

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: P931219

Luminaire Tested: DFN2DS-SQ4F0-160DS930-FLL

Issue Date: 11/20/2024

Test Information

Test Method: LM-79-2019
Report Number: P931219
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-SQ4F0-160DS930-FLL
Description: 4 foot, Square Define Geo, with Direct Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

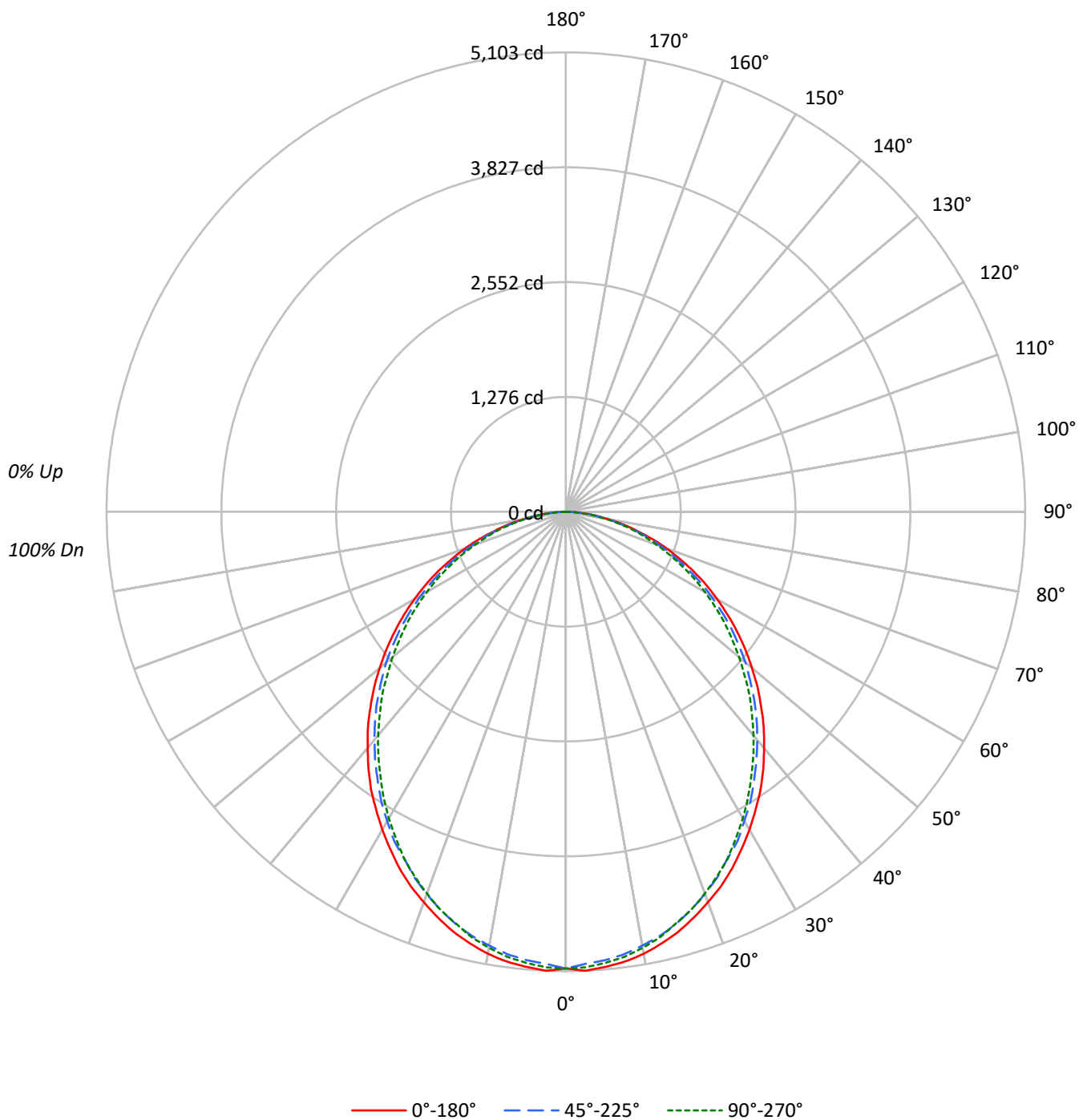
Lumens per Lamp: N/A
Luminaire Lumens: 12909.6 lumens
Efficiency: N/A
Efficacy: 73.9 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular (W 3.92' x L: 3.92' x H: 0')
CIE Type: Direct

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°	3560	3560	3560
5°	3574	3522	3543
10°	3553	3487	3504
15°	3509	3441	3438
20°	3446	3374	3370
25°	3384	3290	3290
30°	3305	3214	3186
35°	3231	3122	3076
40°	3137	3030	2972
45°	3046	2939	2866
50°	2945	2844	2743
55°	2841	2734	2632
60°	2725	2602	2506
65°	2601	2471	2357
70°	2443	2312	2203
75°	2221	2129	2077
80°	1972	1912	1814
85°	1609	1534	1375

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 3046 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	477.6	3.7
10°-20°	1343.7	10.4
20°-30°	1974.7	15.3
30°-40°	2293.5	17.8
40°-50°	2290.6	17.7
50°-60°	1997.3	15.5
60°-70°	1476.5	11.4
70°-80°	835.4	6.5
80°-90°	220.5	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°	3795.9	29.4
0°-40°	6089.4	47.2
0°-60°	10377.3	80.4
0°-90°	12909.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	12909.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	5074	5074	5074	5074	5074	
5°	5074	5055	5001	5040	5030	482
15°	4830	4801	4737	4757	4733	1360
25°	4372	4333	4250	4259	4250	2012
35°	3772	3723	3645	3615	3591	2355
45°	3069	3035	2962	2908	2888	2369
55°	2323	2293	2235	2176	2152	2077
65°	1566	1537	1488	1444	1420	1549
75°	819	810	785	756	766	875
85°	200	195	190	176	171	235
90°	0	0	0	0	0	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	5073.9	5073.9	5073.9	5073.9	5073.9
2.5°	5103.4	5079.1	5025.3	5073.9	5064.6
5°	5073.9	5054.8	5000.9	5039.8	5030.4
7.5°	5039.8	5010.8	4956.9	4996.3	4986.4
10°	4986.4	4952.3	4893.8	4932.6	4918.1
12.5°	4913.0	4884.0	4825.5	4849.8	4840.0
15°	4830.1	4801.2	4737.4	4757.2	4732.8
17.5°	4727.7	4698.6	4635.0	4659.3	4635.0
20°	4615.3	4586.3	4518.0	4532.5	4513.3
22.5°	4503.5	4459.5	4395.8	4395.8	4386.0
25°	4371.5	4332.7	4249.8	4259.2	4249.8
27.5°	4225.0	4190.8	4127.6	4113.2	4088.9
30°	4079.0	4039.7	3966.7	3952.2	3932.5
32.5°	3922.7	3893.7	3815.5	3786.0	3766.4
35°	3771.6	3722.9	3644.7	3615.2	3590.9
37.5°	3600.8	3556.7	3478.6	3444.4	3420.1
40°	3425.2	3385.9	3307.8	3264.2	3244.6
42.5°	3254.5	3215.1	3137.4	3088.3	3059.3
45°	3069.1	3034.9	2961.5	2908.1	2888.4
47.5°	2888.4	2854.3	2776.1	2722.3	2693.3
50°	2698.0	2673.6	2605.3	2536.9	2512.6
52.5°	2512.6	2478.5	2415.3	2361.5	2327.3
55°	2322.7	2293.2	2234.6	2176.1	2151.8
57.5°	2132.2	2107.8	2044.2	1985.7	1966.0
60°	1941.7	1922.5	1854.2	1800.3	1785.8
62.5°	1756.3	1722.2	1673.5	1624.9	1605.2
65°	1566.3	1536.8	1488.2	1444.3	1419.9
67.5°	1371.2	1346.4	1302.9	1268.7	1249.1
70°	1190.6	1170.9	1126.9	1092.8	1073.6
72.5°	1005.2	985.6	961.3	927.1	912.6
75°	819.4	810.1	785.3	756.2	766.1
77.5°	653.8	634.2	624.3	609.8	595.3
80°	488.1	483.0	473.1	458.6	448.8
82.5°	331.8	331.8	327.1	307.5	307.5
85°	199.8	195.1	190.5	175.5	170.8
87.5°	88.0	78.2	68.3	53.9	48.7
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	15.69	17.31	16.06	17.62	17.93	15.25	16.86	15.62	17.17	17.49
	3H	17.44	18.90	17.82	19.23	19.59	16.95	18.41	17.33	18.73	19.10
	4H	18.09	19.46	18.49	19.81	20.18	17.60	18.97	17.99	19.31	19.69
	6H	18.56	19.83	18.97	20.19	20.58	18.06	19.33	18.47	19.69	20.08
	8H	18.70	19.91	19.13	20.30	20.70	18.20	19.41	18.62	19.80	20.20
	12H	18.79	19.95	19.22	20.33	20.76	18.28	19.44	18.71	19.82	20.25
4H	2H	16.25	17.62	16.65	17.97	18.35	15.90	17.27	16.30	17.62	17.99
	3H	18.23	19.38	18.64	19.77	20.17	17.82	18.97	18.23	19.37	19.77
	4H	19.01	20.04	19.44	20.46	20.89	18.58	19.62	19.01	20.03	20.47
	6H	19.60	20.51	20.06	20.95	21.40	19.17	20.08	19.62	20.52	20.97
	8H	19.79	20.64	20.25	21.08	21.55	19.35	20.20	19.82	20.64	21.11
	12H	19.92	20.68	20.40	21.16	21.63	19.47	20.23	19.95	20.71	21.18
8H	4H	19.28	20.13	19.74	20.57	21.03	18.91	19.75	19.37	20.19	20.66
	6H	19.99	20.70	20.49	21.19	21.66	19.61	20.32	20.11	20.80	21.28
	8H	20.25	20.88	20.76	21.39	21.88	19.86	20.49	20.37	21.00	21.49
	12H	20.45	21.01	20.96	21.50	22.06	20.04	20.60	20.55	21.09	21.65
12H	4H	19.31	20.07	19.79	20.54	21.01	18.94	19.70	19.42	20.18	20.65
	6H	20.04	20.67	20.55	21.18	21.66	19.67	20.30	20.18	20.81	21.30
	8H	20.35	20.91	20.86	21.40	21.96	19.98	20.53	20.48	21.02	21.58