

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: P931556

Luminaire Tested: DFN2DS-TR4F0-100DS840-RLL

Issue Date: 11/20/2024

Test Information

Test Method: LM-79-2019
Report Number: P931556
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P333882)
Test Lab: INNOVATION CENTER
Issue Date: 11/20/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DS-TR4F0-100DS840-RLL
Description: 4 foot, Triangle Define Geo, with Direct 1in Regressed Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

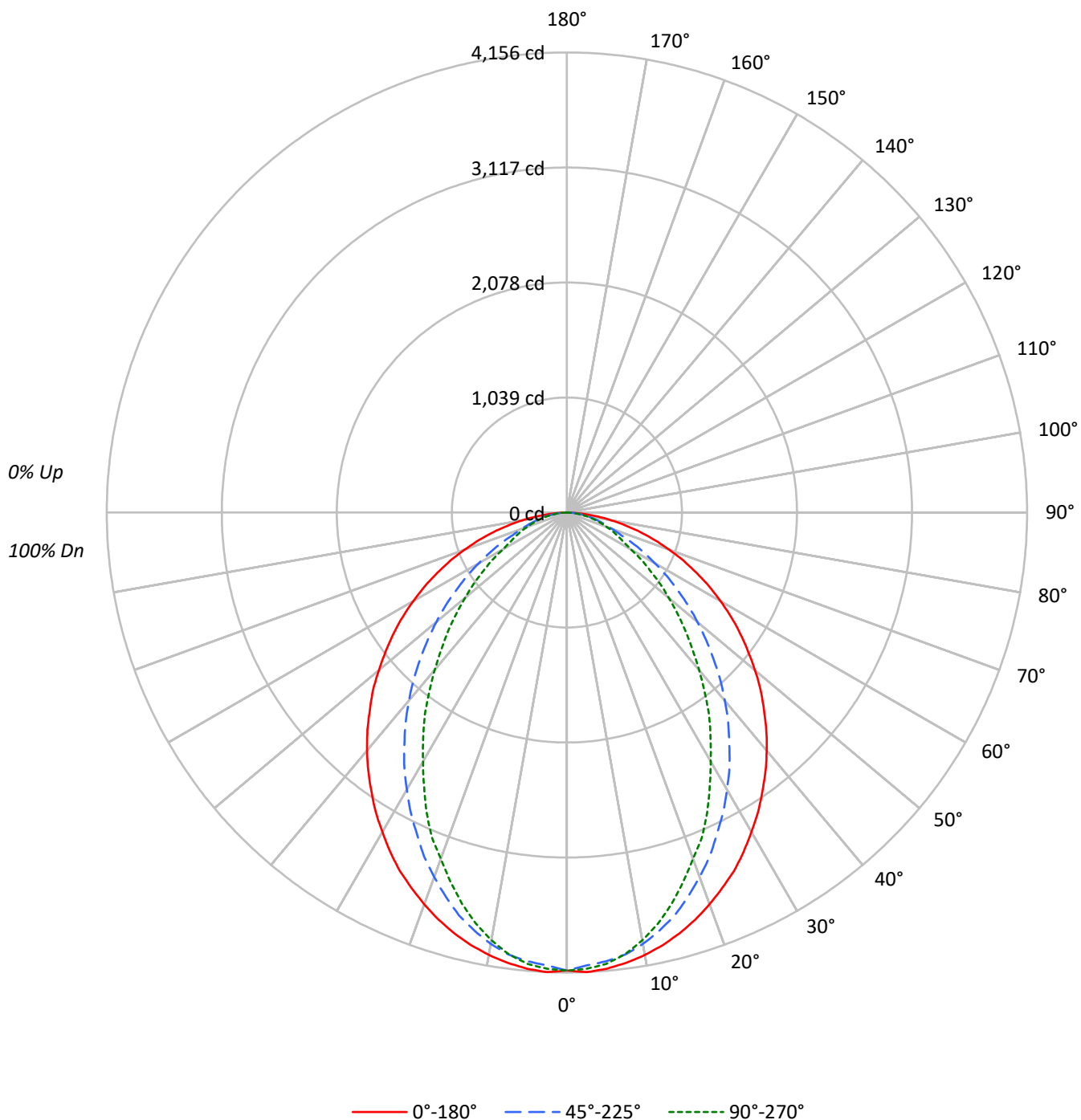
Lumens per Lamp: N/A
Luminaire Lumens: 8508.5 lumens
Efficiency: N/A
Efficacy: 79.3 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular (W 3.96' x L: 3.43' x H: 0')
CIE Type: Direct

Input Watts (W): 107.3
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

TEST NUMBER: P931556

CATALOG NUMBER: DFN2DS-TR4F0-100DS840-RLL

Luminous Intensity Polar Plot



TEST NUMBER: P931556

CATALOG NUMBER: DFN2DS-TR4F0-100DS840-RLL

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
RCR																	
0	119	119	119	119	116	116	116	116	111	111	111		106	106	106		102
1	110	106	102	98	107	103	100	97	99	96	94		95	93	91		92
2	101	94	87	82	98	92	86	81	88	83	79		85	81	78		82
3	93	83	76	70	90	82	75	69	79	73	68		76	71	67		74
4	86	75	66	60	83	73	66	60	71	64	59		69	63	58		66
5	79	67	59	53	77	66	58	52	64	57	52		62	56	51		60
6	74	61	53	47	72	60	52	46	58	51	46		57	50	46		55
7	68	56	47	42	67	55	47	42	53	46	41		52	46	41		51
8	64	51	43	38	62	51	43	37	49	42	37		48	42	37		47
9	60	47	39	34	59	47	39	34	46	39	34		44	38	34		44
10	56	44	36	31	55	43	36	31	42	36	31		41	35	31		41

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3287	3287	3287
5°	3299	3245	3263
10°	3274	3193	3165
15°	3236	3098	3009
20°	3184	2963	2814
25°	3131	2809	2625
30°	3057	2651	2384
35°	2985	2480	2171
40°	2912	2302	1926
45°	2827	2103	1703
50°	2739	1902	1486
55°	2650	1685	1276
60°	2546	1457	1059
65°	2428	1225	964
70°	2287	1008	887
75°	2114	919	828
80°	1866	822	754
85°	1467	648	648

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2827 cd/sqm

TEST NUMBER: P931556

CATALOG NUMBER: DFN2DS-TR4F0-100DS840-RLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	387.7	4.6
10°-20°	1064.4	12.5
20°-30°	1494.4	17.6
30°-40°	1629.0	19.1
40°-50°	1497.2	17.6
50°-60°	1175.8	13.8
60°-70°	765.3	9.0
70°-80°	394.0	4.6
80°-90°	100.6	1.2
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	2946.5	34.6
0°-40°	4575.5	53.8
0°-60°	7248.6	85.2
0°-90°	8508.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	8508.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	4137	4137	4137	4137	4137	
5°	4137	4118	4070	4103	4092	392
15°	3935	3894	3766	3695	3658	1109
25°	3572	3452	3205	3051	2995	1643
35°	3078	2887	2557	2321	2239	1926
45°	2516	2265	1872	1606	1516	1943
55°	1913	1621	1217	992	921	1709
65°	1292	988	652	524	513	1281
75°	689	427	300	273	270	729
85°	161	82	71	71	71	193
90°	0	0	0	0	0	

TEST NUMBER: P931556

CATALOG NUMBER: DFN2DS-TR4F0-100DS840-RLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	4137.1	4137.1	4137.1	4137.1	4137.1
2.5°	4155.8	4137.1	4095.8	4133.5	4126.0
5°	4137.1	4118.4	4069.6	4103.4	4092.2
7.5°	4103.4	4081.1	4028.6	4043.3	4024.7
10°	4058.5	4032.2	3957.6	3946.0	3923.8
12.5°	4002.5	3968.7	3867.4	3845.1	3803.8
15°	3934.9	3893.6	3766.5	3695.4	3658.1
17.5°	3856.3	3796.3	3639.0	3556.8	3496.8
20°	3766.5	3691.4	3504.3	3411.0	3328.3
22.5°	3669.2	3583.0	3365.7	3238.6	3182.6
25°	3571.9	3451.9	3204.8	3051.4	2995.1
27.5°	3455.9	3328.3	3055.1	2879.1	2792.9
30°	3332.3	3189.7	2890.2	2699.6	2598.3
32.5°	3212.4	3039.9	2733.3	2508.5	2414.7
35°	3077.7	2886.7	2557.4	2321.4	2238.7
37.5°	2946.6	2740.4	2392.5	2133.9	2040.5
40°	2808.0	2583.6	2220.1	1954.4	1857.1
42.5°	2665.8	2426.2	2048.1	1770.9	1677.5
45°	2516.0	2265.0	1872.2	1606.0	1516.2
47.5°	2373.9	2108.1	1703.7	1437.5	1355.4
50°	2216.5	1950.7	1538.8	1280.3	1202.0
52.5°	2062.8	1782.0	1381.6	1134.4	1063.4
55°	1913.0	1621.1	1216.7	992.3	921.1
57.5°	1759.8	1460.2	1071.0	861.2	801.2
60°	1602.4	1302.9	917.2	726.5	666.6
62.5°	1449.0	1149.5	786.1	606.6	576.8
65°	1291.8	988.3	651.5	524.3	512.8
67.5°	1142.0	838.5	524.3	460.4	449.2
70°	984.7	692.8	434.1	396.8	381.8
72.5°	834.9	557.7	363.1	333.2	325.7
75°	688.8	426.6	299.5	273.3	269.7
77.5°	543.0	303.1	235.9	220.8	213.3
80°	407.9	217.3	179.6	164.9	164.9
82.5°	284.4	146.1	123.5	116.0	116.0
85°	160.9	82.2	71.1	71.1	71.1
87.5°	60.0	29.8	29.8	26.2	26.2
90°	0.0	0.0	0.0	0.0	0.0

TEST NUMBER: P931556

CATALOG NUMBER: DFN2DS-TR4F0-100DS840-RLL

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	15.37	16.89	15.73	17.20	17.52	11.33	12.85	11.69	13.16	13.48
	3H	17.13	18.50	17.51	18.83	19.19	12.59	13.96	12.97	14.29	14.65
	4H	17.80	19.08	18.20	19.43	19.81	13.10	14.38	13.50	14.73	15.10
	6H	18.29	19.47	18.70	19.84	20.23	13.48	14.66	13.89	15.03	15.42
	8H	18.45	19.58	18.88	19.97	20.37	13.60	14.73	14.03	15.12	15.52
	12H	18.56	19.64	18.99	20.02	20.45	13.68	14.76	14.11	15.14	15.57
4H	2H	15.47	16.75	15.87	17.10	17.48	12.03	13.31	12.42	13.65	14.03
	3H	17.41	18.47	17.82	18.87	19.27	13.47	14.53	13.88	14.93	15.33
	4H	18.16	19.11	18.59	19.53	19.97	14.07	15.02	14.50	15.44	15.88
	6H	18.75	19.58	19.20	20.02	20.48	14.56	15.39	15.01	15.83	16.29
	8H	18.96	19.74	19.42	20.18	20.65	14.72	15.49	15.18	15.94	16.41
	12H	19.12	19.81	19.60	20.29	20.76	14.83	15.53	15.32	16.01	16.48
8H	4H	18.18	18.96	18.64	19.40	19.87	14.42	15.20	14.88	15.64	16.11
	6H	18.82	19.46	19.31	19.95	20.43	15.01	15.65	15.50	16.14	16.62
	8H	19.07	19.64	19.58	20.15	20.64	15.23	15.81	15.74	16.32	16.80
	12H	19.27	19.78	19.78	20.27	20.84	15.41	15.92	15.92	16.41	16.97
12H	4H	18.16	18.86	18.65	19.34	19.81	14.46	15.16	14.95	15.64	16.11
	6H	18.80	19.38	19.31	19.89	20.37	15.07	15.65	15.58	16.16	16.65
	8H	19.08	19.59	19.59	20.08	20.65	15.34	15.85	15.85	16.35	16.91