.33	11.80	12.28	13.49
	6H	15.21	15.60	16.18	16.59	17.80	11.38	11.77	12.35	12.76	13.97
	8H	15.43	15.77	16.41	16.75	17.98	11.58	11.92	12.55	12.90	14.13
	12H	15.58	15.88	16.55	16.85	18.13	11.70	12.00	12.68	12.98	14.25
12H	4H	14.59	15.02	15.55	15.98	17.20	10.87	11.30	11.83	12.26	13.48
	6H	15.19	15.53	16.16	16.51	17.74	11.43	11.78	12.41	12.76	13.99
	8H	15.41	15.72	16.39	16.69	17.97	11.65	11.95	12.63	12.93	14.20