

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: P931591

Luminaire Tested: DFN2DS-TR4F0-120DS840-FLL

Issue Date: 11/20/2024

Test Information

Test Method: LM-79-2019
Report Number: P931591
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-TR4F0-120DS840-FLL
Description: 4 foot, Triangle Define Geo, with Direct Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

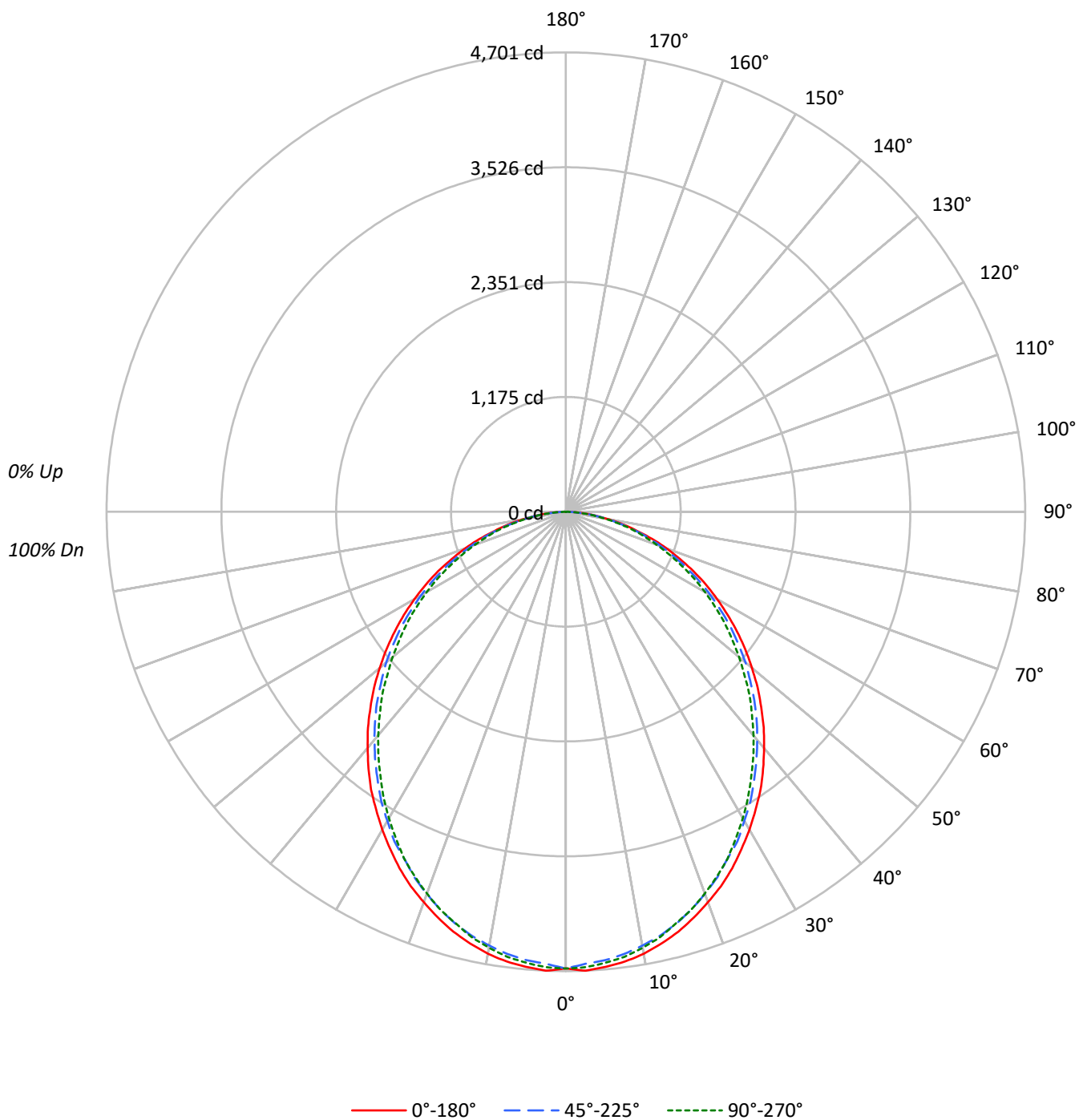
Lumens per Lamp: N/A
Luminaire Lumens: 11891.9 lumens
Efficiency: N/A
Efficacy: 90.2 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular (W 3.96' x L: 3.43' x H: 0')
CIE Type: Direct

Input Watts (W): 131.9
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9821
Total Harmonic Distortion (THDi): 0.08
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P931591

CATALOG NUMBER: DFN2DS-TR4F0-120DS840-FLL

Luminous Intensity Polar Plot



TEST NUMBER: P931591

CATALOG NUMBER: DFN2DS-TR4F0-120DS840-FLL

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		0
RCR																					
0	119	119	119	119	116	116	116	116	111	111	111		106	106	106		102	102	102		100
1	109	104	100	96	106	102	98	95	98	95	92		94	91	89		90	88	86		84
2	99	91	85	79	97	89	83	78	86	81	76		83	78	74		80	76	73		71
3	91	80	72	66	88	79	71	65	76	69	64		73	68	63		71	66	62		60
4	83	71	63	56	81	70	62	56	68	61	55		65	59	54		63	58	54		51
5	77	64	55	49	75	63	55	48	61	53	48		59	52	47		57	51	47		45
6	71	58	49	43	69	57	48	42	55	48	42		53	47	42		52	46	41		39
7	66	52	44	38	64	52	43	38	50	43	37		49	42	37		47	41	37		35
8	61	48	40	34	60	47	39	34	46	39	33		45	38	33		44	38	33		31
9	57	44	36	30	56	43	36	30	42	35	30		41	35	30		40	34	30		28
10	54	41	33	28	53	40	33	28	39	32	27		38	32	27		37	32	27		26

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3713	3713	3713
5°	3727	3674	3695
10°	3705	3637	3655
15°	3659	3589	3586
20°	3594	3519	3515
25°	3530	3432	3432
30°	3447	3352	3323
35°	3369	3256	3208
40°	3272	3160	3100
45°	3176	3065	2989
50°	3072	2966	2861
55°	2963	2851	2745
60°	2842	2714	2614
65°	2712	2577	2459
70°	2547	2411	2297
75°	2317	2220	2166
80°	2057	1994	1891
85°	1678	1600	1435

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3176 cd/sqm

TEST NUMBER: P931591

CATALOG NUMBER: DFN2DS-TR4F0-120DS840-FLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	439.9	3.7
10°-20°	1237.7	10.4
20°-30°	1819.0	15.3
30°-40°	2112.7	17.8
40°-50°	2110.0	17.7
50°-60°	1839.9	15.5
60°-70°	1360.1	11.4
70°-80°	769.5	6.5
80°-90°	203.1	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°	3496.6	29.4
0°-40°	5609.3	47.2
0°-60°	9559.2	80.4
0°-90°	11891.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	11891.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	4674	4674	4674	4674	4674	
5°	4674	4656	4607	4642	4634	444
15°	4449	4423	4364	4382	4360	1253
25°	4027	3991	3915	3923	3915	1853
35°	3474	3429	3357	3330	3308	2170
45°	2827	2796	2728	2679	2661	2182
55°	2140	2112	2058	2005	1982	1913
65°	1443	1416	1371	1330	1308	1427
75°	755	746	723	697	706	806
85°	184	180	176	162	157	216
90°	0	0	0	0	0	

TEST NUMBER: P931591

CATALOG NUMBER: DFN2DS-TR4F0-120DS840-FLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	4674.0	4674.0	4674.0	4674.0	4674.0
2.5°	4701.1	4678.7	4629.1	4674.0	4665.4
5°	4674.0	4656.3	4606.7	4642.4	4633.8
7.5°	4642.4	4615.7	4566.2	4602.4	4593.4
10°	4593.4	4561.9	4508.0	4543.7	4530.4
12.5°	4525.6	4498.9	4445.0	4467.5	4458.4
15°	4449.3	4422.6	4364.0	4382.1	4359.7
17.5°	4355.0	4328.2	4269.6	4292.0	4269.6
20°	4251.4	4224.7	4161.9	4175.2	4157.6
22.5°	4148.4	4107.9	4049.2	4049.2	4040.2
25°	4026.8	3991.1	3914.8	3923.4	3914.8
27.5°	3891.9	3860.5	3802.3	3788.9	3766.6
30°	3757.5	3721.2	3654.0	3640.6	3622.5
32.5°	3613.4	3586.8	3514.7	3487.6	3469.5
35°	3474.2	3429.4	3357.4	3330.2	3307.8
37.5°	3316.8	3276.4	3204.3	3172.9	3150.4
40°	3155.3	3119.0	3046.9	3006.9	2988.8
42.5°	2997.9	2961.7	2890.1	2844.8	2818.1
45°	2827.1	2795.7	2727.9	2678.9	2660.8
47.5°	2660.8	2629.2	2557.3	2507.7	2481.0
50°	2485.3	2462.9	2399.9	2336.9	2314.5
52.5°	2314.5	2283.1	2224.9	2175.3	2143.8
55°	2139.5	2112.4	2058.5	2004.6	1982.2
57.5°	1964.1	1941.6	1883.0	1829.1	1811.0
60°	1788.6	1771.0	1708.0	1658.5	1645.0
62.5°	1617.9	1586.4	1541.6	1496.8	1478.7
65°	1442.9	1415.7	1370.9	1330.3	1308.0
67.5°	1263.2	1240.2	1200.2	1168.8	1150.6
70°	1096.7	1078.6	1038.0	1006.6	989.0
72.5°	926.0	907.9	885.5	854.1	840.6
75°	754.9	746.2	723.3	696.7	705.7
77.5°	602.2	584.1	575.1	561.7	548.3
80°	449.6	444.8	435.8	422.5	413.4
82.5°	305.6	305.6	301.4	283.3	283.3
85°	184.1	179.8	175.5	161.7	157.4
87.5°	81.1	72.0	63.0	49.5	44.8
90°	0.0	0.0	0.0	0.0	0.0

TEST NUMBER: P931591

CATALOG NUMBER: DFN2DS-TR4F0-120DS840-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	15.84	17.45	16.21	17.77	18.08	15.40	17.01	15.76	17.32	17.64
	3H	17.59	19.04	17.97	19.37	19.73	17.10	18.55	17.48	18.88	19.24
	4H	18.24	19.61	18.64	19.95	20.33	17.74	19.11	18.14	19.46	19.83
	6H	18.71	19.97	19.12	20.34	20.73	18.20	19.47	18.62	19.84	20.23
	8H	18.85	20.06	19.27	20.45	20.85	18.35	19.56	18.77	19.95	20.35
	12H	18.94	20.10	19.37	20.48	20.91	18.43	19.59	18.86	19.97	20.40
4H	2H	16.40	17.77	16.80	18.12	18.49	16.05	17.42	16.45	17.76	18.14
	3H	18.38	19.52	18.79	19.92	20.32	17.97	19.12	18.38	19.51	19.91
	4H	19.15	20.19	19.58	20.60	21.04	18.73	19.76	19.16	20.18	20.61
	6H	19.75	20.65	20.20	21.09	21.55	19.32	20.22	19.77	20.66	21.12
	8H	19.94	20.78	20.40	21.23	21.69	19.50	20.35	19.96	20.79	21.25
	12H	20.07	20.83	20.55	21.31	21.78	19.62	20.38	20.10	20.85	21.32
8H	4H	19.43	20.27	19.89	20.71	21.18	19.05	19.90	19.51	20.34	20.81
	6H	20.14	20.84	20.63	21.33	21.81	19.76	20.46	20.25	20.95	21.43
	8H	20.40	21.03	20.91	21.54	22.02	20.01	20.64	20.52	21.15	21.63
	12H	20.60	21.16	21.11	21.65	22.21	20.19	20.74	20.69	21.23	21.80
12H	4H	19.45	20.21	19.93	20.69	21.16	19.09	19.85	19.57	20.32	20.79
	6H	20.19	20.82	20.69	21.32	21.81	19.82	20.45	20.33	20.96	21.44
	8H	20.50	21.06	21.01	21.55	22.11	20.12	20.68	20.63	21.17	21.73