

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: P931197

Luminaire Tested: DFN2DS-SQ4F0-140DS850-FLL

Issue Date: 11/20/2024

Test Information

Test Method: LM-79-2019
Report Number: P931197
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-SQ4F0-140DS850-FLL
Description: 4 foot, Square Define Geo, with Direct Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

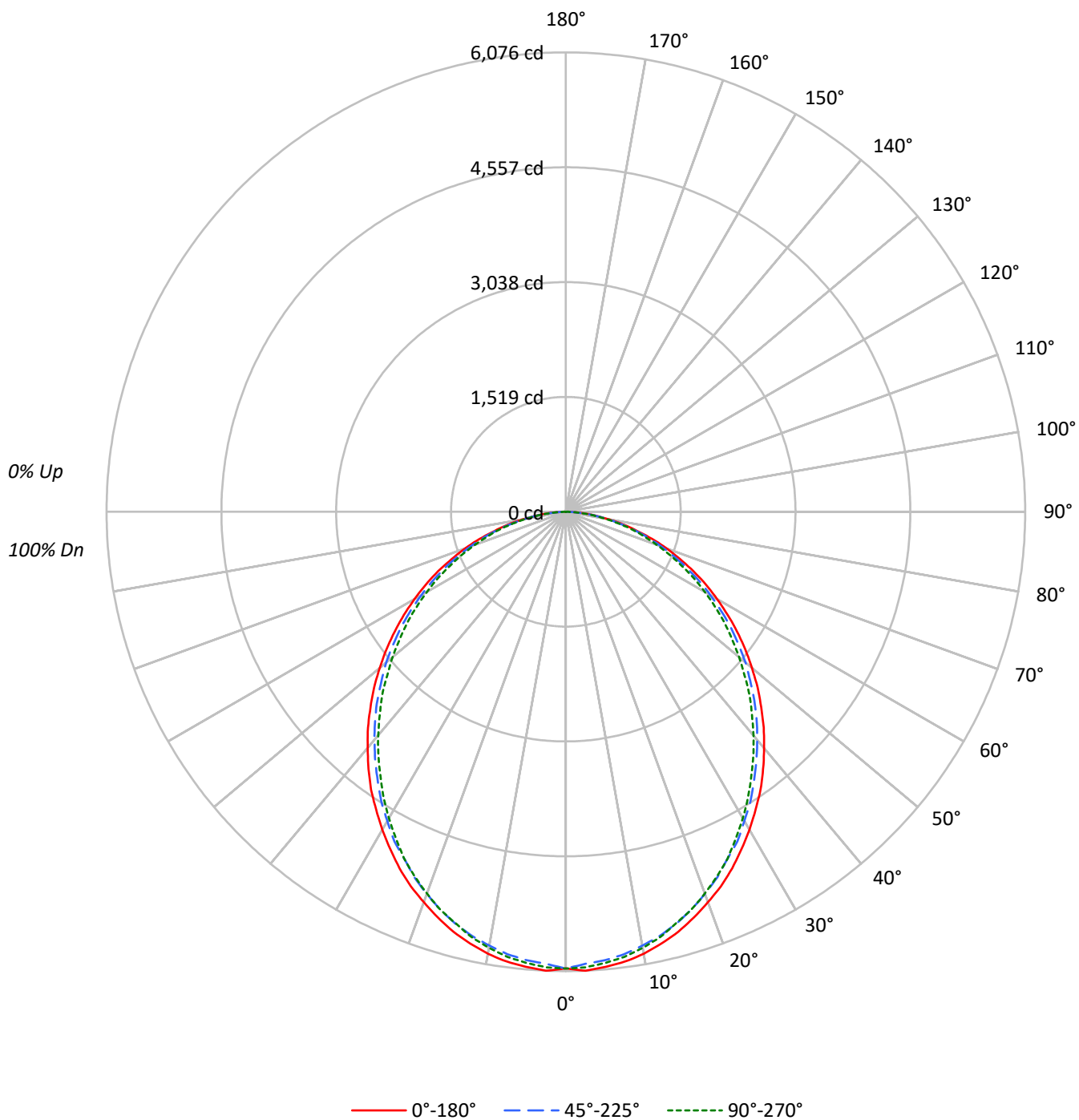
Lumens per Lamp: N/A
Luminaire Lumens: 15370.7 lumens
Efficiency: N/A
Efficacy: 101.3 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular (W 3.92' x L: 3.92' x H: 0')
CIE Type: Direct

Input Watts (W): 151.7
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9789
Total Harmonic Distortion (THDi): 0.074
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			0
RW	70	50	30	10	70	50	30	10	50	30	10		50	30	10		50	30	10	0
RCR																				
0	119	119	119	119	116	116	116	116	111	111	111		106	106	106		102	102	102	100
1	109	104	100	96	106	102	98	95	98	95	92		94	91	89		90	88	86	84
2	99	91	85	79	97	89	83	78	86	81	76		83	78	74		80	76	73	71
3	91	80	72	66	88	79	71	65	76	69	64		73	68	63		71	66	62	60
4	83	71	63	56	81	70	62	56	68	61	55		65	59	54		63	58	54	51
5	77	64	55	49	75	63	55	48	61	53	48		59	52	47		57	51	47	45
6	71	58	49	43	69	57	48	42	55	48	42		53	47	42		52	46	41	39
7	66	52	44	38	64	52	43	38	50	43	37		49	42	37		47	41	37	35
8	61	48	40	34	60	47	39	34	46	39	33		45	38	33		44	38	33	31
9	57	44	36	30	56	43	36	30	42	35	30		41	35	30		40	34	30	28
10	54	41	33	28	53	40	33	28	39	32	27		38	32	27		37	32	27	26

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4239	4239	4239
5°	4255	4194	4219
10°	4230	4152	4172
15°	4178	4097	4094
20°	4103	4017	4013
25°	4030	3918	3918
30°	3935	3827	3794
35°	3847	3717	3662
40°	3736	3607	3538
45°	3626	3499	3413
50°	3507	3386	3266
55°	3383	3255	3134
60°	3244	3098	2984
65°	3096	2942	2807
70°	2908	2753	2622
75°	2645	2535	2473
80°	2349	2277	2159
85°	1915	1826	1638

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3626 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	568.6	3.7
10°-20°	1599.8	10.4
20°-30°	2351.1	15.3
30°-40°	2730.7	17.8
40°-50°	2727.3	17.7
50°-60°	2378.1	15.5
60°-70°	1757.9	11.4
70°-80°	994.6	6.5
80°-90°	262.5	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°	4519.6	29.4
0°-40°	7250.2	47.2
0°-60°	12355.7	80.4
0°-90°	15370.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	15370.7	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	6041	6041	6041	6041	6041	
5°	6041	6018	5954	6001	5990	573
15°	5751	5716	5641	5664	5635	1620
25°	5205	5159	5060	5071	5060	2395
35°	4491	4433	4340	4304	4275	2804
45°	3654	3614	3526	3462	3439	2820
55°	2766	2730	2661	2591	2562	2472
65°	1865	1830	1772	1720	1691	1844
75°	976	965	935	900	912	1042
85°	238	232	227	209	203	280
90°	0	0	0	0	0	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	6041.3	6041.3	6041.3	6041.3	6041.3
2.5°	6076.3	6047.4	5983.3	6041.3	6030.2
5°	6041.3	6018.4	5954.3	6000.6	5989.5
7.5°	6000.6	5966.1	5902.0	5948.8	5937.0
10°	5937.0	5896.4	5826.8	5873.0	5855.7
12.5°	5849.5	5815.0	5745.4	5774.3	5762.7
15°	5750.9	5716.5	5640.6	5664.1	5635.1
17.5°	5629.0	5594.5	5518.6	5547.6	5518.6
20°	5495.2	5460.7	5379.3	5396.6	5373.8
22.5°	5362.0	5309.7	5233.8	5233.8	5222.2
25°	5204.9	5158.6	5060.0	5071.1	5060.0
27.5°	5030.4	4989.8	4914.6	4897.3	4868.4
30°	4856.6	4809.8	4722.9	4705.7	4682.2
32.5°	4670.6	4636.1	4542.9	4507.9	4484.4
35°	4490.6	4432.7	4339.5	4304.5	4275.4
37.5°	4287.2	4234.8	4141.7	4101.1	4072.0
40°	4078.2	4031.4	3938.3	3886.6	3863.1
42.5°	3874.8	3828.0	3735.6	3677.0	3642.5
45°	3654.2	3613.6	3526.1	3462.5	3439.1
47.5°	3439.1	3398.4	3305.4	3241.3	3206.8
50°	3212.3	3183.4	3102.0	3020.6	2991.6
52.5°	2991.6	2950.9	2875.7	2811.6	2771.1
55°	2765.5	2730.4	2660.7	2591.1	2562.1
57.5°	2538.6	2509.7	2433.9	2364.3	2340.8
60°	2311.8	2289.1	2207.7	2143.6	2126.3
62.5°	2091.2	2050.5	1992.5	1934.7	1911.3
65°	1865.0	1829.8	1772.0	1719.5	1690.6
67.5°	1632.7	1603.1	1551.3	1510.6	1487.2
70°	1417.5	1394.1	1341.8	1301.1	1278.2
72.5°	1196.9	1173.4	1144.5	1103.9	1086.6
75°	975.7	964.6	935.0	900.5	912.2
77.5°	778.4	755.0	743.3	726.1	708.8
80°	581.2	575.0	563.4	546.1	534.3
82.5°	395.0	395.0	389.5	366.1	366.1
85°	237.9	232.3	226.8	208.9	203.4
87.5°	104.8	93.0	81.4	64.1	57.9
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	16.30	17.91	16.67	18.23	18.54	15.86	17.47	16.22	17.78	18.10
	3H	18.05	19.51	18.43	19.83	20.19	17.56	19.01	17.94	19.34	19.70
	4H	18.70	20.07	19.10	20.41	20.79	18.20	19.57	18.60	19.92	20.30
	6H	19.17	20.43	19.58	20.80	21.19	18.66	19.93	19.08	20.30	20.69
	8H	19.31	20.52	19.73	20.91	21.31	18.81	20.02	19.23	20.41	20.81
	12H	19.40	20.56	19.83	20.94	21.37	18.89	20.05	19.32	20.43	20.86
4H	2H	16.86	18.23	17.26	18.58	18.95	16.51	17.88	16.91	18.23	18.60
	3H	18.84	19.98	19.25	20.38	20.78	18.43	19.58	18.84	19.97	20.37
	4H	19.61	20.65	20.04	21.06	21.50	19.19	20.22	19.62	20.64	21.07
	6H	20.21	21.11	20.66	21.55	22.01	19.78	20.68	20.23	21.12	21.58
	8H	20.40	21.25	20.86	21.69	22.15	19.96	20.81	20.42	21.25	21.72
	12H	20.53	21.29	21.01	21.77	22.24	20.08	20.84	20.56	21.31	21.78
8H	4H	19.89	20.73	20.35	21.18	21.64	19.51	20.36	19.97	20.80	21.27
	6H	20.60	21.30	21.09	21.79	22.27	20.22	20.92	20.71	21.41	21.89
	8H	20.86	21.49	21.37	22.00	22.48	20.47	21.10	20.98	21.61	22.09
	12H	21.06	21.62	21.57	22.11	22.67	20.65	21.20	21.15	21.69	22.26
12H	4H	19.91	20.67	20.39	21.15	21.62	19.55	20.31	20.03	20.78	21.25
	6H	20.65	21.28	21.16	21.78	22.27	20.28	20.91	20.79	21.42	21.90
	8H	20.96	21.52	21.47	22.01	22.57	20.58	21.14	21.09	21.63	22.19