

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: P915705

Luminaire Tested: DFN2DIP-TR4F0-100D120US927-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P915705
REPORT IS A COMBINATION OF REPORTS P902046 AND P898849
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR4F0-100D120US927-RLLONL
Description: 4 foot, Triangle Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

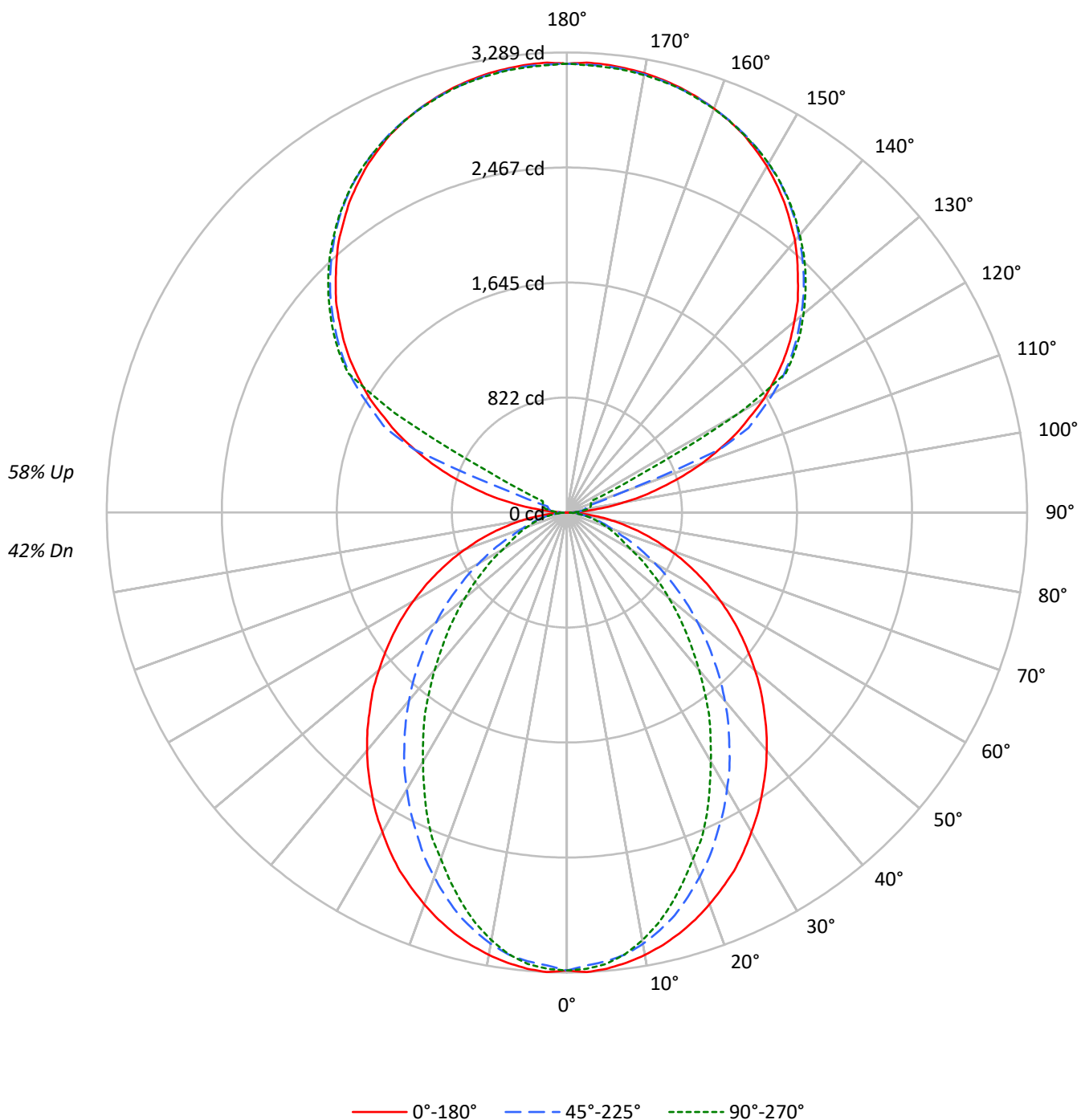
Lumens per Lamp: N/A
Luminaire Lumens: 16144.6 lumens
Efficiency: N/A
Efficacy: 83.9 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.43' x L: 3.96' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 192.4
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
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	105	105	105	105	96	96	96	96	79	79	79	63	63	63	49	49	49
1	96	92	89	85	88	84	81	78	70	67	65	56	55	53	43	43	42
2	88	81	75	70	80	74	69	65	61	58	55	50	47	45	39	37	36
3	81	72	65	59	73	66	60	55	55	50	46	44	41	39	35	33	31
4	74	64	56	50	67	58	52	47	49	44	40	40	36	33	31	29	27
5	68	57	49	43	62	52	45	40	44	39	35	36	32	29	28	26	24
6	63	51	43	38	57	47	40	35	39	34	30	32	29	26	26	23	21
7	58	46	38	33	53	43	36	31	36	31	27	30	26	23	24	21	19
8	54	42	34	29	49	39	32	27	33	28	24	27	23	20	22	19	17
9	50	38	31	26	46	35	29	25	30	25	22	25	21	18	20	17	15
10	47	35	28	23	43	33	26	22	28	23	19	23	19	17	19	16	14

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	1.9
10°-20°	842.4	5.2
20°-30°	1182.6	7.3
30°-40°	1289.2	8.0
40°-50°	1184.9	7.3
50°-60°	930.5	5.8
60°-70°	605.7	3.8
70°-80°	311.8	1.9
80°-90°	85.2	0.5
90°-100°	105.8	0.7
100°-110°	394.4	2.4
110°-120°	1045.9	6.5
120°-130°	1734.7	10.7
130°-140°	1842.7	11.4
140°-150°	1712.6	10.6
150°-160°	1376.9	8.5
160°-170°	887.2	5.5
170°-180°	305.4	1.9
0°-30°	2331.9	14.4
0°-40°	3621.0	22.4
0°-60°	5736.5	35.5
0°-90°	6739.2	41.7
90°-120°	1546.1	9.6
90°-150°	6836.0	42.3
90°-180°	9405.0	58.3
0°-180°	16144.6	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	28	46	58	63	15
95°	151	74	90	102	100	179
105°	706	776	142	167	176	754
115°	1335	1374	1432	358	190	1314
125°	1887	1918	1962	1978	1985	1683
135°	2335	2373	2393	2417	2412	1804
145°	2709	2707	2746	2762	2751	1694
155°	2983	2962	2990	3004	2986	1375
165°	3143	3129	3136	3153	3136	888
175°	3215	3199	3204	3220	3197	306
180°	3208	3208	3208	3208	3208	

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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°	2.2	27.8	46.3	58.1	62.6
92.5°	58.1	48.8	55.7	60.4	62.6
95°	150.8	74.1	90.4	102.3	99.8
97.5°	271.6	81.4	118.3	125.4	127.6
100°	411.0	92.9	132.3	150.8	155.5
102.5°	564.0	559.6	137.0	162.4	169.5
105°	705.7	775.5	141.7	167.1	176.4
107.5°	870.5	928.4	146.4	171.7	181.1
110°	1028.5	1077.0	406.3	174.2	183.3



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1177.1	1218.7	1179.3	178.6	185.8
115°	1334.7	1374.2	1432.3	357.5	190.5
117.5°	1471.8	1518.1	1557.8	1225.6	617.5
120°	1625.1	1659.8	1701.7	1729.6	1416.1
122.5°	1754.9	1792.2	1838.7	1852.5	1855.0
125°	1887.2	1917.6	1961.7	1977.9	1984.8
127.5°	2007.9	2040.5	2075.5	2098.6	2100.9
130°	2121.8	2159.0	2184.4	2210.0	2207.8
132.5°	2237.8	2268.2	2293.5	2314.5	2312.3
135°	2335.4	2372.7	2393.3	2416.8	2412.1
137.5°	2437.5	2465.3	2488.7	2511.8	2505.0
140°	2537.3	2556.0	2581.3	2602.3	2590.7
142.5°	2621.0	2637.3	2667.4	2685.8	2674.2
145°	2709.3	2706.8	2746.2	2762.5	2750.8
147.5°	2785.6	2778.7	2818.2	2829.8	2820.6
150°	2860.0	2843.8	2881.0	2894.8	2883.2
152.5°	2922.6	2904.1	2938.9	2952.9	2936.7
155°	2983.0	2962.3	2990.2	3004.0	2985.5
157.5°	3031.8	3013.3	3034.3	3050.5	3031.8
160°	3073.7	3059.6	3073.7	3087.4	3071.2
162.5°	3110.7	3096.9	3108.4	3124.7	3103.8
165°	3143.1	3129.4	3136.2	3152.6	3136.2
167.5°	3168.8	3154.7	3161.9	3178.2	3157.2
170°	3189.7	3175.7	3180.4	3196.6	3175.7
172.5°	3203.5	3189.7	3194.5	3210.7	3189.7
175°	3215.1	3198.8	3203.5	3219.8	3196.6
177.5°	3219.8	3203.5	3206.0	3222.3	3201.4
180°	3208.3	3208.3	3208.3	3208.3	3208.3

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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	9.64	10.41	10.67	11.44	12.83	5.61	6.38	6.64	7.41	8.80
	3H	11.31	12.00	12.35	13.04	14.45	6.80	7.48	7.84	8.53	9.93
	4H	11.92	12.57	12.97	13.61	15.03	7.25	7.90	8.30	8.94	10.35
	6H	12.34	12.93	13.40	13.98	15.41	7.57	8.16	8.63	9.21	10.64
	8H	12.46	13.03	13.53	14.09	15.51	7.65	8.22	8.72	9.29	10.71
	12H	12.52	13.06	13.59	14.12	15.56	7.70	8.24	8.77	9.29	10.74
4H	2H	9.65	10.30	10.71	11.35	12.76	6.20	6.85	7.26	7.90	9.31
	3H	11.47	12.01	12.54	13.09	14.51	7.55	8.09	8.61	9.16	10.59
	4H	12.16	12.66	13.24	13.72	15.17	8.09	8.59	9.17	9.65	11.10
	6H	12.68	13.10	13.76	14.19	15.63	8.51	8.93	9.59	10.02	11.46
	8H	12.85	13.25	13.93	14.32	15.78	8.64	9.03	9.72	10.11	11.57
	12H	12.94	13.30	14.04	14.39	15.86	8.70	9.06	9.80	10.15	11.61
8H	4H	12.13	12.52	13.21	13.60	15.06	8.37	8.76	9.45	9.84	11.30
	6H	12.69	13.02	13.80	14.14	15.59	8.89	9.21	9.99	10.33	11.79
	8H	12.91	13.19	14.02	14.30	15.77	9.08	9.36	10.19	10.47	11.94
	12H	13.04	13.29	14.16	14.39	15.91	9.19	9.45	10.31	10.55	12.06
12H	4H	12.08	12.43	13.18	13.53	14.99	8.37	8.73	9.47	9.82	11.28
	6H	12.67	12.95	13.78	14.06	15.53	8.93	9.22	10.05	10.32	11.80
	8H	12.88	13.14	14.00	14.24	15.75	9.14	9.39	10.26	10.49	12.01