

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: P926645

Luminaire Tested: DFN2DIP-TR4F0-110D100US950-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P926645
REPORT IS A COMBINATION OF REPORTS P902012 AND P898849
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR4F0-110D100US950-RLLONL
Description: 4 foot, Triangle Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

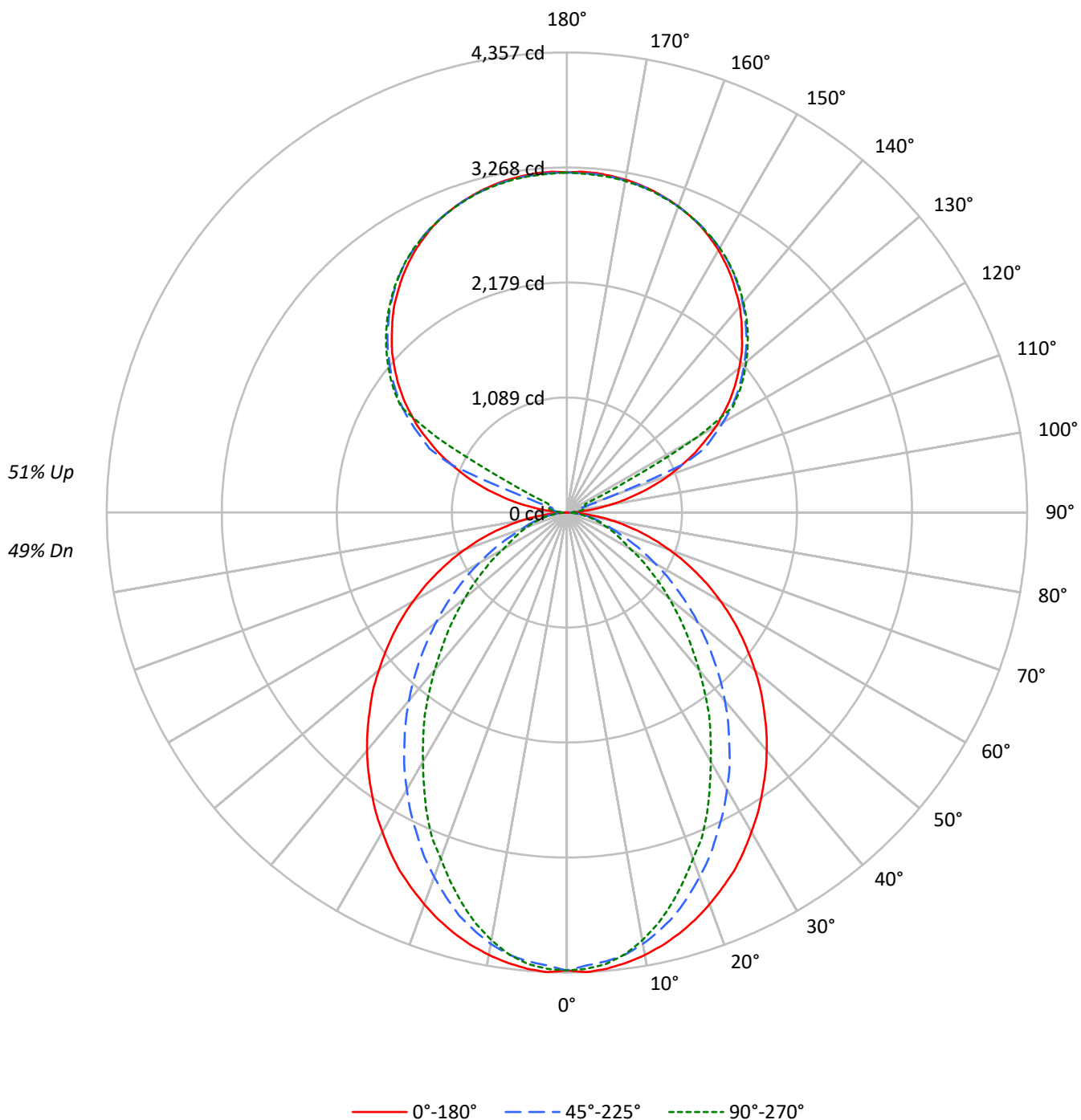
Lumens per Lamp: N/A
Luminaire Lumens: 18364.5 lumens
Efficiency: N/A
Efficacy: 97.2 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.43' x L: 3.96' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 189
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	98	98	98	98	83	83	83	68	68	68	55	55	55
1	98	94	90	87	90	87	83	81	73	71	69	61	59	58	49	48	47
2	90	82	77	72	82	76	71	67	65	61	58	54	51	49	44	42	40
3	82	73	66	60	75	68	61	56	57	53	49	48	45	42	39	37	35
4	75	65	57	51	69	60	53	48	51	46	42	43	39	36	35	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	36	42	36	32	35	31	28	29	26	24
7	59	47	39	34	55	44	37	32	38	33	29	32	28	25	27	24	21
8	55	43	35	30	51	40	33	29	35	29	26	30	25	22	25	22	19
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	27	23	29	24	21	25	21	18	21	18	16

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3446	3446	3446
5°	3451	3391	3413
10°	3417	3324	3301
15°	3370	3214	3130
20°	3308	3063	2919
25°	3244	2893	2715
30°	3159	2719	2457
35°	3075	2532	2231
40°	2989	2338	1971
45°	2890	2123	1735
50°	2788	1906	1505
55°	2681	1675	1284
60°	2557	1432	1057
65°	2415	1186	951
70°	2242	956	861
75°	2025	843	783
80°	1711	707	679
85°	1193	471	509

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2890 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	406.5	2.2
10°-20°	1115.9	6.1
20°-30°	1566.7	8.5
30°-40°	1707.7	9.3
40°-50°	1569.6	8.5
50°-60°	1232.7	6.7
60°-70°	802.4	4.4
70°-80°	413.0	2.2
80°-90°	111.1	0.6
90°-100°	106.2	0.6
100°-110°	395.8	2.2
110°-120°	1049.6	5.7
120°-130°	1740.9	9.5
130°-140°	1849.2	10.1
140°-150°	1718.7	9.4
150°-160°	1381.8	7.5
160°-170°	890.4	4.8
170°-180°	306.5	1.7
0°-30°	3089.0	16.8
0°-40°	4796.8	26.1
0°-60°	7599.1	41.4
0°-90°	8925.6	48.6
90°-120°	1551.6	8.4
90°-150°	6860.4	37.4
90°-180°	9439.0	51.4
0°-180°	18364.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	4337	4337	4337	4337	4337	
5°	4337	4318	4266	4302	4290	411
15°	4125	4082	3949	3874	3835	1162
25°	3744	3619	3360	3199	3140	1722
35°	3226	3026	2681	2434	2347	2019
45°	2638	2374	1963	1684	1590	2037
55°	2006	1700	1276	1040	966	1792
65°	1354	1036	683	550	538	1343
75°	722	447	314	286	283	764
85°	169	86	74	74	74	194
90°	2	28	46	58	63	17
95°	151	74	91	103	100	179
105°	708	778	142	168	177	757
115°	1340	1379	1438	359	191	1319
125°	1894	1924	1969	1985	1992	1689
135°	2344	2381	2402	2425	2421	1810
145°	2719	2716	2756	2772	2761	1700
155°	2994	2973	3001	3015	2996	1380
165°	3154	3140	3147	3164	3147	891
175°	3226	3210	3215	3231	3208	307
180°	3220	3220	3220	3220	3220	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	4337.2	4337.2	4337.2	4337.2	4337.2
2.5°	4356.7	4337.2	4293.9	4333.4	4325.5
5°	4337.2	4317.6	4266.4	4301.8	4290.1
7.5°	4301.8	4278.4	4223.5	4238.9	4219.3
10°	4254.7	4227.2	4148.9	4136.8	4113.6
12.5°	4196.0	4160.6	4054.4	4031.0	3987.7
15°	4125.2	4081.9	3948.6	3874.1	3834.9
17.5°	4042.8	3979.9	3815.0	3728.7	3665.8
20°	3948.6	3869.9	3673.8	3575.9	3489.3
22.5°	3846.6	3756.2	3528.5	3395.2	3336.4
25°	3744.5	3618.8	3359.8	3199.0	3139.9
27.5°	3623.0	3489.3	3202.8	3018.3	2927.9
30°	3493.5	3344.0	3030.0	2830.0	2723.9
32.5°	3367.7	3186.9	2865.4	2629.8	2531.5
35°	3226.5	3026.2	2681.0	2433.7	2347.0
37.5°	3089.1	2873.0	2508.2	2237.0	2139.2
40°	2943.8	2708.5	2327.5	2048.8	1946.8
42.5°	2794.6	2543.6	2147.2	1856.5	1758.6
45°	2637.7	2374.5	1962.7	1683.6	1589.6
47.5°	2488.6	2210.0	1786.1	1507.0	1420.9
50°	2323.7	2045.1	1613.3	1342.2	1260.1
52.5°	2162.5	1868.1	1448.4	1189.4	1114.7
55°	2005.5	1699.5	1275.5	1040.2	965.7
57.5°	1844.8	1530.8	1122.7	902.9	839.9
60°	1679.9	1365.9	961.5	761.7	698.8
62.5°	1519.1	1205.2	824.2	635.9	604.6
65°	1354.2	1036.0	683.0	549.7	537.6
67.5°	1197.3	879.1	549.7	482.6	471.0
70°	1032.3	726.3	455.2	416.0	400.2
72.5°	875.3	584.7	380.6	349.4	341.4
75°	722.1	447.2	314.0	286.5	282.8
77.5°	569.3	317.8	247.4	231.5	223.6
80°	427.7	227.8	188.2	172.9	172.9
82.5°	298.1	153.2	129.6	121.6	121.6
85°	168.7	86.2	74.5	74.5	74.5
87.5°	62.9	31.2	31.2	27.5	27.5
90°	2.2	28.0	46.5	58.4	62.8
92.5°	58.4	48.9	55.9	60.6	62.8
95°	151.3	74.4	90.7	102.7	100.2
97.5°	272.5	81.6	118.7	125.8	128.1
100°	412.5	93.2	132.8	151.3	156.1
102.5°	566.0	561.6	137.5	162.9	170.1
105°	708.2	778.2	142.2	167.6	177.1
107.5°	873.7	931.8	146.9	172.4	181.7
110°	1032.1	1080.9	407.7	174.9	183.9

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1181.2	1223.0	1183.5	179.3	186.5
115°	1339.5	1379.1	1437.5	358.8	191.2
117.5°	1477.0	1523.5	1563.3	1230.0	619.7
120°	1630.9	1665.7	1707.8	1735.7	1421.2
122.5°	1761.2	1798.5	1845.2	1859.1	1861.5
125°	1894.0	1924.4	1968.7	1985.0	1991.9
127.5°	2015.1	2047.8	2082.9	2106.1	2108.3
130°	2129.3	2166.7	2192.2	2217.9	2215.7
132.5°	2245.8	2276.2	2301.7	2322.7	2320.5
135°	2343.8	2381.1	2401.9	2425.4	2420.7
137.5°	2446.2	2474.1	2497.6	2520.8	2513.9
140°	2546.2	2565.1	2590.5	2611.6	2599.9
142.5°	2630.4	2646.7	2676.8	2695.3	2683.8
145°	2718.9	2716.4	2756.0	2772.3	2760.7
147.5°	2795.5	2788.6	2828.1	2839.8	2830.7
150°	2870.2	2853.9	2891.3	2905.1	2893.5
152.5°	2933.0	2914.5	2949.4	2963.4	2947.1
155°	2993.7	2972.9	3000.8	3014.6	2996.1
157.5°	3042.6	3024.1	3045.1	3061.4	3042.6
160°	3084.7	3070.5	3084.7	3098.5	3082.2
162.5°	3121.7	3107.8	3119.5	3135.8	3114.8
165°	3154.3	3140.5	3147.4	3163.8	3147.4
167.5°	3180.1	3165.9	3173.2	3189.5	3168.4
170°	3201.1	3187.0	3191.7	3208.0	3187.0
172.5°	3214.9	3201.1	3205.8	3222.1	3201.1
175°	3226.5	3210.2	3214.9	3231.3	3208.0
177.5°	3231.3	3214.9	3217.5	3233.8	3212.7
180°	3219.7	3219.7	3219.7	3219.7	3219.7

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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	11.31	12.13	12.28	13.11	14.41	7.28	8.10	8.26	9.09	10.38
	3H	12.98	13.72	13.97	14.71	16.03	8.47	9.20	9.46	10.20	11.51
	4H	13.59	14.28	14.59	15.28	16.61	8.92	9.61	9.92	10.61	11.93
	6H	14.01	14.65	15.02	15.65	16.99	9.24	9.88	10.25	10.88	12.22
	8H	14.14	14.74	15.16	15.76	17.10	9.33	9.94	10.35	10.96	12.29
	12H	14.20	14.78	15.22	15.79	17.14	9.38	9.95	10.40	10.96	12.32
4H	2H	11.32	12.02	12.33	13.01	14.34	7.88	8.57	8.88	9.57	10.89
	3H	13.15	13.73	14.17	14.75	16.09	9.23	9.80	10.24	10.83	12.16
	4H	13.84	14.37	14.87	15.39	16.75	9.77	10.30	10.80	11.32	12.68
	6H	14.36	14.81	15.39	15.85	17.21	10.19	10.65	11.23	11.69	13.04
	8H	14.53	14.96	15.57	15.99	17.36	10.32	10.74	11.36	11.78	13.15
	12H	14.63	15.01	15.68	16.06	17.44	10.39	10.77	11.44	11.82	13.20
8H	4H	13.81	14.23	14.85	15.27	16.64	10.05	10.47	11.09	11.51	12.88
	6H	14.38	14.73	15.43	15.80	17.17	10.57	10.92	11.63	12.00	13.37
	8H	14.59	14.90	15.66	15.96	17.35	10.76	11.07	11.83	12.13	13.52
	12H	14.73	15.00	15.80	16.06	17.49	10.88	11.15	11.95	12.21	13.64
12H	4H	13.76	14.14	14.81	15.19	16.57	10.06	10.44	11.11	11.49	12.86
	6H	14.35	14.66	15.42	15.72	17.11	10.62	10.93	11.69	11.99	13.38
	8H	14.57	14.84	15.64	15.90	17.33	10.83	11.10	11.90	12.16	13.59

END OF REPORT