

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: P915701

Luminaire Tested: DFN2DIP-TR4F0-100D110US927-RLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P915701
REPORT IS A COMBINATION OF REPORTS P902028 AND P898849
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR4F0-100D110US927-RLLONL
Description: 4 foot, Triangle Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

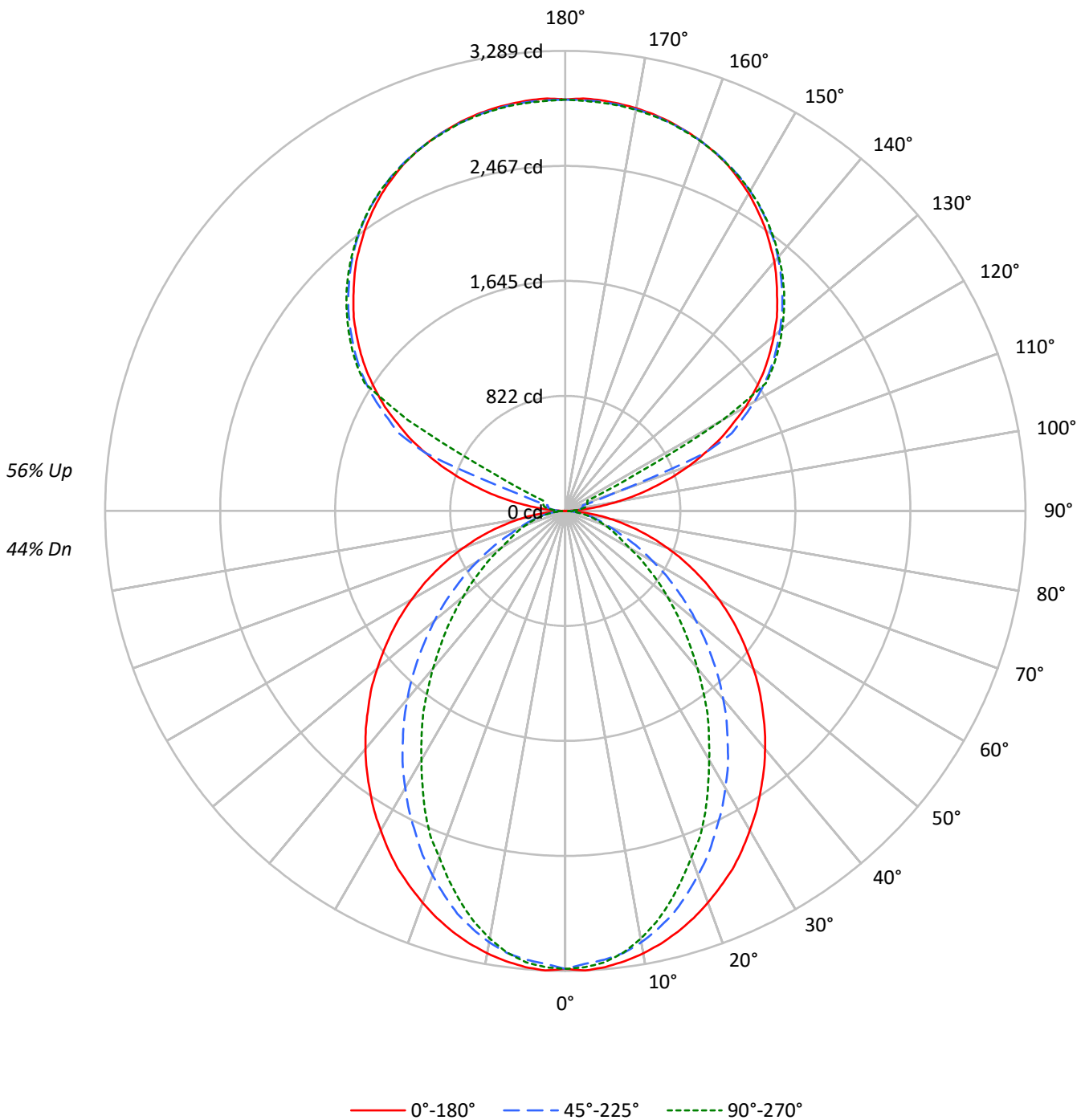
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 15360.3 lumens
Efficiency: N/A
Efficacy: 82.7 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): 185.8
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9972
Total Harmonic Distortion (THDi): 0.128
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				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	106	106	106	106	97	97	97	97	80	80	80	65	65	65	50	50	50	44			44
1	97	93	89	86	89	85	82	79	71	68	66	57	56	55	45	44	43	38			38
2	89	81	76	71	81	75	70	66	62	59	56	51	48	46	40	39	37	32			32
3	81	72	65	59	74	66	60	55	55	51	47	45	42	40	36	34	32	28			28
4	74	64	56	51	68	59	52	47	49	45	41	41	37	34	33	30	28	24			24
5	68	57	49	44	62	53	46	41	44	39	35	37	33	30	30	27	25	21			21
6	63	51	44	38	58	47	41	36	40	35	31	33	29	26	27	24	22	19			19
7	58	46	39	33	53	43	36	31	37	31	27	30	26	24	25	22	20	17			17
8	54	42	35	30	50	39	33	28	33	28	24	28	24	21	23	20	18	15			15
9	50	39	31	26	46	36	29	25	31	26	22	26	22	19	21	18	16	14			14
10	47	35	28	24	43	33	27	22	28	23	20	24	20	17	20	17	15	13			13

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2601	2601	2601
5°	2605	2560	2576
10°	2579	2510	2492
15°	2544	2426	2362
20°	2497	2312	2203
25°	2449	2184	2050
30°	2384	2053	1855
35°	2321	1911	1684
40°	2257	1765	1488
45°	2182	1603	1310
50°	2105	1439	1136
55°	2024	1264	969
60°	1930	1081	798
65°	1823	895	718
70°	1693	722	650
75°	1529	636	591
80°	1292	534	512
85°	900	356	384

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 2182 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	306.9	2.0
10°-20°	842.4	5.5
20°-30°	1182.6	7.7
30°-40°	1289.2	8.4
40°-50°	1184.9	7.7
50°-60°	930.5	6.1
60°-70°	605.7	3.9
70°-80°	311.8	2.0
80°-90°	84.8	0.6
90°-100°	97.0	0.6
100°-110°	361.5	2.4
110°-120°	958.7	6.2
120°-130°	1590.2	10.4
130°-140°	1689.1	11.0
140°-150°	1569.9	10.2
150°-160°	1262.1	8.2
160°-170°	813.3	5.3
170°-180°	279.9	1.8
0°-30°	2331.9	15.2
0°-40°	3621.0	23.6
0°-60°	5736.5	37.3
0°-90°	6738.7	43.9
90°-120°	1417.2	9.2
90°-150°	6266.3	40.8
90°-180°	8622.0	56.1
0°-180°	15360.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3274	3274	3274	3274	3274	
5°	3274	3259	3221	3247	3238	310
15°	3114	3081	2981	2924	2895	878
25°	2827	2732	2536	2415	2370	1300
35°	2436	2284	2024	1837	1772	1524
45°	1991	1792	1482	1271	1200	1538
55°	1514	1283	963	785	729	1353
65°	1022	782	516	415	406	1014
75°	545	338	237	216	213	577
85°	127	65	56	56	56	146
90°	2	26	42	53	57	14
95°	138	68	83	94	92	164
105°	647	711	130	153	162	691
115°	1224	1260	1313	328	175	1205
125°	1730	1758	1798	1813	1819	1543
135°	2141	2175	2194	2215	2211	1654
145°	2484	2481	2517	2532	2522	1553
155°	2734	2715	2741	2754	2737	1260
165°	2881	2869	2875	2890	2875	814
175°	2947	2932	2936	2952	2930	280
180°	2941	2941	2941	2941	2941	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3274.1	3274.1	3274.1	3274.1	3274.1
2.5°	3288.8	3274.1	3241.4	3271.2	3265.3
5°	3274.1	3259.3	3220.6	3247.4	3238.5
7.5°	3247.4	3229.7	3188.2	3199.9	3185.1
10°	3211.8	3191.1	3132.0	3122.9	3105.3
12.5°	3167.5	3140.8	3060.6	3043.0	3010.3
15°	3114.1	3081.3	2980.7	2924.5	2894.9
17.5°	3051.8	3004.3	2879.9	2814.8	2767.3
20°	2980.7	2921.3	2773.3	2699.4	2634.0
22.5°	2903.7	2835.5	2663.6	2563.0	2518.7
25°	2826.7	2731.8	2536.2	2414.9	2370.3
27.5°	2734.9	2634.0	2417.7	2278.5	2210.3
30°	2637.2	2524.3	2287.3	2136.4	2056.3
32.5°	2542.3	2405.8	2163.1	1985.2	1911.0
35°	2435.6	2284.5	2023.9	1837.1	1771.7
37.5°	2331.9	2168.8	1893.4	1688.8	1614.9
40°	2222.2	2044.6	1757.0	1546.7	1469.7
42.5°	2109.7	1920.1	1620.9	1401.4	1327.5
45°	1991.1	1792.5	1481.6	1271.0	1199.9
47.5°	1878.7	1668.3	1348.3	1137.7	1072.6
50°	1754.1	1543.8	1217.8	1013.2	951.3
52.5°	1632.4	1410.2	1093.4	897.8	841.5
55°	1513.9	1282.9	962.9	785.3	729.0
57.5°	1392.7	1155.6	847.6	681.5	634.1
60°	1268.1	1031.1	725.9	575.0	527.5
62.5°	1146.8	909.7	622.1	480.1	456.5
65°	1022.3	782.1	515.6	414.9	405.8
67.5°	903.8	663.6	414.9	364.3	355.5
70°	779.3	548.3	343.6	314.0	302.1
72.5°	660.8	441.3	287.3	263.7	257.8
75°	545.1	337.6	237.0	216.3	213.4
77.5°	429.8	239.9	186.7	174.8	168.8
80°	322.8	172.0	142.1	130.5	130.5
82.5°	225.1	115.7	97.8	91.8	91.8
85°	127.3	65.0	56.2	56.2	56.2
87.5°	47.5	23.6	23.6	20.8	20.8
90°	2.1	25.5	42.5	53.3	57.4
92.5°	53.3	44.8	51.0	55.4	57.4
95°	138.2	68.0	82.9	93.7	91.5
97.5°	248.9	74.5	108.4	114.9	117.0
100°	376.8	85.2	121.3	138.2	142.5
102.5°	517.0	512.9	125.6	148.9	155.4
105°	646.9	710.8	129.9	153.1	161.8
107.5°	798.0	851.0	134.2	157.4	166.0
110°	942.8	987.3	372.5	159.7	168.0



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1079.0	1117.1	1081.0	163.7	170.3
115°	1223.5	1259.6	1313.0	327.7	174.6
117.5°	1349.2	1391.6	1428.0	1123.5	566.0
120°	1489.6	1521.5	1559.9	1585.4	1298.1
122.5°	1608.7	1642.7	1685.4	1698.1	1700.4
125°	1730.0	1757.8	1798.2	1813.1	1819.4
127.5°	1840.6	1870.4	1902.5	1923.7	1925.8
130°	1945.0	1979.1	2002.3	2025.8	2023.9
132.5°	2051.4	2079.2	2102.4	2121.6	2119.6
135°	2140.9	2174.9	2193.9	2215.4	2211.1
137.5°	2234.3	2259.9	2281.3	2302.6	2296.2
140°	2325.8	2343.0	2366.2	2385.4	2374.8
142.5°	2402.6	2417.5	2445.1	2462.0	2451.4
145°	2483.5	2481.2	2517.3	2532.3	2521.7
147.5°	2553.5	2547.2	2583.3	2593.9	2585.6
150°	2621.7	2606.8	2640.9	2653.6	2643.0
152.5°	2679.1	2662.1	2694.0	2706.9	2692.0
155°	2734.5	2715.4	2740.9	2753.6	2736.7
157.5°	2779.1	2762.2	2781.4	2796.3	2779.1
160°	2817.6	2804.6	2817.6	2830.1	2815.3
162.5°	2851.4	2838.8	2849.4	2864.3	2845.1
165°	2881.2	2868.6	2874.9	2889.8	2874.9
167.5°	2904.7	2891.9	2898.4	2913.3	2894.2
170°	2923.9	2911.0	2915.3	2930.3	2911.0
172.5°	2936.5	2923.9	2928.2	2943.1	2923.9
175°	2947.2	2932.3	2936.5	2951.5	2930.3
177.5°	2951.5	2936.5	2938.8	2953.7	2934.6
180°	2940.9	2940.9	2940.9	2940.9	2940.9



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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	9.86	10.65	10.88	11.66	13.02	5.84	6.62	6.85	7.64	9.00
	3H	11.54	12.24	12.56	13.26	14.64	7.02	7.72	8.05	8.75	10.13
	4H	12.14	12.80	13.18	13.84	15.22	7.47	8.13	8.51	9.16	10.55
	6H	12.56	13.17	13.61	14.21	15.60	7.79	8.40	8.84	9.43	10.83
	8H	12.69	13.27	13.74	14.32	15.71	7.88	8.46	8.93	9.51	10.90
	12H	12.75	13.30	13.80	14.34	15.76	7.92	8.47	8.98	9.52	10.94
4H	2H	9.88	10.54	10.92	11.57	12.95	6.43	7.09	7.47	8.12	9.51
	3H	11.70	12.25	12.75	13.31	14.71	7.77	8.32	8.82	9.38	10.78
	4H	12.39	12.89	13.45	13.94	15.37	8.32	8.82	9.38	9.87	11.30
	6H	12.90	13.33	13.97	14.41	15.83	8.74	9.17	9.80	10.24	11.66
	8H	13.08	13.48	14.14	14.55	15.98	8.87	9.27	9.93	10.34	11.77
	12H	13.17	13.53	14.25	14.61	16.05	8.93	9.29	10.01	10.37	11.81
8H	4H	12.35	12.76	13.42	13.82	15.26	8.60	9.00	9.66	10.07	11.50
	6H	12.92	13.25	14.01	14.36	15.79	9.11	9.45	10.20	10.55	11.98
	8H	13.14	13.43	14.23	14.52	15.97	9.31	9.60	10.40	10.69	12.14
	12H	13.27	13.53	14.37	14.62	16.10	9.42	9.68	10.52	10.77	12.25
12H	4H	12.30	12.67	13.39	13.75	15.19	8.60	8.96	9.68	10.04	11.48
	6H	12.89	13.19	13.99	14.28	15.73	9.16	9.45	10.26	10.55	11.99
	8H	13.11	13.37	14.21	14.46	15.94	9.37	9.63	10.47	10.72	12.20