

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: P918389

Luminaire Tested: DFN2DIP-TR4F0-090D100US930-RLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P918389
REPORT IS A COMBINATION OF REPORTS P902008 AND P898849
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR4F0-090D100US930-RLLONL
Description: 4 foot, Triangle Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

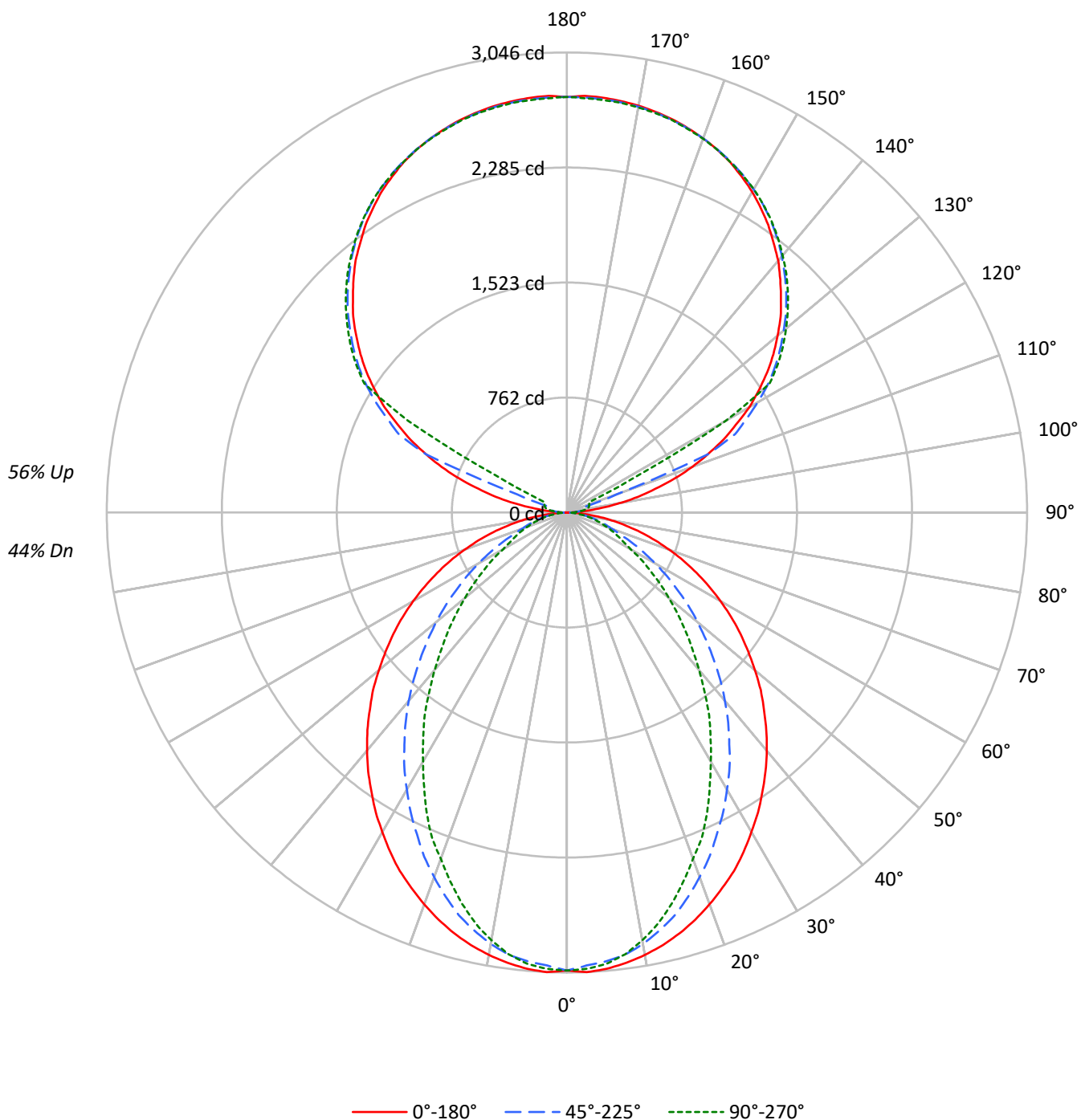
Lumens per Lamp: N/A
Luminaire Lumens: 14308.5 lumens
Efficiency: N/A
Efficacy: 87.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.43' x L: 3.96' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 163.8
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.099
Total Harmonic Distortion (THDi): 0.979
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P918389

CATALOG NUMBER: DFN2DIP-TR4F0-090D100US930-RLLONL

Luminous Intensity Polar Plot



TEST NUMBER: P918389

CATALOG NUMBER: DFN2DIP-TR4F0-090D100US930-RLLONL

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	106	106	106	106	97	97	97	97	80	80	80	64	64	64	50	50	50
1	97	93	89	86	88	85	82	79	71	68	66	57	56	54	45	44	43
2	88	81	76	71	81	75	70	65	62	59	56	51	48	46	40	39	37
3	81	72	65	59	74	66	60	55	55	51	47	45	42	39	36	34	32
4	74	64	56	50	68	59	52	47	49	44	41	41	37	34	32	30	28
5	68	57	49	43	62	53	46	41	44	39	35	37	33	30	29	27	25
6	63	51	43	38	58	47	41	36	40	35	31	33	29	26	27	24	22
7	58	46	39	33	53	43	36	31	36	31	27	30	26	23	25	22	20
8	54	42	35	30	50	39	32	28	33	28	24	28	24	21	23	20	18
9	50	39	31	26	46	36	29	25	31	25	22	26	22	19	21	18	16
10	47	35	28	24	43	33	27	22	28	23	20	24	20	17	20	17	15

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2409	2409	2409
5°	2413	2371	2386
10°	2389	2324	2308
15°	2356	2248	2188
20°	2313	2142	2041
25°	2268	2023	1899
30°	2209	1901	1718
35°	2150	1770	1560
40°	2090	1635	1378
45°	2021	1485	1213
50°	1949	1333	1052
55°	1875	1171	898
60°	1788	1002	739
65°	1688	829	665
70°	1568	669	602
75°	1416	589	547
80°	1197	494	474
85°	834	330	356

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 2021 cd/sqm

TEST NUMBER: P918389

CATALOG NUMBER: DFN2DIP-TR4F0-090D100US930-RLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	284.2	2.0
10°-20°	780.3	5.5
20°-30°	1095.5	7.7
30°-40°	1194.1	8.3
40°-50°	1097.5	7.7
50°-60°	861.9	6.0
60°-70°	561.0	3.9
70°-80°	288.8	2.0
80°-90°	78.6	0.5
90°-100°	90.7	0.6
100°-110°	338.2	2.4
110°-120°	897.0	6.3
120°-130°	1487.8	10.4
130°-140°	1580.4	11.0
140°-150°	1468.8	10.3
150°-160°	1180.9	8.3
160°-170°	760.9	5.3
170°-180°	261.9	1.8
0°-30°	2159.9	15.1
0°-40°	3354.0	23.4
0°-60°	5313.5	37.1
0°-90°	6241.9	43.6
90°-120°	1326.0	9.3
90°-150°	5862.9	41.0
90°-180°	8067.0	56.4
0°-180°	14308.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3033	3033	3033	3033	3033	
5°	3033	3019	2983	3008	3000	288
15°	2884	2854	2761	2709	2682	813
25°	2618	2530	2349	2237	2196	1204
35°	2256	2116	1875	1702	1641	1412
45°	1844	1660	1372	1177	1111	1424
55°	1402	1188	892	727	675	1253
65°	947	724	478	384	376	939
75°	505	313	220	200	198	534
85°	118	60	52	52	52	135
90°	2	24	40	50	54	13
95°	129	64	78	88	86	153
105°	605	665	122	143	151	647
115°	1145	1179	1228	307	163	1127
125°	1619	1645	1682	1696	1702	1444
135°	2003	2035	2053	2073	2069	1547
145°	2324	2322	2355	2369	2359	1453
155°	2558	2541	2564	2576	2560	1179
165°	2696	2684	2690	2704	2690	762
175°	2757	2744	2748	2762	2742	262
180°	2752	2752	2752	2752	2752	



TEST NUMBER: P918389

CATALOG NUMBER: DFN2DIP-TR4F0-090D100US930-RLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3032.7	3032.7	3032.7	3032.7	3032.7
2.5°	3046.4	3032.7	3002.3	3030.1	3024.5
5°	3032.7	3019.0	2983.2	3007.9	2999.7
7.5°	3007.9	2991.6	2953.2	2963.9	2950.2
10°	2975.0	2955.8	2901.1	2892.6	2876.3
12.5°	2933.9	2909.2	2835.0	2818.6	2788.3
15°	2884.4	2854.2	2761.0	2708.8	2681.5
17.5°	2826.8	2782.9	2667.5	2607.2	2563.3
20°	2761.0	2706.0	2568.8	2500.4	2439.8
22.5°	2689.7	2626.5	2467.2	2374.0	2333.0
25°	2618.3	2530.4	2349.3	2236.9	2195.5
27.5°	2533.3	2439.8	2239.5	2110.5	2047.3
30°	2442.7	2338.2	2118.6	1978.9	1904.6
32.5°	2354.7	2228.4	2003.6	1838.8	1770.1
35°	2256.1	2116.0	1874.6	1701.7	1641.1
37.5°	2160.0	2008.9	1753.8	1564.2	1495.8
40°	2058.4	1893.9	1627.4	1432.6	1361.3
42.5°	1954.1	1778.6	1501.3	1298.1	1229.6
45°	1844.4	1660.4	1372.3	1177.2	1111.4
47.5°	1740.1	1545.3	1248.9	1053.8	993.5
50°	1624.8	1430.0	1128.0	938.5	881.1
52.5°	1512.1	1306.3	1012.8	831.6	779.5
55°	1402.3	1188.3	891.9	727.4	675.2
57.5°	1290.0	1070.4	785.1	631.3	587.3
60°	1174.6	955.0	672.4	532.6	488.6
62.5°	1062.3	842.7	576.3	444.7	422.8
65°	946.9	724.5	477.5	384.3	375.9
67.5°	837.1	614.7	384.3	337.5	329.3
70°	721.9	507.8	318.3	290.9	279.8
72.5°	612.0	408.8	266.1	244.3	238.8
75°	504.9	312.7	219.6	200.3	197.7
77.5°	398.0	222.2	172.9	161.9	156.4
80°	299.1	159.3	131.6	120.8	120.8
82.5°	208.5	107.1	90.6	85.0	85.0
85°	117.9	60.3	52.1	52.1	52.1
87.5°	43.9	21.8	21.8	19.2	19.2
90°	1.9	23.9	39.7	49.9	53.6
92.5°	49.9	41.8	47.8	51.8	53.6
95°	129.3	63.6	77.5	87.7	85.6
97.5°	232.8	69.7	101.4	107.5	109.5
100°	352.5	79.7	113.5	129.3	133.4
102.5°	483.7	480.0	117.5	139.3	145.4
105°	605.3	665.0	121.6	143.2	151.3
107.5°	746.7	796.3	125.6	147.3	155.3
110°	882.1	923.7	348.5	149.4	157.2

TEST NUMBER: P918389

CATALOG NUMBER: DFN2DIP-TR4F0-090D100US930-RLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1009.5	1045.2	1011.5	153.2	159.4
115°	1144.8	1178.6	1228.5	306.6	163.4
117.5°	1262.2	1302.0	1336.0	1051.2	529.6
120°	1393.8	1423.5	1459.5	1483.4	1214.5
122.5°	1505.1	1537.0	1576.9	1588.8	1590.9
125°	1618.6	1644.6	1682.4	1696.4	1702.3
127.5°	1722.2	1750.0	1780.0	1799.9	1801.8
130°	1819.7	1851.7	1873.5	1895.4	1893.5
132.5°	1919.3	1945.3	1967.1	1985.0	1983.1
135°	2003.0	2034.9	2052.7	2072.7	2068.7
137.5°	2090.5	2114.4	2134.5	2154.3	2148.4
140°	2176.0	2192.2	2213.9	2231.9	2221.9
142.5°	2247.9	2261.9	2287.6	2303.5	2293.6
145°	2323.6	2321.5	2355.3	2369.3	2359.3
147.5°	2389.1	2383.2	2417.0	2426.9	2419.2
150°	2452.9	2439.0	2470.9	2482.7	2472.8
152.5°	2506.6	2490.7	2520.6	2532.6	2518.6
155°	2558.4	2540.6	2564.5	2576.3	2560.5
157.5°	2600.2	2584.4	2602.4	2616.3	2600.2
160°	2636.2	2624.1	2636.2	2648.0	2634.1
162.5°	2667.8	2656.0	2665.9	2679.9	2661.9
165°	2695.7	2683.9	2689.8	2703.8	2689.8
167.5°	2717.7	2705.6	2711.8	2725.8	2707.8
170°	2735.7	2723.7	2727.7	2741.6	2723.7
172.5°	2747.5	2735.7	2739.7	2753.7	2735.7
175°	2757.4	2743.5	2747.5	2761.5	2741.6
177.5°	2761.5	2747.5	2749.7	2763.6	2745.6
180°	2751.6	2751.6	2751.6	2751.6	2751.6

TEST NUMBER: P918389

CATALOG NUMBER: DFN2DIP-TR4F0-090D100US930-RLONL

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	9.57	10.35	10.59	11.37	12.73	5.54	6.33	6.56	7.35	8.71
	3H	11.24	11.94	12.27	12.97	14.35	6.73	7.43	7.76	8.46	9.84
	4H	11.85	12.51	12.89	13.54	14.93	7.18	7.84	8.22	8.87	10.26
	6H	12.27	12.88	13.32	13.91	15.32	7.50	8.11	8.55	9.14	10.54
	8H	12.39	12.97	13.45	14.03	15.42	7.59	8.17	8.64	9.22	10.62
	12H	12.45	13.00	13.51	14.05	15.47	7.63	8.18	8.69	9.23	10.65
4H	2H	9.58	10.24	10.63	11.28	12.67	6.13	6.79	7.18	7.83	9.22
	3H	11.41	11.96	12.46	13.02	14.42	7.48	8.03	8.53	9.09	10.49
	4H	12.10	12.60	13.16	13.65	15.08	8.03	8.53	9.09	9.58	11.01
	6H	12.61	13.04	13.68	14.12	15.54	8.44	8.88	9.51	9.95	11.37
	8H	12.78	13.19	13.85	14.25	15.69	8.57	8.98	9.64	10.04	11.48
	12H	12.88	13.24	13.96	14.32	15.76	8.64	9.00	9.72	10.08	11.52
8H	4H	12.06	12.46	13.13	13.53	14.97	8.30	8.71	9.37	9.77	11.21
	6H	12.63	12.96	13.72	14.07	15.50	8.82	9.15	9.91	10.26	11.70
	8H	12.84	13.13	13.94	14.23	15.68	9.01	9.30	10.11	10.40	11.85
	12H	12.98	13.24	14.08	14.32	15.82	9.13	9.39	10.23	10.47	11.97
12H	4H	12.01	12.38	13.10	13.46	14.90	8.31	8.67	9.39	9.75	11.19
	6H	12.60	12.89	13.70	13.99	15.44	8.87	9.16	9.97	10.25	11.71
	8H	12.82	13.08	13.92	14.16	15.66	9.08	9.34	10.18	10.42	11.92

END OF REPORT