

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: P931537

Luminaire Tested: DFN2DS-TR4F0-090DS840-FLL

Issue Date: 11/20/2024

Test Information

Test Method: LM-79-2019
Report Number: P931537
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P333812)
Test Lab: INNOVATION CENTER
Issue Date: 11/20/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DS-TR4F0-090DS840-FLL
Description: 4 foot, Triangle Define Geo, with Direct Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

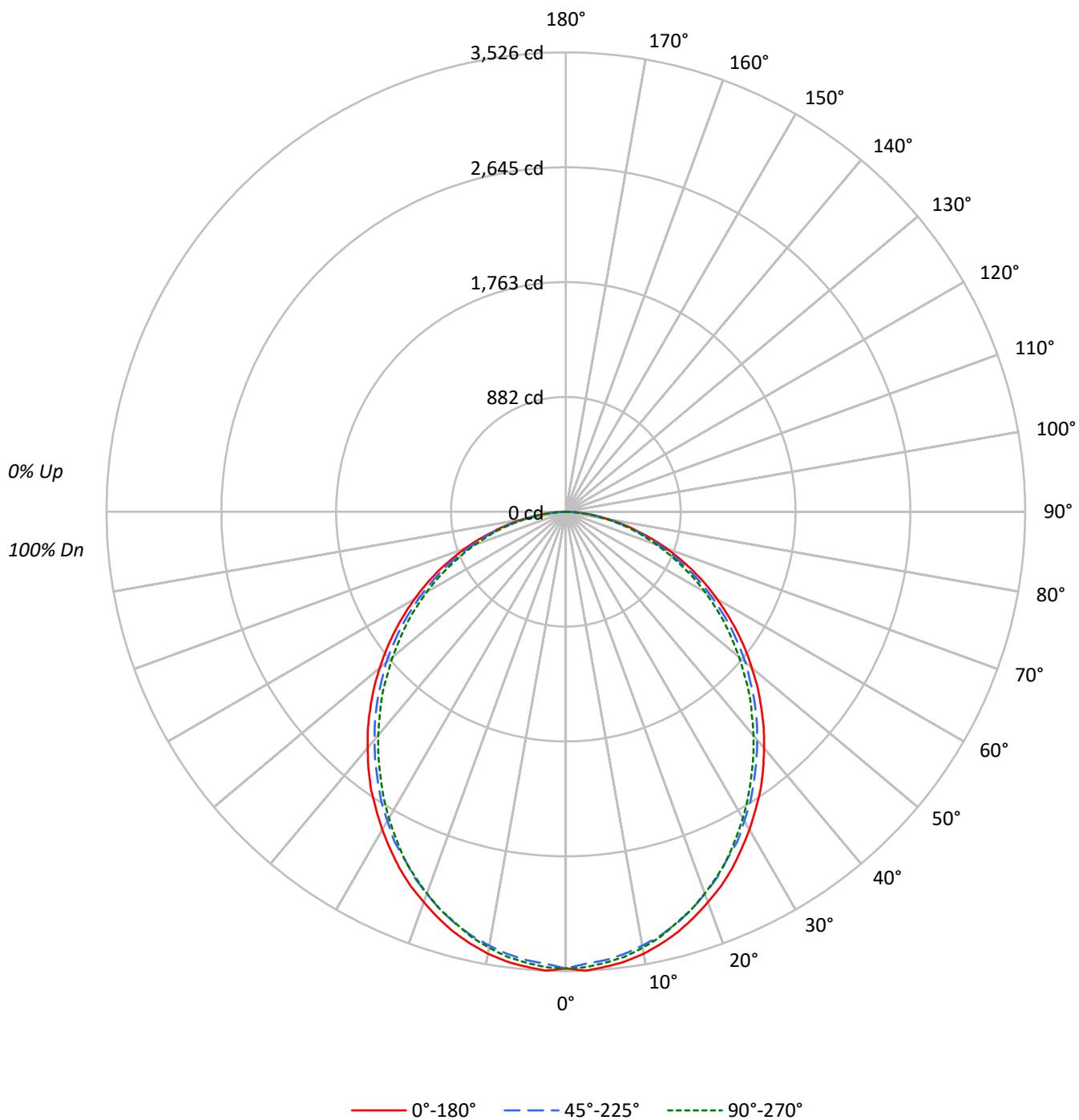
Lumens per Lamp: N/A
Luminaire Lumens: 8918.9 lumens
Efficiency: N/A
Efficacy: 95.2 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular (W 3.96' x L: 3.43' x H: 0')
CIE Type: Direct

Input Watts (W): 93.7
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: P931537

CATALOG NUMBER: DFN2DS-TR4F0-090DS840-FLL

Luminous Intensity Polar Plot



TEST NUMBER: P931537

CATALOG NUMBER: DFN2DS-TR4F0-090DS840-FLL

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	109	104	100	96	106	102	98	95	98	95	92		94	91	89		90
2	99	91	85	79	97	89	83	78	86	81	76		83	78	74		80
3	91	80	72	66	88	79	71	65	76	69	64		73	68	63		71
4	83	71	63	56	81	70	62	56	68	61	55		65	59	54		63
5	77	64	55	49	75	63	55	48	61	53	48		59	52	47		57
6	71	58	49	43	69	57	48	42	55	48	42		53	47	42		52
7	66	52	44	38	64	52	43	38	50	43	37		49	42	37		47
8	61	48	40	34	60	47	39	34	46	39	33		45	38	33		44
9	57	44	36	30	56	43	36	30	42	35	30		41	35	30		40
10	54	41	33	28	53	40	33	28	39	32	27		38	32	27		37

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2785	2785	2785
5°	2795	2755	2772
10°	2779	2727	2741
15°	2745	2692	2689
20°	2696	2639	2636
25°	2647	2574	2574
30°	2585	2514	2492
35°	2527	2442	2406
40°	2454	2370	2325
45°	2382	2299	2242
50°	2304	2225	2145
55°	2223	2138	2059
60°	2131	2035	1960
65°	2034	1933	1844
70°	1910	1809	1723
75°	1738	1665	1625
80°	1543	1495	1419
85°	1258	1200	1076

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2382 cd/sqm

TEST NUMBER: P931537

CATALOG NUMBER: DFN2DS-TR4F0-090DS840-FLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	329.9	3.7
10°-20°	928.3	10.4
20°-30°	1364.2	15.3
30°-40°	1584.5	17.8
40°-50°	1582.5	17.7
50°-60°	1379.9	15.5
60°-70°	1020.1	11.4
70°-80°	577.1	6.5
80°-90°	152.3	1.7
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°	2622.5	29.4
0°-40°	4207.0	47.2
0°-60°	7169.4	80.4
0°-90°	8918.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	8918.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3505	3505	3505	3505	3505	
5°	3505	3492	3455	3482	3475	333
15°	3337	3317	3273	3287	3270	940
25°	3020	2993	2936	2942	2936	1390
35°	2606	2572	2518	2498	2481	1627
45°	2120	2097	2046	2009	1996	1636
55°	1605	1584	1544	1504	1487	1435
65°	1082	1062	1028	998	981	1070
75°	566	560	542	522	529	604
85°	138	135	132	121	118	162
90°	0	0	0	0	0	

TEST NUMBER: P931537

CATALOG NUMBER: DFN2DS-TR4F0-090DS840-FLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3505.4	3505.4	3505.4	3505.4	3505.4
2.5°	3525.8	3509.0	3471.9	3505.4	3499.0
5°	3505.4	3492.2	3455.1	3481.9	3475.4
7.5°	3481.9	3461.9	3424.6	3451.8	3445.0
10°	3445.0	3421.4	3381.0	3407.8	3397.8
12.5°	3394.2	3374.2	3333.8	3350.5	3343.8
15°	3337.0	3317.0	3273.0	3286.6	3269.8
17.5°	3266.2	3246.1	3202.2	3219.0	3202.2
20°	3188.6	3168.6	3121.3	3131.3	3118.1
22.5°	3111.3	3081.0	3036.9	3036.9	3030.1
25°	3020.1	2993.3	2936.1	2942.5	2936.1
27.5°	2918.9	2895.3	2851.7	2841.7	2824.9
30°	2818.1	2790.9	2740.4	2730.4	2716.9
32.5°	2710.1	2690.1	2636.0	2615.7	2602.1
35°	2605.7	2572.1	2518.0	2497.7	2480.9
37.5°	2487.7	2457.3	2403.2	2379.7	2362.9
40°	2366.4	2339.2	2285.2	2255.2	2241.6
42.5°	2248.3	2221.2	2167.6	2133.6	2113.6
45°	2120.3	2096.8	2045.9	2009.1	1995.6
47.5°	1995.6	1972.0	1917.9	1880.8	1860.8
50°	1864.0	1847.1	1799.9	1752.8	1735.9
52.5°	1735.9	1712.3	1668.7	1631.5	1607.9
55°	1604.7	1584.3	1543.8	1503.5	1486.7
57.5°	1473.1	1456.3	1412.3	1371.9	1358.3
60°	1341.4	1328.2	1281.0	1243.8	1233.8
62.5°	1213.4	1189.8	1156.2	1122.6	1109.0
65°	1082.2	1061.8	1028.1	997.8	981.0
67.5°	947.3	930.2	900.1	876.6	863.0
70°	822.5	808.9	778.6	755.0	741.7
72.5°	694.5	680.9	664.1	640.5	630.5
75°	566.2	559.7	542.5	522.5	529.3
77.5°	451.7	438.1	431.3	421.3	411.3
80°	337.2	333.6	326.8	316.8	310.1
82.5°	229.2	229.2	226.0	212.4	212.4
85°	138.0	134.8	131.6	121.2	118.0
87.5°	60.8	54.0	47.2	37.2	33.6
90°	0.0	0.0	0.0	0.0	0.0

TEST NUMBER: P931537

CATALOG NUMBER: DFN2DS-TR4F0-090DS840-FLL

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	14.84	16.45	15.21	16.77	17.08	14.40	16.01	14.76	16.32	16.64
	3H	16.59	18.05	16.97	18.37	18.73	16.10	17.55	16.48	17.88	18.24
	4H	17.24	18.61	17.64	18.95	19.33	16.74	18.11	17.14	18.46	18.84
	6H	17.71	18.98	18.12	19.34	19.73	17.21	18.47	17.62	18.84	19.23
	8H	17.85	19.06	18.27	19.45	19.85	17.35	18.56	17.77	18.95	19.35
	12H	17.94	19.10	18.37	19.48	19.91	17.43	18.59	17.86	18.97	19.40
4H	2H	15.40	16.77	15.80	17.12	17.49	15.05	16.42	15.45	16.77	17.14
	3H	17.38	18.52	17.79	18.92	19.32	16.97	18.12	17.38	18.51	18.91
	4H	18.15	19.19	18.58	19.60	20.04	17.73	18.77	18.16	19.18	19.62
	6H	18.75	19.65	19.20	20.10	20.55	18.32	19.22	18.77	19.66	20.12
	8H	18.94	19.79	19.40	20.23	20.69	18.50	19.35	18.96	19.79	20.26
	12H	19.07	19.83	19.55	20.31	20.78	18.62	19.38	19.10	19.85	20.32
8H	4H	18.43	19.27	18.89	19.72	20.18	18.05	18.90	18.51	19.34	19.81
	6H	19.14	19.84	19.63	20.33	20.81	18.76	19.46	19.25	19.95	20.43
	8H	19.40	20.03	19.91	20.54	21.02	19.01	19.64	19.52	20.15	20.63
	12H	19.60	20.16	20.11	20.65	21.21	19.19	19.74	19.69	20.23	20.80
12H	4H	18.45	19.21	18.93	19.69	20.16	18.09	18.85	18.57	19.32	19.79
	6H	19.19	19.82	19.70	20.32	20.81	18.82	19.45	19.33	19.96	20.44
	8H	19.50	20.06	20.01	20.55	21.11	19.12	19.68	19.63	20.17	20.73