

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: P931221

Luminaire Tested: DFN2DS-SQ4F0-160DS935-FLL

Issue Date: 11/20/2024

Test Information

Test Method: LM-79-2019
Report Number: P931221
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-SQ4F0-160DS935-FLL
Description: 4 foot, Square Define Geo, with Direct Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

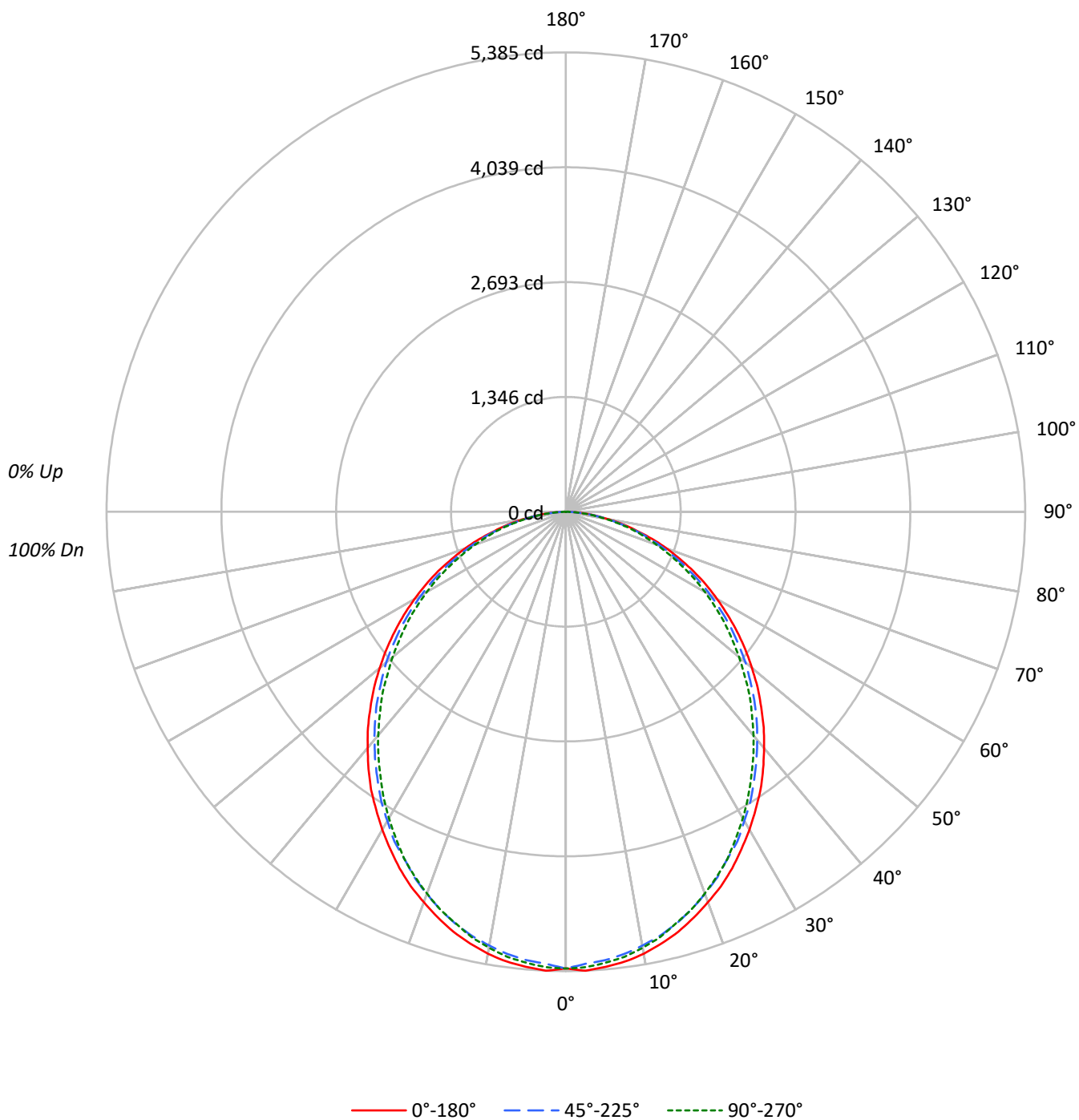
Lumens per Lamp: N/A
Luminaire Lumens: 13622.4 lumens
Efficiency: N/A
Efficacy: 78.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular (W 3.92' x L: 3.92' x H: 0')
CIE Type: Direct

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°	3757	3757	3757
5°	3771	3717	3739
10°	3749	3679	3698
15°	3702	3631	3628
20°	3637	3560	3556
25°	3571	3472	3472
30°	3487	3391	3362
35°	3409	3294	3246
40°	3311	3197	3136
45°	3214	3101	3024
50°	3108	3001	2894
55°	2998	2885	2778
60°	2875	2746	2644
65°	2744	2607	2488
70°	2577	2440	2324
75°	2344	2246	2192
80°	2081	2017	1914
85°	1698	1618	1452

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 3214 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	503.9	3.7
10°-20°	1417.9	10.4
20°-30°	2083.7	15.3
30°-40°	2420.1	17.8
40°-50°	2417.1	17.7
50°-60°	2107.6	15.5
60°-70°	1558.0	11.4
70°-80°	881.5	6.5
80°-90°	232.7	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°	4005.5	29.4
0°-40°	6425.6	47.2
0°-60°	10950.3	80.4
0°-90°	13622.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	13622.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	5354	5354	5354	5354	5354	
5°	5354	5334	5277	5318	5308	508
15°	5097	5066	4999	5020	4994	1435
25°	4613	4572	4484	4494	4484	2123
35°	3980	3928	3846	3815	3789	2485
45°	3239	3202	3125	3069	3048	2499
55°	2451	2420	2358	2296	2271	2191
65°	1653	1622	1570	1524	1498	1634
75°	865	855	829	798	808	923
85°	211	206	201	185	180	248
90°	0	0	0	0	0	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	5354.1	5354.1	5354.1	5354.1	5354.1
2.5°	5385.2	5359.5	5302.8	5354.1	5344.2
5°	5354.1	5333.9	5277.0	5318.1	5308.2
7.5°	5318.1	5287.5	5230.6	5272.1	5261.7
10°	5261.7	5225.7	5164.0	5205.0	5189.7
12.5°	5184.3	5153.6	5091.9	5117.6	5107.2
15°	5096.8	5066.3	4999.0	5019.8	4994.1
17.5°	4988.7	4958.1	4890.9	4916.5	4890.9
20°	4870.1	4839.6	4767.4	4782.7	4762.5
22.5°	4752.2	4705.7	4638.5	4638.5	4628.2
25°	4612.9	4571.9	4484.5	4494.4	4484.5
27.5°	4458.2	4422.2	4355.6	4340.3	4314.6
30°	4304.2	4262.8	4185.7	4170.4	4149.7
32.5°	4139.3	4108.7	4026.2	3995.0	3974.3
35°	3979.8	3928.5	3845.9	3814.8	3789.2
37.5°	3799.6	3753.1	3670.7	3634.5	3608.9
40°	3614.3	3572.9	3490.4	3444.5	3423.7
42.5°	3434.2	3392.6	3310.7	3258.8	3228.2
45°	3238.6	3202.5	3125.0	3068.7	3047.9
47.5°	3047.9	3011.9	2929.4	2872.6	2842.0
50°	2846.9	2821.2	2749.2	2677.0	2651.4
52.5°	2651.4	2615.3	2548.7	2491.8	2455.8
55°	2450.9	2419.8	2358.0	2296.3	2270.7
57.5°	2249.9	2224.2	2157.1	2095.3	2074.6
60°	2048.9	2028.7	1956.6	1899.7	1884.4
62.5°	1853.3	1817.3	1765.9	1714.6	1693.9
65°	1652.8	1621.7	1570.4	1524.0	1498.3
67.5°	1447.0	1420.7	1374.9	1338.8	1318.0
70°	1256.3	1235.6	1189.1	1153.1	1132.9
72.5°	1060.7	1040.0	1014.4	978.2	963.0
75°	864.6	854.8	828.6	798.0	808.4
77.5°	689.9	669.2	658.8	643.5	628.1
80°	515.1	509.6	499.2	483.9	473.6
82.5°	350.1	350.1	345.2	324.5	324.5
85°	210.9	205.9	201.0	185.2	180.3
87.5°	92.9	82.5	72.1	56.8	51.3
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	15.88	17.49	16.25	17.81	18.12	15.44	17.05	15.80	17.36	17.68
	3H	17.63	19.09	18.01	19.41	19.77	17.14	18.59	17.52	18.92	19.28
	4H	18.28	19.65	18.68	19.99	20.37	17.78	19.15	18.18	19.50	19.88
	6H	18.75	20.02	19.16	20.38	20.77	18.25	19.51	18.66	19.88	20.27
	8H	18.89	20.10	19.31	20.49	20.89	18.39	19.60	18.81	19.99	20.39
	12H	18.98	20.14	19.41	20.52	20.95	18.47	19.63	18.90	20.01	20.44
4H	2H	16.44	17.81	16.84	18.16	18.53	16.09	17.46	16.49	17.81	18.18
	3H	18.42	19.56	18.83	19.96	20.36	18.01	19.16	18.42	19.55	19.95
	4H	19.19	20.23	19.62	20.64	21.08	18.77	19.81	19.20	20.22	20.66
	6H	19.79	20.69	20.24	21.14	21.59	19.36	20.26	19.81	20.70	21.16
	8H	19.98	20.83	20.44	21.27	21.73	19.54	20.39	20.00	20.83	21.30
	12H	20.11	20.87	20.59	21.35	21.82	19.66	20.42	20.14	20.89	21.36
8H	4H	19.47	20.31	19.93	20.76	21.22	19.09	19.94	19.55	20.38	20.85
	6H	20.18	20.88	20.67	21.37	21.85	19.80	20.50	20.29	20.99	21.47
	8H	20.44	21.07	20.95	21.58	22.06	20.05	20.68	20.56	21.19	21.67
	12H	20.64	21.20	21.15	21.69	22.25	20.23	20.78	20.73	21.28	21.84
12H	4H	19.49	20.25	19.97	20.73	21.20	19.13	19.89	19.61	20.36	20.83
	6H	20.23	20.86	20.74	21.36	21.85	19.86	20.49	20.37	21.00	21.48
	8H	20.54	21.10	21.05	21.59	22.15	20.16	20.72	20.67	21.21	21.77