

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: P931192

Luminaire Tested: DFN2DS-SQ4F0-140DS830-RLL

Issue Date: 11/20/2024

Test Information

Test Method: LM-79-2019
Report Number: P931192
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P333882)
Test Lab: INNOVATION CENTER
Issue Date: 11/20/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DS-SQ4F0-140DS830-RLL
Description: 4 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

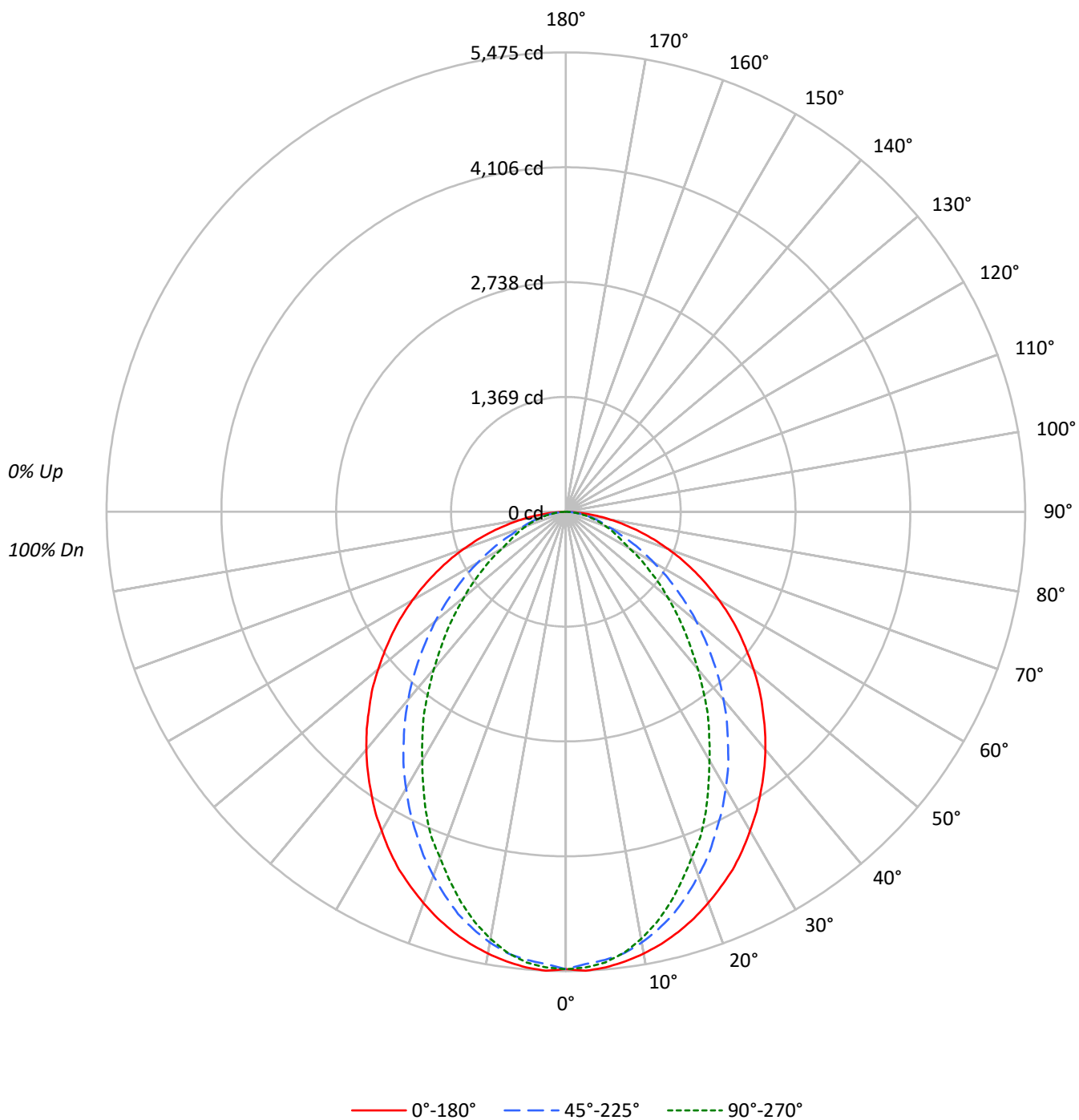
Lumens per Lamp: N/A
Luminaire Lumens: 11209.8 lumens
Efficiency: N/A
Efficacy: 73.9 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular (W 3.92' x L: 3.92' x H: 0')
CIE Type: Direct

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
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	110	106	102	98	107	103	100	97	99	96	94		95	93	91		92
2	101	94	87	82	98	92	86	81	88	83	79		85	81	78		82
3	93	83	76	70	90	82	75	69	79	73	68		76	71	67		74
4	86	75	66	60	83	73	66	60	71	64	59		69	63	58		66
5	79	67	59	53	77	66	58	52	64	57	52		62	56	51		60
6	74	61	53	47	72	60	52	46	58	51	46		57	50	46		55
7	68	56	47	42	67	55	47	42	53	46	41		52	46	41		51
8	64	51	43	38	62	51	43	37	49	42	37		48	42	37		47
9	60	47	39	34	59	47	39	34	46	39	34		44	38	34		44
10	56	44	36	31	55	43	36	31	42	36	31		41	35	31		41

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3825	3825	3825
5°	3839	3776	3797
10°	3810	3715	3683
15°	3766	3605	3501
20°	3705	3447	3274
25°	3643	3269	3055
30°	3557	3085	2773
35°	3473	2886	2527
40°	3389	2679	2241
45°	3289	2448	1982
50°	3188	2213	1729
55°	3083	1961	1485
60°	2963	1696	1232
65°	2826	1425	1122
70°	2661	1173	1032
75°	2460	1070	963
80°	2172	956	878
85°	1707	754	754

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 3289 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	510.8	4.6
10°-20°	1402.3	12.5
20°-30°	1968.8	17.6
30°-40°	2146.2	19.1
40°-50°	1972.6	17.6
50°-60°	1549.1	13.8
60°-70°	1008.3	9.0
70°-80°	519.1	4.6
80°-90°	132.5	1.2
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°	3882.0	34.6
0°-40°	6028.2	53.8
0°-60°	9549.9	85.2
0°-90°	11209.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	11209.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	5451	5451	5451	5451	5451	
5°	5451	5426	5362	5406	5391	517
15°	5184	5130	4962	4869	4820	1461
25°	4706	4548	4222	4020	3946	2164
35°	4055	3803	3369	3058	2950	2538
45°	3315	2984	2466	2116	1998	2560
55°	2520	2136	1603	1307	1214	2252
65°	1702	1302	858	691	676	1687
75°	907	562	395	360	355	960
85°	212	108	94	94	94	254
90°	0	0	0	0	0	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	5450.6	5450.6	5450.6	5450.6	5450.6
2.5°	5475.2	5450.6	5396.2	5445.9	5435.9
5°	5450.6	5426.0	5361.6	5406.1	5391.4
7.5°	5406.1	5376.7	5307.7	5327.1	5302.5
10°	5347.0	5312.4	5214.1	5198.8	5169.5
12.5°	5273.1	5228.7	5095.2	5065.9	5011.5
15°	5184.2	5129.8	4962.3	4868.6	4819.5
17.5°	5080.6	5001.5	4794.3	4686.0	4606.9
20°	4962.3	4863.4	4616.9	4493.9	4385.1
22.5°	4834.1	4720.6	4434.3	4266.8	4193.0
25°	4705.9	4547.8	4222.3	4020.3	3945.9
27.5°	4553.1	4385.1	4025.0	3793.2	3679.6
30°	4390.3	4202.5	3807.8	3556.6	3423.1
32.5°	4232.2	4005.1	3601.1	3304.9	3181.4
35°	4054.8	3803.1	3369.3	3058.4	2949.5
37.5°	3882.2	3610.5	3152.0	2811.4	2688.4
40°	3699.5	3403.8	2924.9	2574.9	2446.7
42.5°	3512.2	3196.6	2698.4	2333.1	2210.0
45°	3314.8	2984.1	2466.5	2115.8	1997.6
47.5°	3127.4	2777.4	2244.6	1894.0	1785.7
50°	2920.2	2570.2	2027.4	1686.7	1583.6
52.5°	2717.7	2347.7	1820.1	1494.7	1400.9
55°	2520.4	2135.7	1603.0	1307.3	1213.6
57.5°	2318.4	1923.8	1410.9	1134.6	1055.6
60°	2111.1	1716.5	1208.4	957.2	878.1
62.5°	1909.2	1514.5	1035.7	799.1	759.9
65°	1701.9	1302.0	858.3	690.8	675.6
67.5°	1504.6	1104.8	690.8	606.6	591.9
70°	1297.3	912.7	572.0	522.8	502.9
72.5°	1100.1	734.8	478.3	439.1	429.2
75°	907.4	562.1	394.6	360.0	355.3
77.5°	715.4	399.3	310.9	291.0	281.0
80°	537.5	286.3	236.5	217.2	217.2
82.5°	374.7	192.5	162.8	152.8	152.8
85°	212.0	108.3	93.6	93.6	93.6
87.5°	79.0	39.3	39.3	34.6	34.6
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	15.90	17.42	16.26	17.73	18.05	11.86	13.38	12.22	13.69	14.01
	3H	17.66	19.03	18.04	19.35	19.72	13.12	14.49	13.50	14.81	15.18
	4H	18.33	19.61	18.73	19.96	20.33	13.62	14.90	14.02	15.25	15.63
	6H	18.82	20.00	19.23	20.37	20.76	14.00	15.19	14.42	15.55	15.95
	8H	18.98	20.11	19.41	20.50	20.90	14.13	15.25	14.55	15.64	16.05
	12H	19.08	20.16	19.51	20.54	20.97	14.21	15.29	14.64	15.67	16.10
4H	2H	16.00	17.28	16.40	17.63	18.01	12.55	13.83	12.95	14.18	14.56
	3H	17.93	19.00	18.34	19.40	19.80	13.99	15.06	14.41	15.46	15.86
	4H	18.68	19.64	19.11	20.05	20.49	14.59	15.55	15.03	15.97	16.40
	6H	19.27	20.11	19.73	20.55	21.01	15.08	15.91	15.54	16.36	16.82
	8H	19.49	20.27	19.95	20.71	21.18	15.24	16.02	15.71	16.47	16.93
	12H	19.64	20.34	20.12	20.81	21.29	15.36	16.06	15.84	16.53	17.01
8H	4H	18.71	19.48	19.17	19.93	20.39	14.95	15.73	15.41	16.17	16.64
	6H	19.34	19.99	19.84	20.48	20.95	15.53	16.18	16.03	16.67	17.15
	8H	19.59	20.17	20.11	20.68	21.17	15.76	16.33	16.27	16.84	17.33
	12H	19.80	20.31	20.31	20.80	21.36	15.93	16.44	16.44	16.94	17.50
12H	4H	18.69	19.39	19.17	19.86	20.33	14.99	15.69	15.47	16.16	16.63
	6H	19.32	19.90	19.84	20.41	20.90	15.60	16.18	16.11	16.68	17.17
	8H	19.61	20.12	20.12	20.61	21.18	15.87	16.38	16.38	16.87	17.44