

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: P931211

Luminaire Tested: DFN2DS-SQ4F0-160DS835-FLL

Issue Date: 11/20/2024

Test Information

Test Method: LM-79-2019
Report Number: P931211
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-SQ4F0-160DS835-FLL
Description: 4 foot, Square Define Geo, with Direct Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

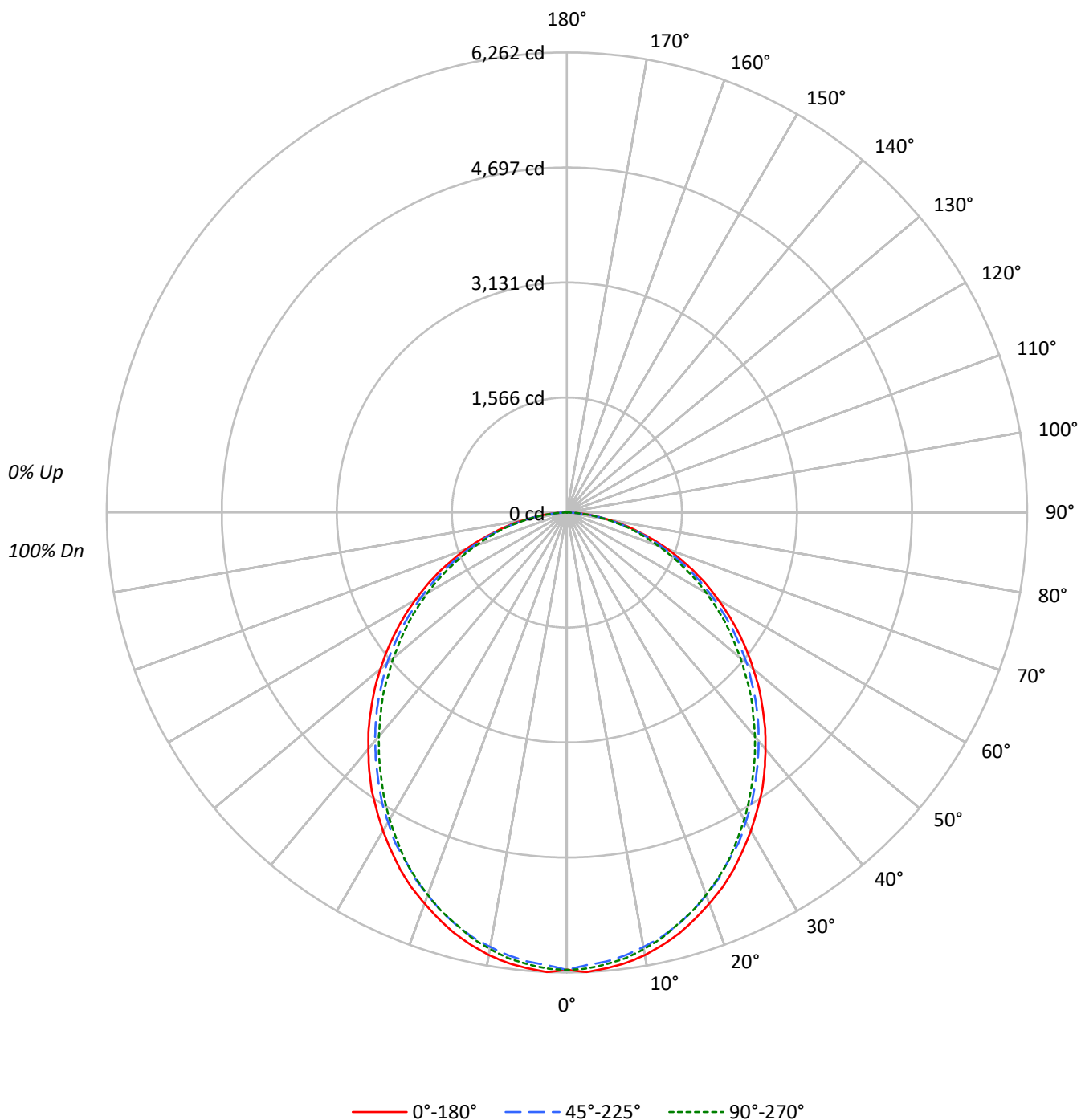
Lumens per Lamp: N/A
Luminaire Lumens: 15840.0 lumens
Efficiency: N/A
Efficacy: 90.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular (W 3.92' x L: 3.92' x H: 0')
CIE Type: Direct

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

TEST NUMBER: P931211

CATALOG NUMBER: DFN2DS-SQ4F0-160DS835-FLL

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°	4368	4368	4368
5°	4385	4322	4348
10°	4359	4278	4300
15°	4305	4223	4218
20°	4229	4139	4135
25°	4153	4037	4037
30°	4055	3943	3910
35°	3964	3831	3774
40°	3850	3718	3647
45°	3737	3606	3517
50°	3614	3490	3365
55°	3486	3354	3230
60°	3343	3193	3075
65°	3191	3032	2893
70°	2997	2837	2703
75°	2726	2612	2548
80°	2420	2346	2225
85°	1974	1881	1687

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3737 cd/sqm

TEST NUMBER: P931211

CATALOG NUMBER: DFN2DS-SQ4F0-160DS835-FLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	586.0	3.7
10°-20°	1648.7	10.4
20°-30°	2422.9	15.3
30°-40°	2814.1	17.8
40°-50°	2810.6	17.7
50°-60°	2450.7	15.5
60°-70°	1811.6	11.4
70°-80°	1025.0	6.5
80°-90°	270.5	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°	4657.5	29.4
0°-40°	7471.6	47.2
0°-60°	12732.9	80.4
0°-90°	15840.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	15840.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	6226	6226	6226	6226	6226	
5°	6226	6202	6136	6184	6172	591
15°	5926	5891	5813	5837	5807	1669
25°	5364	5316	5214	5226	5214	2468
35°	4628	4568	4472	4436	4406	2890
45°	3766	3724	3634	3568	3544	2906
55°	2850	2814	2742	2670	2640	2548
65°	1922	1886	1826	1772	1742	1900
75°	1005	994	964	928	940	1073
85°	245	239	234	215	210	288
90°	0	0	0	0	0	

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CATALOG NUMBER: DFN2DS-SQ4F0-160DS835-FLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	6225.7	6225.7	6225.7	6225.7	6225.7
2.5°	6261.9	6232.0	6166.0	6225.7	6214.2
5°	6225.7	6202.2	6136.1	6183.8	6172.3
7.5°	6183.8	6148.2	6082.1	6130.4	6118.3
10°	6118.3	6076.4	6004.7	6052.3	6034.5
12.5°	6028.2	5992.6	5920.8	5950.7	5938.6
15°	5926.5	5891.0	5812.8	5837.0	5807.1
17.5°	5800.8	5765.2	5687.1	5716.9	5687.1
20°	5662.9	5627.4	5543.5	5561.3	5537.8
22.5°	5525.8	5471.8	5393.6	5393.6	5381.6
25°	5363.8	5316.2	5214.5	5226.0	5214.5
27.5°	5184.0	5142.1	5064.6	5046.9	5017.0
30°	5004.9	4956.7	4867.1	4849.3	4825.2
32.5°	4813.1	4777.6	4681.6	4645.4	4621.3
35°	4627.7	4568.0	4472.0	4435.8	4406.0
37.5°	4418.1	4364.1	4268.2	4226.2	4196.4
40°	4202.7	4154.5	4058.6	4005.2	3981.1
42.5°	3993.2	3944.9	3849.6	3789.3	3753.7
45°	3765.8	3723.8	3633.7	3568.2	3544.1
47.5°	3544.1	3502.2	3406.3	3340.2	3304.7
50°	3310.4	3280.5	3196.7	3112.8	3083.0
52.5°	3083.0	3041.1	2963.6	2897.5	2855.6
55°	2849.9	2813.7	2741.9	2670.1	2640.3
57.5°	2616.2	2586.3	2508.2	2436.4	2412.3
60°	2382.4	2358.9	2275.1	2209.0	2191.2
62.5°	2155.0	2113.1	2053.4	1993.7	1969.6
65°	1921.9	1885.7	1826.0	1772.1	1742.2
67.5°	1682.5	1652.0	1598.7	1556.7	1532.6
70°	1460.8	1436.7	1382.7	1340.8	1317.3
72.5°	1233.4	1209.3	1179.5	1137.5	1119.8
75°	1005.4	994.0	963.5	927.9	940.0
77.5°	802.2	778.1	766.0	748.2	730.4
80°	598.9	592.6	580.5	562.7	550.7
82.5°	407.1	407.1	401.4	377.3	377.3
85°	245.2	239.4	233.7	215.3	209.6
87.5°	108.0	95.9	83.8	66.1	59.7
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	16.41	18.02	16.77	18.33	18.64	15.96	17.57	16.33	17.89	18.20
	3H	18.16	19.61	18.53	19.94	20.30	17.66	19.12	18.04	19.45	19.81
	4H	18.80	20.17	19.20	20.52	20.89	18.31	19.68	18.71	20.02	20.40
	6H	19.27	20.54	19.68	20.90	21.29	18.77	20.04	19.18	20.40	20.79
	8H	19.41	20.62	19.84	21.01	21.41	18.91	20.12	19.34	20.51	20.91
	12H	19.50	20.66	19.93	21.05	21.47	18.99	20.15	19.42	20.53	20.96
4H	2H	16.97	18.33	17.36	18.68	19.06	16.61	17.98	17.01	18.33	18.71
	3H	18.94	20.09	19.35	20.48	20.88	18.53	19.68	18.94	20.08	20.48
	4H	19.72	20.75	20.15	21.17	21.60	19.29	20.33	19.72	20.74	21.18
	6H	20.31	21.22	20.77	21.66	22.12	19.88	20.79	20.34	21.23	21.68
	8H	20.50	21.35	20.96	21.79	22.26	20.07	20.91	20.53	21.35	21.82
	12H	20.64	21.40	21.12	21.87	22.34	20.18	20.94	20.66	21.42	21.89
8H	4H	19.99	20.84	20.45	21.28	21.74	19.62	20.46	20.08	20.91	21.37
	6H	20.70	21.41	21.20	21.90	22.37	20.32	21.03	20.82	21.51	21.99
	8H	20.96	21.59	21.47	22.10	22.59	20.57	21.20	21.08	21.71	22.20
	12H	21.16	21.72	21.67	22.21	22.77	20.75	21.31	21.26	21.80	22.36
12H	4H	20.02	20.78	20.50	21.25	21.72	19.65	20.41	20.13	20.89	21.36
	6H	20.75	21.38	21.26	21.89	22.37	20.38	21.01	20.89	21.52	22.01
	8H	21.06	21.62	21.57	22.11	22.67	20.69	21.24	21.19	21.73	22.30