

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: P907552

Luminaire Tested: DFN2DIP-TR4F0-110D110US835-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P907552
REPORT IS A COMBINATION OF REPORTS P900510 AND P897293
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR4F0-110D110US835-RLLFLL
Description: 4 foot, Triangle Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

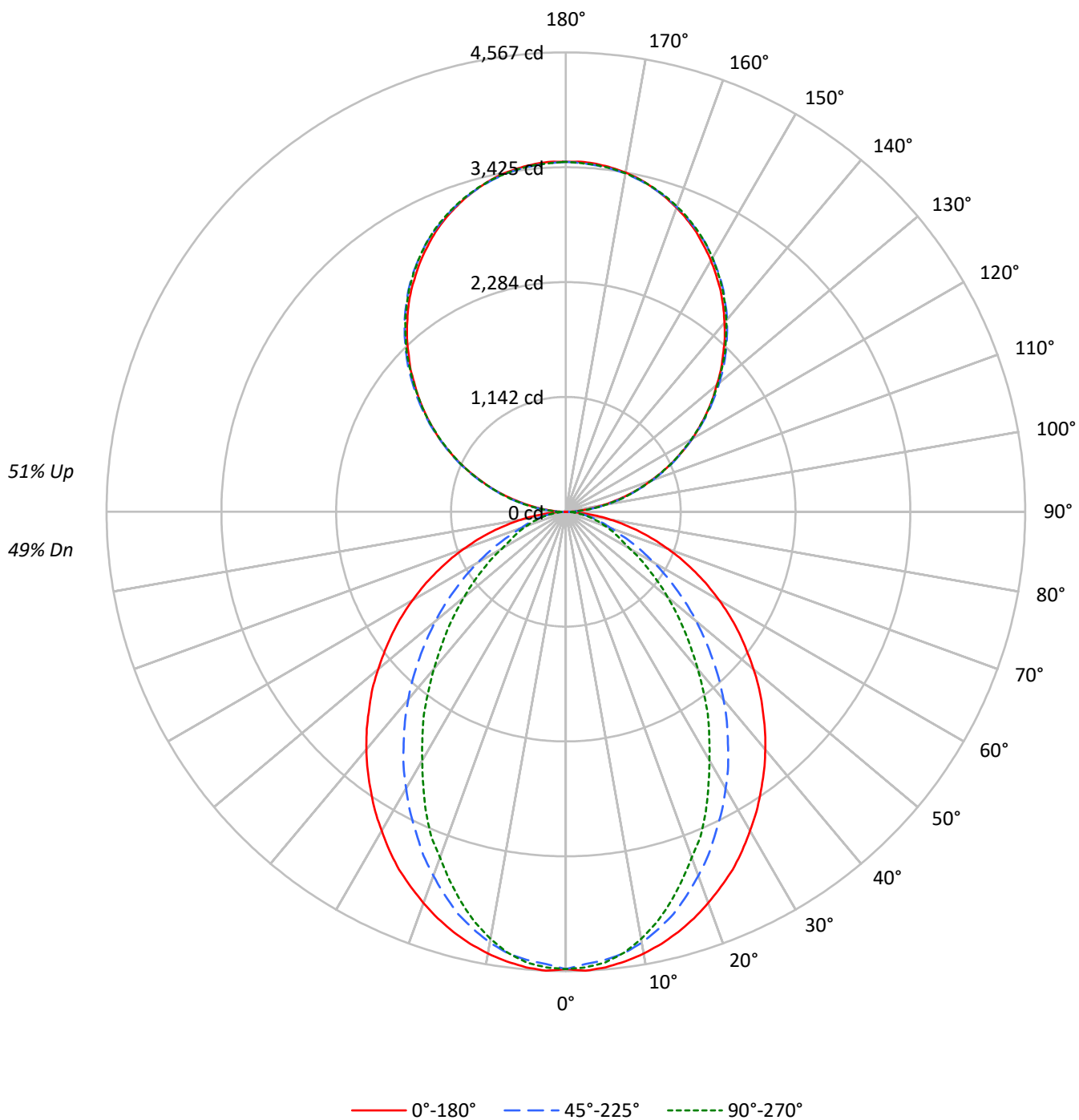
Lumens per Lamp: N/A
Luminaire Lumens: 19085.0 lumens
Efficiency: N/A
Efficacy: 96.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.43' x L: 3.96' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 197.4
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9613
Total Harmonic Distortion (THDi): 0.083
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	107	107	107	107	99	99	99	99	83	83	83	68	68	68	55	55	55
1	98	94	90	87	90	87	84	81	73	71	69	61	59	58	50	49	48
2	90	83	77	72	82	76	71	67	65	61	58	54	51	49	44	42	41
3	82	73	66	60	75	68	61	57	58	53	49	48	45	42	40	37	35
4	75	65	57	51	69	60	54	48	51	46	42	43	40	36	36	33	31
5	69	58	50	44	64	54	47	42	46	41	37	39	35	32	32	29	27
6	64	52	44	39	59	49	42	37	42	36	32	35	31	28	30	26	24
7	59	47	40	34	55	44	37	32	38	33	29	32	28	25	27	24	22
8	55	43	36	30	51	40	33	29	35	29	26	30	26	23	25	22	20
9	51	39	32	27	47	37	30	26	32	27	23	27	23	20	23	20	18
10	48	36	29	24	44	34	28	23	30	24	21	25	21	19	22	18	16

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3612	3612	3612
5°	3618	3554	3577
10°	3582	3485	3461
15°	3532	3369	3280
20°	3467	3211	3060
25°	3400	3033	2846
30°	3311	2850	2576
35°	3223	2654	2338
40°	3134	2451	2066
45°	3030	2226	1819
50°	2922	1998	1578
55°	2810	1755	1346
60°	2680	1501	1108
65°	2531	1243	997
70°	2350	1002	902
75°	2123	883	820
80°	1794	741	711
85°	1250	494	534

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 3030 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	426.1	2.2
10°-20°	1169.7	6.1
20°-30°	1642.2	8.6
30°-40°	1790.1	9.4
40°-50°	1645.3	8.6
50°-60°	1292.1	6.8
60°-70°	841.1	4.4
70°-80°	432.9	2.3
80°-90°	120.4	0.6
90°-100°	215.3	1.1
100°-110°	684.0	3.6
110°-120°	1170.5	6.1
120°-130°	1539.4	8.1
130°-140°	1727.9	9.1
140°-150°	1694.4	8.9
150°-160°	1421.4	7.4
160°-170°	942.6	4.9
170°-180°	329.5	1.7
0°-30°	3238.0	17.0
0°-40°	5028.1	26.3
0°-60°	7965.5	41.7
0°-90°	9359.9	49.0
90°-120°	2069.8	10.8
90°-150°	7031.6	36.8
90°-180°	9725.0	51.0
0°-180°	19085.0	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°	3	38	103	96	100	19
95°	153	182	188	188	182	170
105°	631	640	646	651	651	666
115°	1175	1191	1186	1183	1175	1162
125°	1708	1735	1726	1717	1714	1527
135°	2210	2242	2249	2246	2237	1708
145°	2683	2704	2721	2724	2712	1676
155°	3068	3076	3086	3100	3091	1412
165°	3337	3334	3334	3355	3340	941
175°	3473	3464	3458	3479	3461	330
180°	3479	3479	3479	3479	3479	

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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°	3.1	37.8	102.8	96.5	99.6
92.5°	65.0	88.1	91.2	94.4	94.4
95°	153.1	182.5	187.7	187.7	182.5
97.5°	254.9	282.1	293.7	293.7	293.7
100°	372.3	396.4	404.8	404.8	401.7
102.5°	496.1	513.9	525.5	528.6	525.5
105°	631.4	639.8	646.1	651.3	651.3
107.5°	765.6	778.2	778.2	780.3	765.6
110°	895.7	912.5	912.5	912.5	904.1

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1036.2	1054.0	1050.9	1042.5	1036.2
115°	1174.7	1191.4	1186.2	1183.1	1174.7
117.5°	1312.1	1335.1	1320.4	1312.1	1303.7
120°	1450.5	1473.6	1450.5	1450.5	1441.1
122.5°	1576.4	1605.7	1591.0	1582.6	1576.4
125°	1708.5	1734.7	1726.3	1716.9	1713.7
127.5°	1837.5	1870.0	1858.5	1845.9	1837.5
130°	1958.1	1995.9	1990.6	1984.3	1972.8
132.5°	2093.4	2122.8	2124.9	2110.2	2101.8
135°	2209.8	2242.3	2248.6	2245.5	2237.1
137.5°	2339.9	2366.1	2371.3	2369.2	2356.7
140°	2454.2	2480.4	2495.1	2495.1	2483.6
142.5°	2571.7	2597.9	2606.3	2609.4	2597.9
145°	2682.8	2703.8	2720.6	2723.7	2712.2
147.5°	2782.5	2808.7	2821.3	2826.5	2815.0
150°	2885.3	2903.1	2914.6	2924.1	2914.6
152.5°	2976.5	2994.3	3009.0	3020.6	3009.0
155°	3067.8	3076.1	3085.6	3100.3	3090.8
157.5°	3146.4	3152.7	3157.9	3178.9	3164.2
160°	3216.7	3223.0	3226.1	3244.0	3231.4
162.5°	3281.7	3281.7	3284.9	3304.8	3290.1
165°	3337.3	3334.1	3334.1	3355.1	3340.4
167.5°	3387.6	3378.2	3378.2	3399.2	3384.5
170°	3425.4	3417.0	3413.9	3434.8	3417.0
172.5°	3451.6	3443.2	3440.1	3461.1	3443.2
175°	3472.6	3464.2	3457.9	3478.9	3461.1
177.5°	3484.1	3475.7	3469.4	3487.3	3469.4
180°	3478.9	3478.9	3478.9	3478.9	3478.9

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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	11.51	12.33	12.48	13.32	14.60	7.49	8.31	8.46	9.29	10.58
	3H	13.19	13.92	14.17	14.91	16.22	8.67	9.41	9.66	10.40	11.71
	4H	13.80	14.49	14.79	15.49	16.80	9.12	9.82	10.12	10.81	12.13
	6H	14.22	14.86	15.22	15.86	17.19	9.45	10.09	10.45	11.09	12.42
	8H	14.34	14.95	15.36	15.97	17.29	9.54	10.15	10.55	11.16	12.49
	12H	14.40	14.98	15.42	15.99	17.34	9.58	10.16	10.60	11.17	12.52
4H	2H	11.53	12.22	12.53	13.22	14.54	8.08	8.78	9.08	9.77	11.09
	3H	13.36	13.94	14.37	14.96	16.29	9.43	10.01	10.44	11.03	12.36
	4H	14.05	14.58	15.07	15.59	16.95	9.98	10.51	11.00	11.52	12.88
	6H	14.56	15.02	15.59	16.06	17.41	10.40	10.85	11.43	11.89	13.24
	8H	14.74	15.16	15.77	16.19	17.56	10.53	10.95	11.56	11.98	13.35
	12H	14.83	15.22	15.88	16.26	17.63	10.59	10.98	11.64	12.02	13.39
8H	4H	14.02	14.44	15.05	15.47	16.84	10.26	10.68	11.29	11.71	13.08
	6H	14.58	14.93	15.64	16.01	17.37	10.78	11.13	11.83	12.20	13.56
	8H	14.80	15.11	15.86	16.17	17.55	10.97	11.28	12.03	12.34	13.72
	12H	14.94	15.21	16.00	16.26	17.69	11.09	11.36	12.15	12.41	13.84
12H	4H	13.97	14.35	15.02	15.40	16.77	10.26	10.64	11.31	11.69	13.06
	6H	14.56	14.87	15.62	15.92	17.31	10.83	11.13	11.89	12.19	13.58
	8H	14.78	15.05	15.84	16.10	17.53	11.04	11.31	12.10	12.36	13.79

END OF REPORT

FIELD PERFORMANCE MAY DIFFER FROM LABORATORY PERFORMANCE

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