

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: P931225

Luminaire Tested: DFN2DS-SQ4F0-160DS950-FLL

Issue Date: 11/20/2024

Test Information

Test Method: LM-79-2019
Report Number: P931225
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-SQ4F0-160DS950-FLL
Description: 4 foot, Square Define Geo, with Direct Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

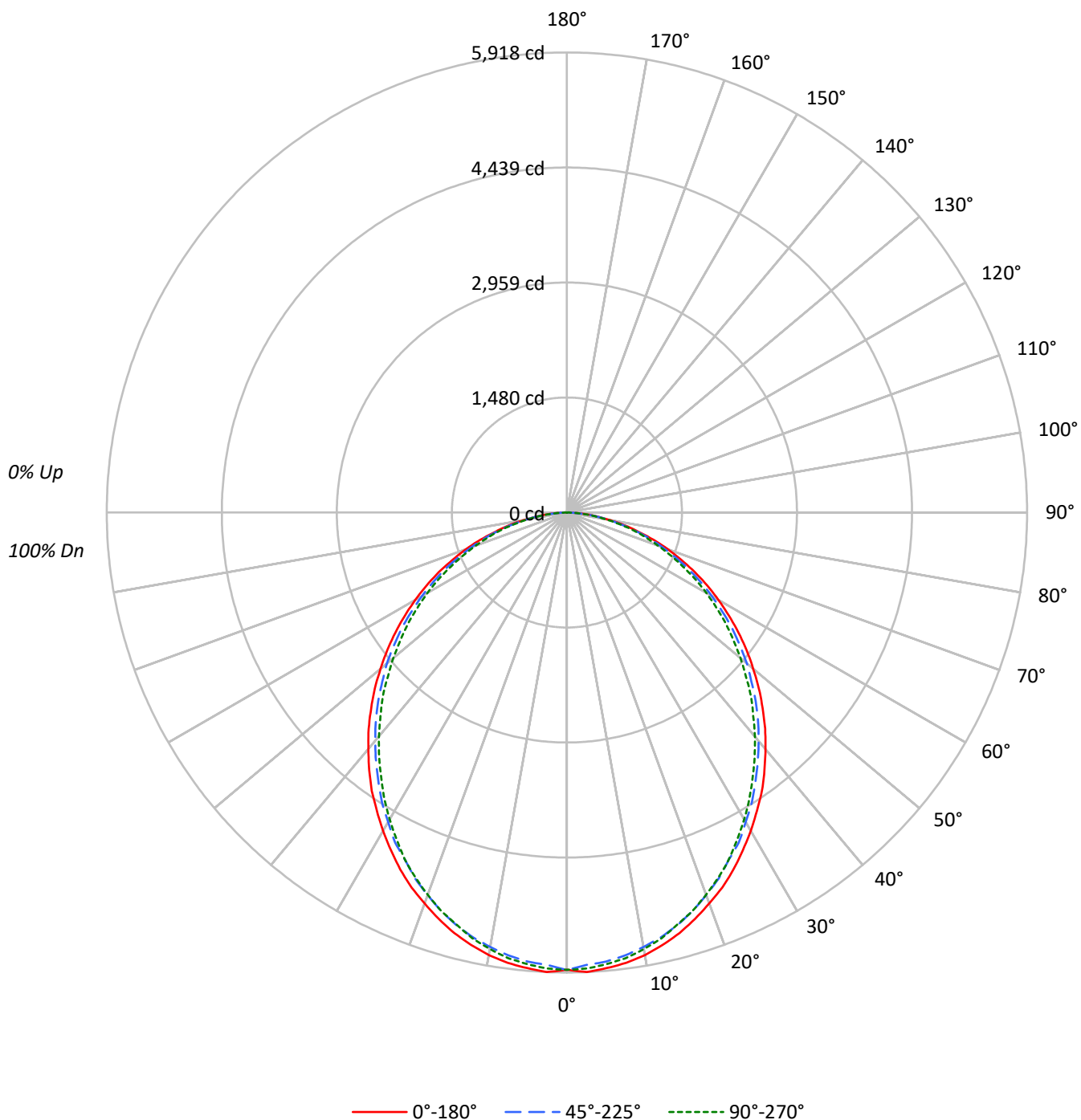
Lumens per Lamp: N/A
Luminaire Lumens: 14968.8 lumens
Efficiency: N/A
Efficacy: 85.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular (W 3.92' x L: 3.92' x H: 0')
CIE Type: Direct

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°	4128	4128	4128
5°	4144	4084	4108
10°	4120	4043	4063
15°	4068	3990	3986
20°	3996	3912	3908
25°	3924	3815	3815
30°	3832	3727	3694
35°	3746	3620	3567
40°	3638	3513	3446
45°	3531	3407	3323
50°	3415	3298	3180
55°	3295	3170	3052
60°	3160	3017	2906
65°	3015	2865	2734
70°	2832	2681	2554
75°	2576	2468	2408
80°	2287	2217	2103
85°	1865	1778	1595

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3531 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	553.7	3.7
10°-20°	1558.0	10.4
20°-30°	2289.6	15.3
30°-40°	2659.3	17.8
40°-50°	2656.0	17.7
50°-60°	2315.9	15.5
60°-70°	1712.0	11.4
70°-80°	968.6	6.5
80°-90°	255.6	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°	4401.4	29.4
0°-40°	7060.7	47.2
0°-60°	12032.6	80.4
0°-90°	14968.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	14968.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	5883	5883	5883	5883	5883	
5°	5883	5861	5799	5844	5833	558
15°	5600	5567	5493	5516	5488	1577
25°	5069	5024	4928	4939	4928	2332
35°	4373	4317	4226	4192	4164	2731
45°	3559	3519	3434	3372	3349	2746
55°	2693	2659	2591	2523	2495	2408
65°	1816	1782	1726	1675	1646	1796
75°	950	939	910	877	888	1014
85°	232	226	221	204	198	272
90°	0	0	0	0	0	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	5883.3	5883.3	5883.3	5883.3	5883.3
2.5°	5917.5	5889.2	5826.9	5883.3	5872.4
5°	5883.3	5861.1	5798.6	5843.7	5832.8
7.5°	5843.7	5810.0	5747.6	5793.2	5781.8
10°	5781.8	5742.2	5674.4	5719.4	5702.6
12.5°	5696.6	5663.0	5595.2	5623.4	5612.0
15°	5600.5	5567.0	5493.1	5516.0	5487.7
17.5°	5481.8	5448.1	5374.3	5402.5	5374.3
20°	5351.4	5317.9	5238.6	5255.4	5233.2
22.5°	5221.9	5170.9	5097.0	5097.0	5085.6
25°	5068.8	5023.8	4927.7	4938.6	4927.7
27.5°	4898.9	4859.3	4786.0	4769.3	4741.1
30°	4729.6	4684.1	4599.4	4582.6	4559.8
32.5°	4548.4	4514.8	4424.1	4389.9	4367.1
35°	4373.2	4316.8	4226.0	4191.8	4163.7
37.5°	4175.1	4124.1	4033.4	3993.8	3965.6
40°	3971.6	3926.0	3835.4	3784.9	3762.1
42.5°	3773.6	3727.9	3637.9	3580.9	3547.2
45°	3558.7	3519.0	3433.8	3371.9	3349.2
47.5°	3349.2	3309.6	3219.0	3156.5	3122.9
50°	3128.3	3100.1	3020.9	2941.6	2913.4
52.5°	2913.4	2873.8	2800.6	2738.1	2698.5
55°	2693.2	2658.9	2591.1	2523.2	2495.1
57.5°	2472.3	2444.1	2370.2	2302.4	2279.6
60°	2251.4	2229.2	2150.0	2087.5	2070.7
62.5°	2036.5	1996.9	1940.5	1884.0	1861.3
65°	1816.2	1782.0	1725.6	1674.6	1646.4
67.5°	1590.0	1561.1	1510.8	1471.1	1448.3
70°	1380.5	1357.7	1306.7	1267.1	1244.8
72.5°	1165.6	1142.8	1114.6	1074.9	1058.2
75°	950.1	939.3	910.5	876.9	888.3
77.5°	758.1	735.3	723.9	707.0	690.2
80°	566.0	560.0	548.6	531.8	520.4
82.5°	384.7	384.7	379.3	356.5	356.5
85°	231.7	226.2	220.8	203.5	198.1
87.5°	102.1	90.6	79.2	62.5	56.4
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	16.21	17.82	16.57	18.13	18.45	15.76	17.37	16.13	17.69	18.00
	3H	17.96	19.41	18.34	19.74	20.10	17.47	18.92	17.84	19.25	19.61
	4H	18.61	19.97	19.00	20.32	20.70	18.11	19.48	18.51	19.83	20.20
	6H	19.07	20.34	19.49	20.71	21.10	18.57	19.84	18.98	20.21	20.60
	8H	19.22	20.43	19.64	20.82	21.22	18.71	19.92	19.14	20.31	20.71
	12H	19.31	20.47	19.74	20.85	21.28	18.80	19.96	19.22	20.34	20.77
4H	2H	16.77	18.14	17.17	18.49	18.86	16.42	17.79	16.81	18.13	18.51
	3H	18.74	19.89	19.15	20.29	20.69	18.34	19.48	18.75	19.88	20.28
	4H	19.52	20.56	19.95	20.97	21.41	19.10	20.13	19.53	20.55	20.98
	6H	20.12	21.02	20.57	21.46	21.92	19.68	20.59	20.14	21.03	21.49
	8H	20.31	21.15	20.77	21.60	22.06	19.87	20.72	20.33	21.16	21.62
	12H	20.44	21.20	20.92	21.67	22.14	19.99	20.75	20.47	21.22	21.69
8H	4H	19.79	20.64	20.25	21.08	21.55	19.42	20.27	19.88	20.71	21.17
	6H	20.51	21.21	21.00	21.70	22.18	20.13	20.83	20.62	21.32	21.79
	8H	20.77	21.40	21.28	21.91	22.39	20.38	21.01	20.89	21.51	22.00
	12H	20.97	21.53	21.47	22.02	22.58	20.55	21.11	21.06	21.60	22.16
12H	4H	19.82	20.58	20.30	21.06	21.53	19.46	20.22	19.94	20.69	21.16
	6H	20.55	21.19	21.06	21.69	22.18	20.18	20.82	20.69	21.32	21.81
	8H	20.87	21.43	21.37	21.92	22.48	20.49	21.05	21.00	21.54	22.10