

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: P926505

Luminaire Tested: DFN2DIP-TR4F0-070D110US950-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P926505
REPORT IS A COMBINATION OF REPORTS P902022 AND P898849
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR4F0-070D110US950-RLLONL
Description: 4 foot, Triangle Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

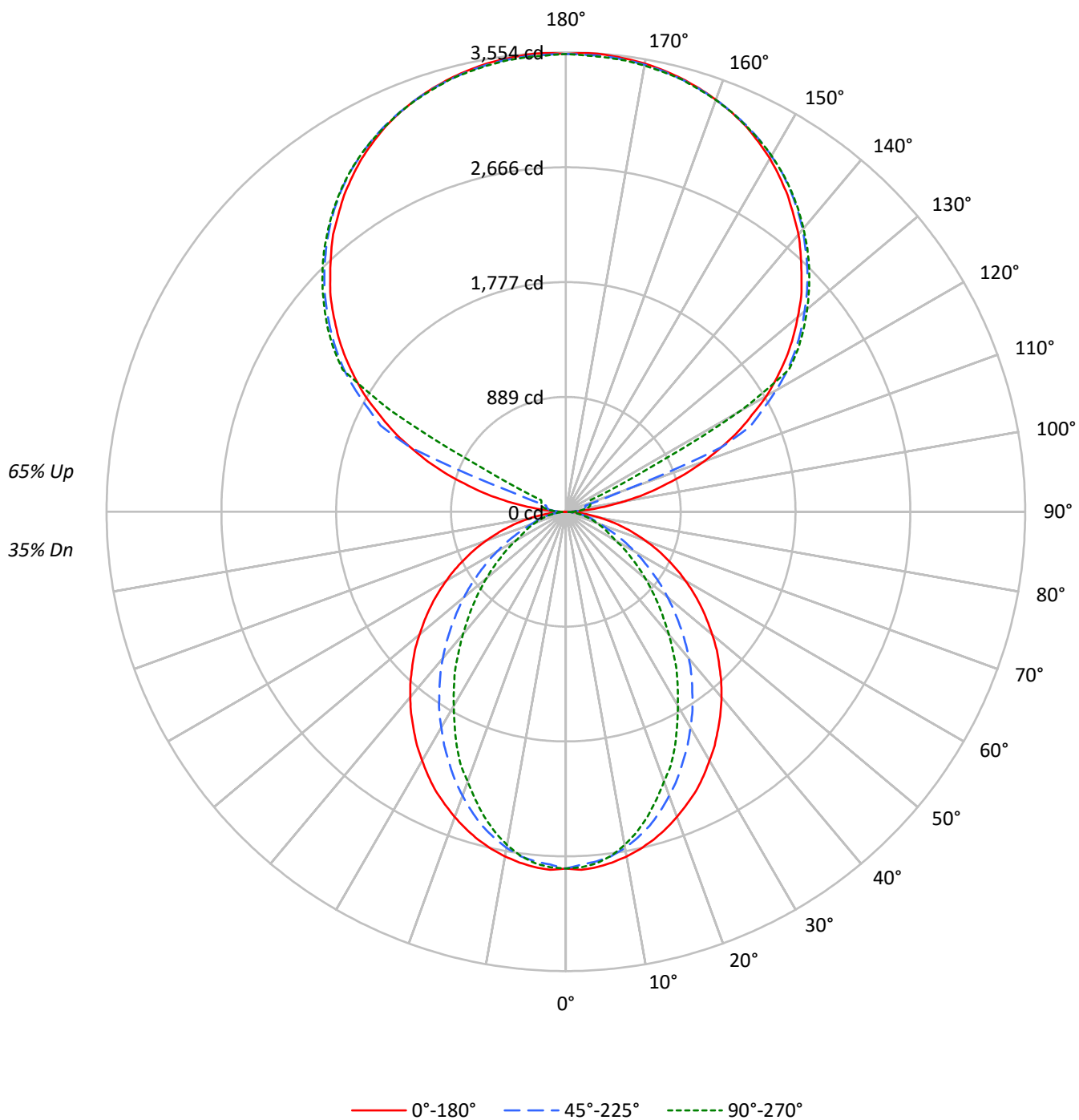
Lumens per Lamp: N/A
Luminaire Lumens: 16065.3 lumens
Efficiency: N/A
Efficacy: 106.9 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.43' x L: 3.96' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 150.3
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9977
Total Harmonic Distortion (THDi): 0.049
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	104	104	104	104	94	94	94	94	75	75	75	58	58	58	43	43	43
1	95	91	87	84	86	82	79	76	66	64	62	52	50	49	38	37	37
2	87	80	74	69	78	72	67	63	58	55	52	46	44	41	34	33	31
3	79	70	63	58	71	64	58	53	52	48	44	41	38	35	30	29	27
4	73	62	55	49	65	57	50	45	46	42	38	36	33	31	27	25	24
5	67	56	48	42	60	51	44	39	41	37	33	33	29	27	25	23	21
6	61	50	42	37	55	46	39	34	37	32	29	30	26	24	23	20	18
7	57	45	37	32	51	41	35	30	34	29	25	27	24	21	21	18	16
8	53	41	33	28	48	37	31	26	31	26	23	25	21	19	19	17	15
9	49	37	30	25	44	34	28	24	28	24	20	23	19	17	18	15	13
10	46	34	27	23	42	31	25	21	26	21	18	21	18	15	16	14	12

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2193	2193	2193
5°	2196	2158	2172
10°	2174	2115	2101
15°	2145	2045	1992
20°	2105	1949	1857
25°	2064	1841	1728
30°	2010	1730	1564
35°	1957	1611	1420
40°	1902	1488	1254
45°	1839	1351	1104
50°	1774	1213	958
55°	1706	1066	817
60°	1627	911	673
65°	1537	755	605
70°	1427	608	547
75°	1289	536	498
80°	1089	450	432
85°	759	300	324

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 1881 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	258.7	1.6
10°-20°	710.1	4.4
20°-30°	997.0	6.2
30°-40°	1086.8	6.8
40°-50°	998.8	6.2
50°-60°	784.4	4.9
60°-70°	510.6	3.2
70°-80°	262.8	1.6
80°-90°	73.3	0.5
90°-100°	116.8	0.7
100°-110°	435.4	2.7
110°-120°	1154.6	7.2
120°-130°	1915.0	11.9
130°-140°	2034.2	12.7
140°-150°	1890.5	11.8
150°-160°	1519.9	9.5
160°-170°	979.4	6.1
170°-180°	337.1	2.1
0°-30°	1965.7	12.2
0°-40°	3052.5	19.0
0°-60°	4835.8	30.1
0°-90°	5682.5	35.4
90°-120°	1706.7	10.6
90°-150°	7546.4	47.0
90°-180°	10383.0	64.6
0°-180°	16065.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2760	2760	2760	2760	2760	
5°	2760	2748	2715	2738	2730	262
15°	2625	2598	2513	2465	2440	740
25°	2383	2303	2138	2036	1998	1096
35°	2053	1926	1706	1549	1494	1285
45°	1679	1511	1249	1071	1012	1296
55°	1276	1082	812	662	615	1140
65°	862	659	435	350	342	854
75°	460	285	200	182	180	486
85°	107	55	47	47	47	123
90°	2	31	51	64	69	15
95°	166	82	100	113	110	197
105°	779	856	156	184	195	832
115°	1474	1517	1581	395	210	1451
125°	2083	2117	2166	2183	2191	1858
135°	2578	2619	2642	2668	2663	1992
145°	2991	2988	3032	3050	3037	1871
155°	3293	3270	3301	3316	3296	1517
165°	3470	3454	3462	3480	3462	980
175°	3549	3531	3536	3554	3529	338
180°	3542	3542	3542	3542	3542	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2760.0	2760.0	2760.0	2760.0	2760.0
2.5°	2772.4	2760.0	2732.4	2757.6	2752.6
5°	2760.0	2747.5	2715.0	2737.5	2730.1
7.5°	2737.5	2722.6	2687.7	2697.4	2685.0
10°	2707.5	2690.1	2640.2	2632.6	2617.7
12.5°	2670.2	2647.6	2580.1	2565.2	2537.6
15°	2625.1	2597.6	2512.7	2465.3	2440.4
17.5°	2572.7	2532.7	2427.7	2372.8	2332.8
20°	2512.7	2462.7	2337.9	2275.6	2220.4
22.5°	2447.9	2390.3	2245.3	2160.5	2123.2
25°	2382.9	2302.9	2138.0	2035.7	1998.2
27.5°	2305.5	2220.4	2038.1	1920.8	1863.3
30°	2223.1	2128.0	1928.1	1801.0	1733.4
32.5°	2143.1	2028.1	1823.5	1673.5	1610.9
35°	2053.2	1925.7	1706.1	1548.7	1493.6
37.5°	1965.8	1828.2	1596.1	1423.6	1361.4
40°	1873.3	1723.6	1481.1	1303.8	1238.9
42.5°	1778.4	1618.7	1366.3	1181.3	1119.1
45°	1678.6	1511.0	1249.0	1071.4	1011.5
47.5°	1583.6	1406.4	1136.6	959.1	904.2
50°	1478.7	1301.4	1026.6	854.1	801.9
52.5°	1376.1	1188.8	921.7	756.8	709.4
55°	1276.3	1081.5	811.7	662.0	614.6
57.5°	1174.0	974.1	714.5	574.5	534.5
60°	1069.1	869.2	611.9	484.7	444.7
62.5°	966.7	766.9	524.4	404.7	384.7
65°	861.7	659.3	434.6	349.8	342.1
67.5°	761.9	559.4	349.8	307.1	299.7
70°	656.9	462.1	289.6	264.7	254.6
72.5°	557.0	372.1	242.2	222.4	217.3
75°	459.5	284.6	199.8	182.3	179.9
77.5°	362.2	202.2	157.4	147.3	142.3
80°	272.2	144.9	119.8	110.0	110.0
82.5°	189.8	97.5	82.4	77.4	77.4
85°	107.3	54.9	47.4	47.4	47.4
87.5°	40.0	19.8	19.8	17.5	17.5
90°	2.5	30.7	51.1	64.2	69.1
92.5°	64.2	53.9	61.4	66.7	69.1
95°	166.5	81.9	99.8	112.9	110.2
97.5°	299.7	89.8	130.5	138.4	140.9
100°	453.7	102.6	146.1	166.5	171.6
102.5°	622.6	617.7	151.2	179.3	187.2
105°	779.0	856.0	156.5	184.4	194.8
107.5°	961.1	1024.9	161.6	189.6	200.0
110°	1135.4	1189.0	448.6	192.3	202.3

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1299.4	1345.3	1301.8	197.2	205.1
115°	1473.5	1517.0	1581.3	394.7	210.3
117.5°	1624.8	1675.9	1719.7	1353.0	681.6
120°	1793.9	1832.3	1878.5	1909.2	1563.2
122.5°	1937.3	1978.3	2029.7	2045.0	2047.8
125°	2083.3	2116.8	2165.5	2183.4	2191.1
127.5°	2216.6	2252.5	2291.1	2316.7	2319.2
130°	2342.3	2383.4	2411.3	2439.7	2437.3
132.5°	2470.4	2503.9	2531.9	2555.0	2552.6
135°	2578.2	2619.2	2642.0	2668.0	2662.7
137.5°	2690.8	2721.5	2747.3	2772.9	2765.3
140°	2800.9	2821.6	2849.6	2872.7	2859.9
142.5°	2893.4	2911.3	2944.5	2964.9	2952.2
145°	2990.8	2988.0	3031.5	3049.6	3036.8
147.5°	3075.1	3067.5	3111.0	3123.8	3113.8
150°	3157.3	3139.3	3180.3	3195.6	3182.8
152.5°	3226.3	3205.9	3244.3	3259.8	3241.9
155°	3293.0	3270.1	3300.8	3316.1	3295.7
157.5°	3346.8	3326.4	3349.6	3367.5	3346.8
160°	3393.1	3377.5	3393.1	3408.3	3390.3
162.5°	3433.8	3418.7	3431.4	3449.4	3426.3
165°	3469.8	3454.5	3462.2	3480.1	3462.2
167.5°	3498.0	3482.6	3490.5	3508.4	3485.3
170°	3521.2	3505.7	3510.8	3528.8	3505.7
172.5°	3536.4	3521.2	3526.4	3544.3	3521.2
175°	3549.2	3531.2	3536.4	3554.4	3528.8
177.5°	3554.4	3536.4	3539.1	3557.1	3534.0
180°	3541.6	3541.6	3541.6	3541.6	3541.6

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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	8.33	9.05	9.41	10.13	11.59	4.30	5.02	5.38	6.10	7.57
	3H	10.00	10.64	11.08	11.73	13.21	5.48	6.13	6.57	7.21	8.70
	4H	10.60	11.21	11.70	12.30	13.79	5.93	6.54	7.03	7.63	9.12
	6H	11.02	11.58	12.12	12.67	14.17	6.24	6.81	7.35	7.90	9.40
	8H	11.14	11.68	12.25	12.78	14.28	6.33	6.87	7.44	7.97	9.47
	12H	11.20	11.71	12.31	12.80	14.32	6.37	6.88	7.49	7.98	9.50
4H	2H	8.33	8.95	9.44	10.03	11.52	4.88	5.50	5.99	6.58	8.07
	3H	10.15	10.66	11.26	11.77	13.28	6.22	6.73	7.34	7.85	9.35
	4H	10.84	11.31	11.96	12.41	13.93	6.77	7.24	7.88	8.34	9.86
	6H	11.35	11.75	12.47	12.87	14.39	7.18	7.58	8.31	8.71	10.23
	8H	11.52	11.90	12.64	13.01	14.55	7.31	7.68	8.43	8.80	10.34
	12H	11.61	11.95	12.75	13.08	14.62	7.37	7.71	8.51	8.84	10.38
8H	4H	10.80	11.17	11.92	12.29	13.82	7.04	7.41	8.16	8.53	10.07
	6H	11.36	11.67	12.51	12.83	14.36	7.56	7.86	8.70	9.02	10.55
	8H	11.58	11.85	12.73	12.99	14.54	7.75	8.02	8.90	9.16	10.71
	12H	11.71	11.95	12.86	13.08	14.67	7.86	8.10	9.02	9.24	10.82
12H	4H	10.75	11.09	11.89	12.21	13.75	7.04	7.38	8.18	8.51	10.05
	6H	11.34	11.61	12.49	12.75	14.30	7.61	7.87	8.76	9.01	10.56
	8H	11.55	11.79	12.71	12.93	14.51	7.81	8.05	8.97	9.18	10.77