

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: P931592

Luminaire Tested: DFN2DS-TR4F0-120DS840-RLL

Issue Date: 11/20/2024

Test Information

Test Method: LM-79-2019
Report Number: P931592
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-TR4F0-120DS840-RLL
Description: 4 foot, Triangle Define Geo, with Direct 1in Regressed Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

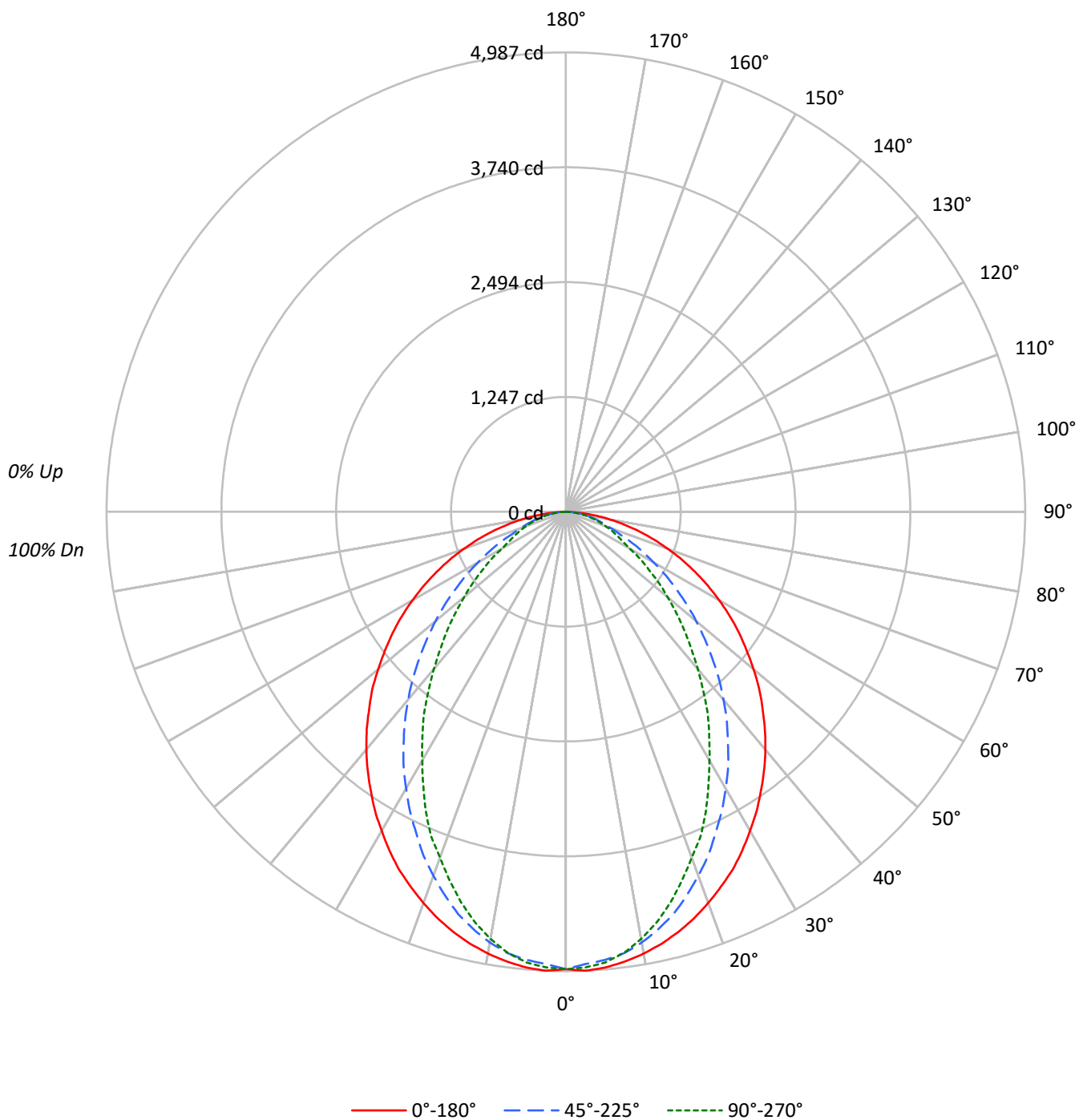
Lumens per Lamp: N/A
Luminaire Lumens: 10210.2 lumens
Efficiency: N/A
Efficacy: 77.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular (W 3.96' x L: 3.43' x H: 0')
CIE Type: Direct

Input Watts (W): 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

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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
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°	3944	3944	3944
5°	3959	3894	3916
10°	3929	3831	3798
15°	3884	3717	3610
20°	3821	3555	3377
25°	3757	3371	3150
30°	3668	3182	2860
35°	3582	2976	2605
40°	3494	2763	2311
45°	3392	2524	2044
50°	3287	2282	1783
55°	3180	2022	1531
60°	3055	1749	1271
65°	2914	1470	1157
70°	2745	1210	1064
75°	2537	1103	993
80°	2240	985	905
85°	1760	778	778

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 3392 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	465.3	4.6
10°-20°	1277.3	12.5
20°-30°	1793.3	17.6
30°-40°	1954.8	19.1
40°-50°	1796.7	17.6
50°-60°	1411.0	13.8
60°-70°	918.4	9.0
70°-80°	472.8	4.6
80°-90°	120.7	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°	3535.9	34.6
0°-40°	5490.6	53.8
0°-60°	8698.3	85.2
0°-90°	10210.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	10210.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	4965	4965	4965	4965	4965	
5°	4965	4942	4884	4924	4911	471
15°	4722	4672	4520	4434	4390	1331
25°	4286	4142	3846	3662	3594	1971
35°	3693	3464	3069	2786	2686	2312
45°	3019	2718	2246	1927	1819	2332
55°	2296	1945	1460	1191	1105	2051
65°	1550	1186	782	629	615	1537
75°	826	512	360	328	324	874
85°	193	99	85	85	85	232
90°	0	0	0	0	0	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	4964.6	4964.6	4964.6	4964.6	4964.6
2.5°	4987.0	4964.6	4915.0	4960.3	4951.1
5°	4964.6	4942.1	4883.5	4924.0	4910.7
7.5°	4924.0	4897.3	4834.4	4852.0	4829.6
10°	4870.2	4838.7	4749.0	4735.2	4708.6
12.5°	4802.9	4762.5	4640.8	4614.2	4564.7
15°	4721.9	4672.4	4519.8	4434.4	4389.7
17.5°	4627.5	4555.6	4366.8	4268.2	4196.2
20°	4519.8	4429.7	4205.2	4093.2	3994.0
22.5°	4403.0	4299.6	4038.8	3886.3	3819.1
25°	4286.3	4142.2	3845.7	3661.8	3594.1
27.5°	4147.0	3994.0	3666.1	3455.0	3351.4
30°	3998.8	3827.7	3468.3	3239.4	3117.9
32.5°	3854.9	3647.9	3280.0	3010.2	2897.7
35°	3693.3	3464.0	3068.8	2785.7	2686.5
37.5°	3535.9	3288.6	2871.0	2560.7	2448.6
40°	3369.6	3100.3	2664.2	2345.2	2228.4
42.5°	3198.9	2911.5	2457.8	2125.0	2013.0
45°	3019.2	2718.0	2246.5	1927.2	1819.4
47.5°	2848.5	2529.7	2044.4	1725.1	1626.4
50°	2659.9	2340.9	1846.6	1536.3	1442.4
52.5°	2475.4	2138.3	1657.9	1361.4	1276.1
55°	2295.7	1945.3	1460.1	1190.7	1105.4
57.5°	2111.6	1752.3	1285.1	1033.4	961.5
60°	1922.9	1563.5	1100.6	871.9	799.9
62.5°	1738.9	1379.5	943.3	727.9	692.1
65°	1550.1	1186.0	781.8	629.2	615.4
67.5°	1370.5	1006.2	629.2	552.5	539.1
70°	1181.7	831.3	521.0	476.2	458.1
72.5°	1002.0	669.3	435.6	399.9	390.9
75°	826.5	511.9	359.5	327.9	323.6
77.5°	651.7	363.7	283.2	265.1	256.0
80°	489.6	260.8	215.4	197.8	197.8
82.5°	341.3	175.4	148.2	139.1	139.1
85°	193.1	98.7	85.3	85.3	85.3
87.5°	72.0	35.7	35.7	31.4	31.4
90°	0.0	0.0	0.0	0.0	0.0

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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	16.00	17.52	16.37	17.84	18.15	11.96	13.48	12.33	13.80	14.11
	3H	17.77	19.13	18.15	19.46	19.82	13.23	14.59	13.61	14.92	15.28
	4H	18.43	19.71	18.83	20.06	20.44	13.73	15.01	14.13	15.36	15.74
	6H	18.92	20.11	19.34	20.47	20.86	14.11	15.29	14.52	15.66	16.05
	8H	19.09	20.21	19.51	20.60	21.01	14.24	15.36	14.66	15.75	16.15
	12H	19.19	20.27	19.62	20.65	21.08	14.32	15.39	14.75	15.78	16.21
4H	2H	16.11	17.39	16.51	17.74	18.11	12.66	13.94	13.06	14.29	14.67
	3H	18.04	19.10	18.45	19.50	19.90	14.10	15.16	14.51	15.56	15.97
	4H	18.79	19.75	19.22	20.16	20.60	14.70	15.66	15.13	16.07	16.51
	6H	19.38	20.21	19.84	20.66	21.12	15.19	16.02	15.65	16.46	16.92
	8H	19.60	20.37	20.06	20.82	21.28	15.35	16.13	15.81	16.57	17.04
	12H	19.75	20.44	20.23	20.92	21.39	15.47	16.16	15.95	16.64	17.11
8H	4H	18.81	19.59	19.28	20.03	20.50	15.05	15.83	15.52	16.28	16.74
	6H	19.45	20.09	19.95	20.58	21.06	15.64	16.28	16.14	16.77	17.25
	8H	19.70	20.28	20.21	20.79	21.28	15.86	16.44	16.38	16.95	17.44
	12H	19.91	20.42	20.41	20.91	21.47	16.04	16.55	16.55	17.04	17.61
12H	4H	18.80	19.49	19.28	19.97	20.44	15.10	15.79	15.58	16.27	16.74
	6H	19.43	20.01	19.95	20.52	21.01	15.70	16.28	16.22	16.79	17.28
	8H	19.72	20.23	20.23	20.72	21.28	15.98	16.49	16.49	16.98	17.54