

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: P931223

Luminaire Tested: DFN2DS-SQ4F0-160DS940-FLL

Issue Date: 11/20/2024

Test Information

Test Method: LM-79-2019
Report Number: P931223
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-SQ4F0-160DS940-FLL
Description: 4 foot, Square Define Geo, with Direct Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

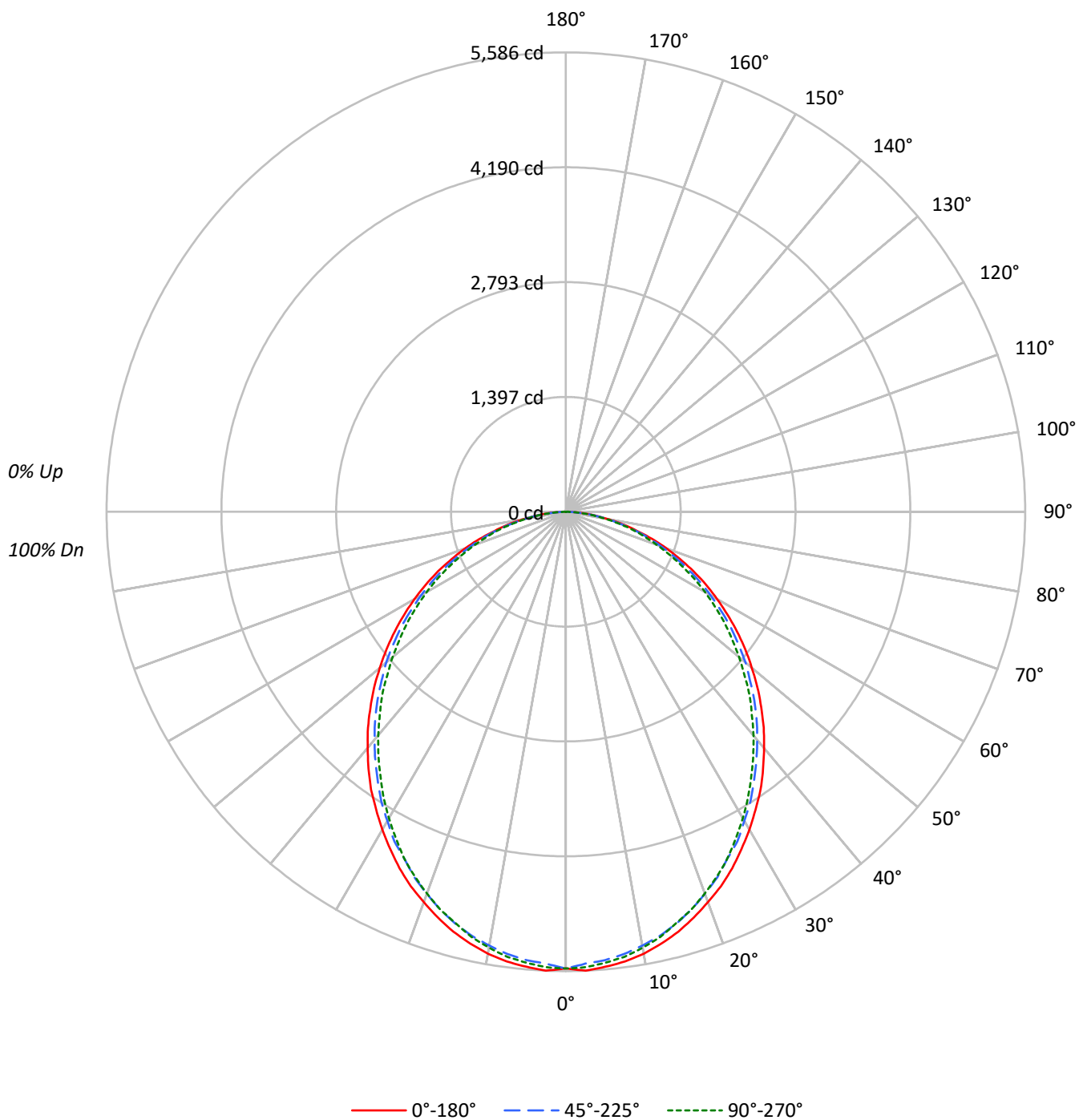
Lumens per Lamp: N/A
Luminaire Lumens: 14129.2 lumens
Efficiency: N/A
Efficacy: 80.9 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular (W 3.92' x L: 3.92' x H: 0')
CIE Type: Direct

Input Watts (W): 174.6
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9971
Total Harmonic Distortion (THDi): 0.049
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	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°	3897	3897	3897
5°	3912	3855	3878
10°	3888	3816	3835
15°	3840	3767	3763
20°	3772	3692	3689
25°	3704	3601	3601
30°	3617	3518	3487
35°	3536	3417	3367
40°	3434	3316	3253
45°	3333	3216	3137
50°	3223	3113	3002
55°	3110	2992	2881
60°	2982	2848	2743
65°	2846	2704	2580
70°	2673	2530	2411
75°	2431	2330	2273
80°	2159	2092	1985
85°	1761	1679	1506

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3333 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	522.7	3.7
10°-20°	1470.6	10.4
20°-30°	2161.2	15.3
30°-40°	2510.1	17.8
40°-50°	2507.0	17.7
50°-60°	2186.0	15.5
60°-70°	1616.0	11.4
70°-80°	914.3	6.5
80°-90°	241.3	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°	4154.5	29.4
0°-40°	6664.7	47.2
0°-60°	11357.7	80.4
0°-90°	14129.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	14129.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	5553	5553	5553	5553	5553	
5°	5553	5532	5473	5516	5506	527
15°	5286	5255	5185	5207	5180	1489
25°	4784	4742	4651	4662	4651	2202
35°	4128	4075	3989	3957	3930	2578
45°	3359	3322	3241	3183	3161	2592
55°	2542	2510	2446	2382	2355	2273
65°	1714	1682	1629	1581	1554	1695
75°	897	887	859	828	838	957
85°	219	214	208	192	187	257
90°	0	0	0	0	0	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	5553.3	5553.3	5553.3	5553.3	5553.3
2.5°	5585.6	5558.9	5500.1	5553.3	5543.1
5°	5553.3	5532.4	5473.4	5515.9	5505.7
7.5°	5515.9	5484.2	5425.2	5468.3	5457.5
10°	5457.5	5420.1	5356.2	5398.7	5382.8
12.5°	5377.2	5345.4	5281.4	5308.0	5297.2
15°	5286.4	5254.8	5185.0	5206.6	5179.9
17.5°	5174.3	5142.6	5072.9	5099.5	5072.9
20°	5051.3	5019.6	4944.8	4960.7	4939.7
22.5°	4929.0	4880.8	4811.1	4811.1	4800.4
25°	4784.5	4742.1	4651.3	4661.6	4651.3
27.5°	4624.1	4586.8	4517.6	4501.8	4475.2
30°	4464.4	4421.4	4341.5	4325.6	4304.1
32.5°	4293.3	4261.6	4176.0	4143.7	4122.2
35°	4127.9	4074.7	3989.0	3956.7	3930.2
37.5°	3940.9	3892.8	3807.2	3769.8	3743.2
40°	3748.8	3705.8	3620.3	3572.6	3551.1
42.5°	3561.9	3518.9	3433.8	3380.1	3348.3
45°	3359.1	3321.6	3241.3	3182.8	3161.3
47.5°	3161.3	3124.0	3038.4	2979.5	2947.8
50°	2952.9	2926.2	2851.5	2776.6	2750.0
52.5°	2750.0	2712.7	2643.5	2584.6	2547.2
55°	2542.1	2509.8	2445.8	2381.7	2355.1
57.5°	2333.7	2307.0	2237.3	2173.3	2151.8
60°	2125.1	2104.1	2029.4	1970.4	1954.6
62.5°	1922.3	1884.9	1831.6	1778.4	1756.9
65°	1714.3	1682.0	1628.8	1580.7	1554.0
67.5°	1500.8	1473.6	1426.0	1388.6	1367.1
70°	1303.0	1281.5	1233.4	1196.0	1175.0
72.5°	1100.2	1078.7	1052.1	1014.6	998.9
75°	896.8	886.6	859.4	827.7	838.5
77.5°	715.6	694.1	683.3	667.4	651.5
80°	534.2	528.6	517.8	501.9	491.2
82.5°	363.1	363.1	358.0	336.6	336.6
85°	218.7	213.5	208.5	192.0	187.0
87.5°	96.3	85.5	74.7	59.0	53.3
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	16.01	17.62	16.37	17.93	18.25	15.56	17.17	15.93	17.49	17.80
	3H	17.76	19.21	18.14	19.54	19.90	17.27	18.72	17.64	19.05	19.41
	4H	18.40	19.77	18.80	20.12	20.50	17.91	19.28	18.31	19.63	20.00
	6H	18.87	20.14	19.28	20.51	20.90	18.37	19.64	18.78	20.01	20.40
	8H	19.02	20.23	19.44	20.62	21.02	18.51	19.72	18.94	20.11	20.51
	12H	19.11	20.27	19.54	20.65	21.08	18.59	19.75	19.02	20.14	20.57
4H	2H	16.57	17.94	16.97	18.29	18.66	16.22	17.58	16.61	17.93	18.31
	3H	18.54	19.69	18.95	20.09	20.49	18.14	19.28	18.55	19.68	20.08
	4H	19.32	20.36	19.75	20.77	21.21	18.90	19.93	19.33	20.35	20.78
	6H	19.92	20.82	20.37	21.26	21.72	19.48	20.39	19.94	20.83	21.29
	8H	20.11	20.95	20.57	21.39	21.86	19.67	20.51	20.13	20.96	21.42
	12H	20.24	21.00	20.72	21.47	21.94	19.79	20.55	20.27	21.02	21.49
8H	4H	19.59	20.44	20.05	20.88	21.35	19.22	20.07	19.68	20.51	20.97
	6H	20.31	21.01	20.80	21.50	21.97	19.93	20.63	20.42	21.12	21.59
	8H	20.57	21.20	21.08	21.70	22.19	20.18	20.81	20.69	21.31	21.80
	12H	20.77	21.32	21.27	21.82	22.38	20.35	20.91	20.86	21.40	21.96
12H	4H	19.62	20.38	20.10	20.86	21.32	19.25	20.01	19.74	20.49	20.96
	6H	20.35	20.99	20.86	21.49	21.98	19.98	20.62	20.49	21.12	21.61
	8H	20.67	21.22	21.17	21.72	22.28	20.29	20.85	20.80	21.34	21.90

END OF REPORT