

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: P931193

Luminaire Tested: DFN2DS-SQ4F0-140DS835-FLL

Issue Date: 11/20/2024

Test Information

Test Method: LM-79-2019
Report Number: P931193
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-SQ4F0-140DS835-FLL
Description: 4 foot, Square Define Geo, with Direct Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

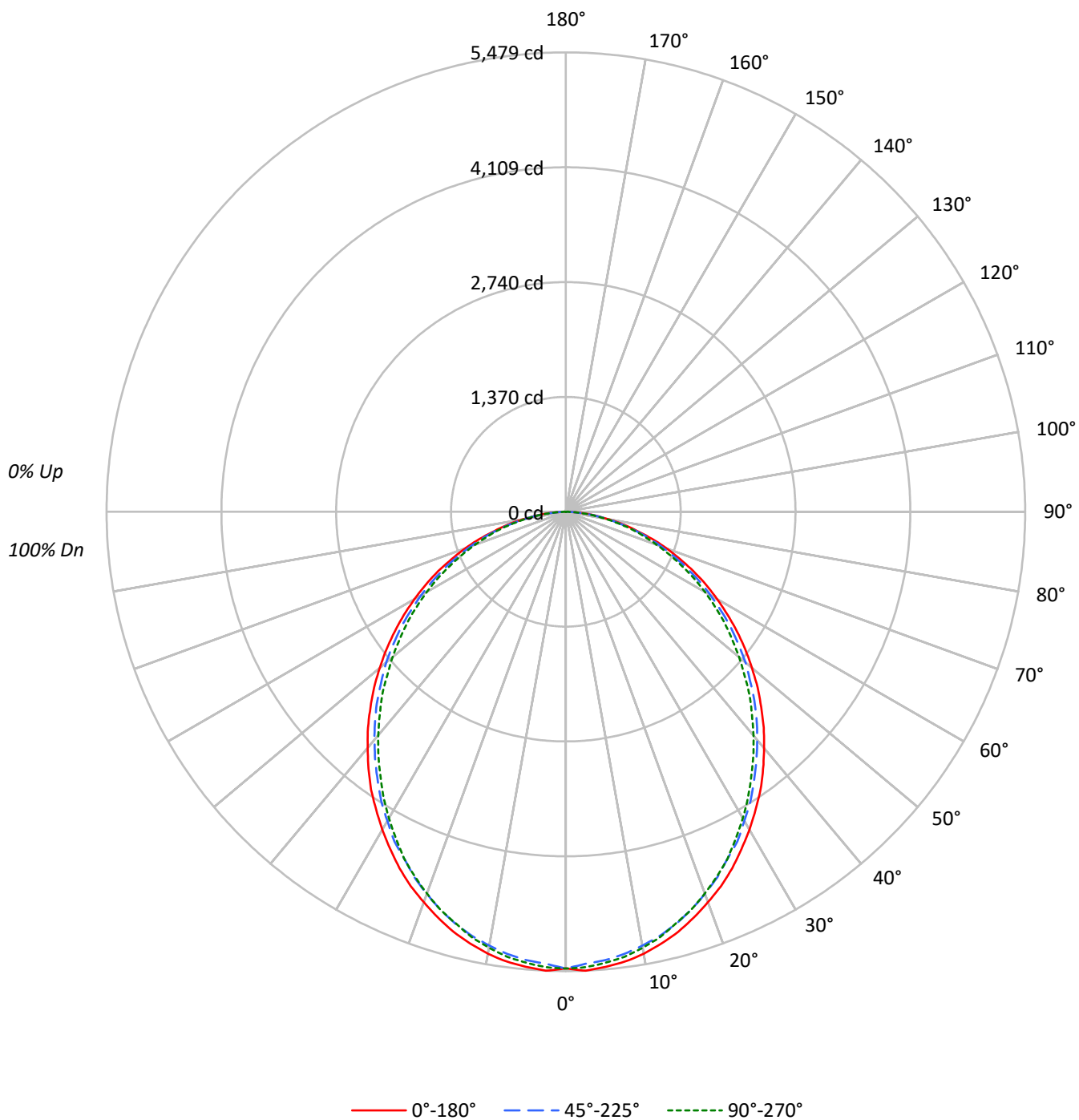
Lumens per Lamp: N/A
Luminaire Lumens: 13860.0 lumens
Efficiency: N/A
Efficacy: 91.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular (W 3.92' x L: 3.92' x H: 0')
CIE Type: Direct

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

TEST NUMBER: P931193

CATALOG NUMBER: DFN2DS-SQ4F0-140DS835-FLL

Luminous Intensity Polar Plot



TEST NUMBER: P931193

CATALOG NUMBER: DFN2DS-SQ4F0-140DS835-FLL

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°	3822	3822	3822
5°	3837	3782	3804
10°	3814	3744	3762
15°	3767	3695	3691
20°	3700	3622	3618
25°	3634	3533	3533
30°	3548	3451	3421
35°	3469	3352	3302
40°	3368	3253	3191
45°	3270	3155	3077
50°	3162	3053	2945
55°	3051	2935	2826
60°	2925	2794	2691
65°	2792	2653	2531
70°	2622	2482	2365
75°	2385	2286	2230
80°	2118	2053	1947
85°	1727	1646	1477

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 3270 cd/sqm

TEST NUMBER: P931193

CATALOG NUMBER: DFN2DS-SQ4F0-140DS835-FLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	512.7	3.7
10°-20°	1442.6	10.4
20°-30°	2120.0	15.3
30°-40°	2462.3	17.8
40°-50°	2459.3	17.7
50°-60°	2144.4	15.5
60°-70°	1585.2	11.4
70°-80°	896.9	6.5
80°-90°	236.7	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°	4075.3	29.4
0°-40°	6537.6	47.2
0°-60°	11141.3	80.4
0°-90°	13860.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	13860.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	5448	5448	5448	5448	5448	
5°	5448	5427	5369	5411	5401	517
15°	5186	5155	5086	5107	5081	1461
25°	4693	4652	4563	4573	4563	2160
35°	4049	3997	3913	3881	3855	2529
45°	3295	3258	3180	3122	3101	2543
55°	2494	2462	2399	2336	2310	2229
65°	1682	1650	1598	1550	1524	1663
75°	880	870	843	812	822	939
85°	214	210	204	188	183	252
90°	0	0	0	0	0	

TEST NUMBER: P931193

CATALOG NUMBER: DFN2DS-SQ4F0-140DS835-FLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	5447.5	5447.5	5447.5	5447.5	5447.5
2.5°	5479.1	5453.0	5395.2	5447.5	5437.5
5°	5447.5	5426.9	5369.1	5410.8	5400.8
7.5°	5410.8	5379.7	5321.9	5364.1	5353.5
10°	5353.5	5316.9	5254.1	5295.8	5280.2
12.5°	5274.6	5243.5	5180.7	5206.8	5196.3
15°	5185.7	5154.6	5086.2	5107.4	5081.2
17.5°	5075.7	5044.6	4976.2	5002.3	4976.2
20°	4955.1	4924.0	4850.6	4866.2	4845.6
22.5°	4835.0	4787.8	4719.4	4719.4	4708.9
25°	4693.3	4651.6	4562.7	4572.7	4562.7
27.5°	4536.0	4499.4	4431.6	4416.0	4389.9
30°	4379.3	4337.1	4258.7	4243.2	4222.0
32.5°	4211.5	4180.4	4096.4	4064.8	4043.6
35°	4049.2	3997.0	3913.0	3881.4	3855.2
37.5°	3865.8	3818.6	3734.6	3698.0	3671.8
40°	3677.4	3635.2	3551.2	3504.6	3483.4
42.5°	3494.0	3451.8	3368.4	3315.6	3284.5
45°	3295.0	3258.4	3179.5	3122.2	3101.1
47.5°	3101.1	3064.4	2980.5	2922.7	2891.6
50°	2896.6	2870.5	2797.1	2723.7	2697.6
52.5°	2697.6	2660.9	2593.1	2535.3	2498.7
55°	2493.7	2462.0	2399.2	2336.4	2310.3
57.5°	2289.1	2263.0	2194.7	2131.9	2110.7
60°	2084.6	2064.1	1990.7	1932.9	1917.3
62.5°	1885.7	1849.0	1796.7	1744.5	1723.4
65°	1681.7	1650.0	1597.8	1550.5	1524.4
67.5°	1472.2	1445.5	1398.8	1362.1	1341.0
70°	1278.2	1257.1	1209.9	1173.2	1152.6
72.5°	1079.3	1058.1	1032.0	995.4	979.8
75°	879.8	869.8	843.1	812.0	822.5
77.5°	701.9	680.8	670.2	654.7	639.1
80°	524.1	518.5	508.0	492.4	481.8
82.5°	356.2	356.2	351.2	330.1	330.1
85°	214.5	209.5	204.5	188.4	183.4
87.5°	94.5	83.9	73.4	57.8	52.2
90°	0.0	0.0	0.0	0.0	0.0

TEST NUMBER: P931193

CATALOG NUMBER: DFN2DS-SQ4F0-140DS835-FLL

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	15.94	17.55	16.31	17.87	18.18	15.50	17.11	15.86	17.42	17.74
	3H	17.69	19.15	18.07	19.47	19.83	17.20	18.65	17.58	18.98	19.34
	4H	18.34	19.71	18.74	20.05	20.43	17.84	19.21	18.24	19.56	19.94
	6H	18.81	20.08	19.22	20.44	20.83	18.31	19.57	18.72	19.94	20.33
	8H	18.95	20.16	19.37	20.55	20.95	18.45	19.66	18.87	20.05	20.45
	12H	19.04	20.20	19.47	20.58	21.01	18.53	19.69	18.96	20.07	20.50
4H	2H	16.50	17.87	16.90	18.22	18.59	16.15	17.52	16.55	17.87	18.24
	3H	18.48	19.62	18.89	20.02	20.42	18.07	19.22	18.48	19.61	20.01
	4H	19.25	20.29	19.68	20.70	21.14	18.83	19.87	19.26	20.28	20.72
	6H	19.85	20.75	20.30	21.20	21.65	19.42	20.32	19.87	20.76	21.22
	8H	20.04	20.89	20.50	21.33	21.79	19.60	20.45	20.06	20.89	21.36
	12H	20.17	20.93	20.65	21.41	21.88	19.72	20.48	20.20	20.95	21.42
8H	4H	19.53	20.37	19.99	20.82	21.28	19.15	20.00	19.61	20.44	20.91
	6H	20.24	20.94	20.73	21.43	21.91	19.86	20.56	20.35	21.05	21.53
	8H	20.50	21.13	21.01	21.64	22.12	20.11	20.74	20.62	21.25	21.73
	12H	20.70	21.26	21.21	21.75	22.31	20.29	20.84	20.79	21.34	21.90
12H	4H	19.55	20.31	20.03	20.79	21.26	19.19	19.95	19.67	20.42	20.89
	6H	20.29	20.92	20.80	21.42	21.91	19.92	20.55	20.43	21.06	21.54
	8H	20.60	21.16	21.11	21.65	22.21	20.22	20.78	20.73	21.27	21.83