

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: P931218

Luminaire Tested: DFN2DS-SQ4F0-160DS927-RLL

Issue Date: 11/20/2024

Test Information

Test Method: LM-79-2019
Report Number: P931218
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-SQ4F0-160DS927-RLL
Description: 4 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

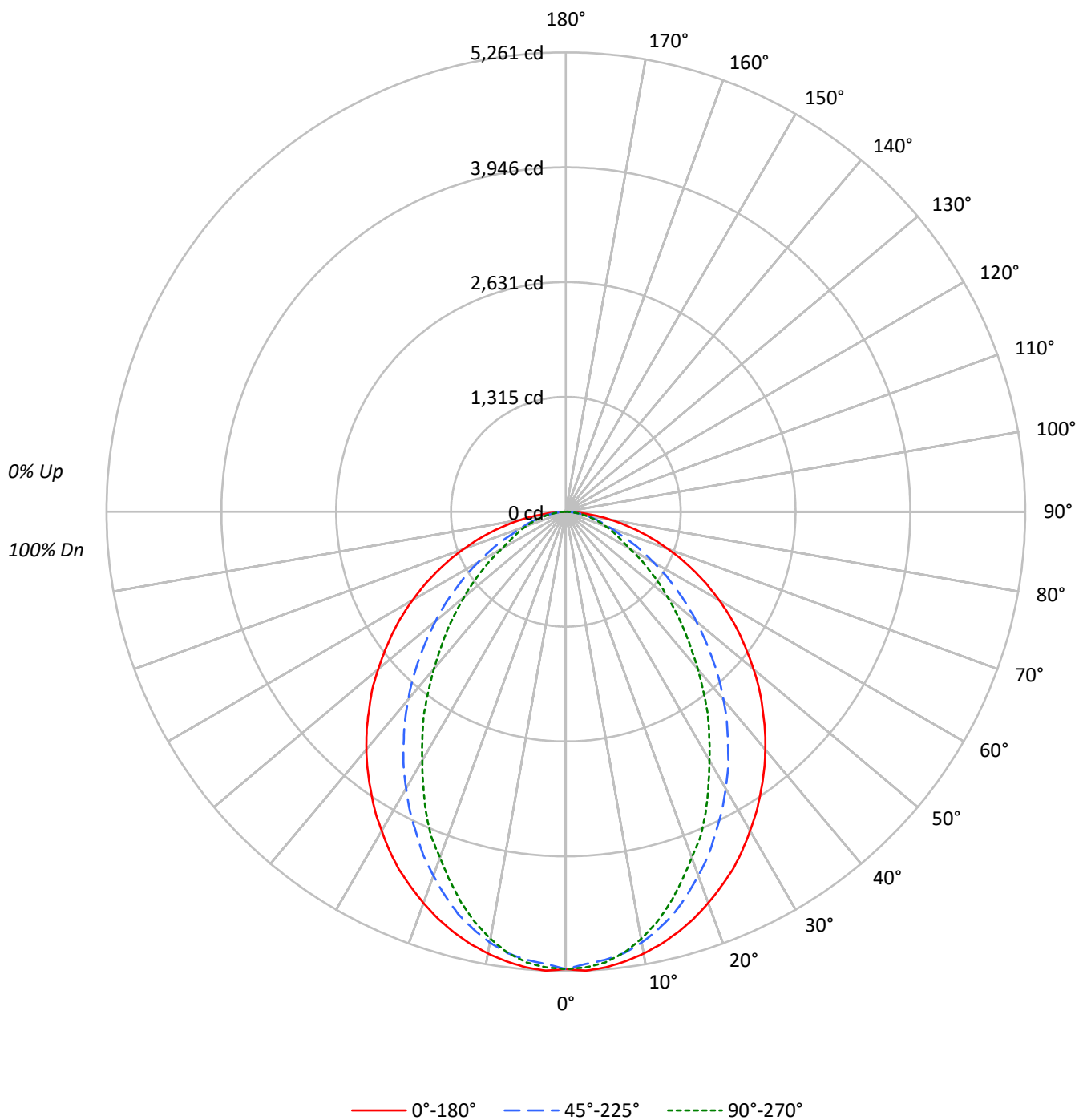
Lumens per Lamp: N/A
Luminaire Lumens: 10771.2 lumens
Efficiency: N/A
Efficacy: 61.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular (W 3.92' x L: 3.92' x H: 0')
CIE Type: Direct

Input Watts (W): 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	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°	3675	3675	3675
5°	3689	3629	3649
10°	3661	3570	3539
15°	3619	3464	3364
20°	3560	3313	3146
25°	3501	3141	2936
30°	3418	2964	2665
35°	3337	2773	2428
40°	3256	2574	2153
45°	3161	2352	1905
50°	3063	2127	1661
55°	2963	1884	1427
60°	2847	1629	1184
65°	2715	1369	1078
70°	2557	1128	992
75°	2364	1028	926
80°	2087	918	843
85°	1639	725	725

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3161 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	490.8	4.6
10°-20°	1347.5	12.5
20°-30°	1891.8	17.6
30°-40°	2062.2	19.1
40°-50°	1895.4	17.6
50°-60°	1488.5	13.8
60°-70°	968.9	9.0
70°-80°	498.7	4.6
80°-90°	127.3	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°	3730.1	34.6
0°-40°	5792.3	53.8
0°-60°	9176.3	85.2
0°-90°	10771.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	10771.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	5237	5237	5237	5237	5237	
5°	5237	5214	5152	5195	5180	497
15°	4981	4929	4768	4678	4631	1404
25°	4522	4370	4057	3863	3792	2080
35°	3896	3654	3238	2939	2834	2439
45°	3185	2867	2370	2033	1919	2460
55°	2422	2052	1540	1256	1166	2164
65°	1635	1251	825	664	649	1621
75°	872	540	379	346	341	922
85°	204	104	90	90	90	244
90°	0	0	0	0	0	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	5237.3	5237.3	5237.3	5237.3	5237.3
2.5°	5260.9	5237.3	5185.0	5232.8	5223.2
5°	5237.3	5213.7	5151.8	5194.6	5180.5
7.5°	5194.6	5166.4	5100.0	5118.6	5095.0
10°	5137.8	5104.6	5010.0	4995.5	4967.3
12.5°	5066.8	5024.1	4895.9	4867.7	4815.4
15°	4981.4	4929.1	4768.2	4678.1	4630.8
17.5°	4881.8	4805.9	4606.7	4502.6	4426.7
20°	4768.2	4673.1	4436.2	4318.1	4213.5
22.5°	4644.9	4535.8	4260.7	4099.9	4028.9
25°	4521.8	4369.9	4057.1	3863.0	3791.6
27.5°	4374.9	4213.5	3867.5	3644.8	3535.6
30°	4218.5	4038.0	3658.8	3417.5	3289.3
32.5°	4066.7	3848.4	3460.2	3175.6	3056.9
35°	3896.2	3654.3	3237.5	2938.7	2834.2
37.5°	3730.2	3469.3	3028.8	2701.4	2583.2
40°	3554.7	3270.6	2810.5	2474.0	2350.9
42.5°	3374.7	3071.5	2592.8	2241.8	2123.6
45°	3185.1	2867.4	2370.0	2033.1	1919.4
47.5°	3005.1	2668.7	2156.8	1819.9	1715.8
50°	2806.0	2469.5	1948.1	1620.7	1521.7
52.5°	2611.4	2255.9	1749.0	1436.2	1346.2
55°	2421.8	2052.2	1540.3	1256.1	1166.1
57.5°	2227.7	1848.5	1355.7	1090.2	1014.2
60°	2028.5	1649.4	1161.1	919.7	843.8
62.5°	1834.4	1455.3	995.1	767.8	730.1
65°	1635.3	1251.1	824.7	663.8	649.2
67.5°	1445.7	1061.5	663.8	582.8	568.7
70°	1246.6	877.0	549.6	502.4	483.3
72.5°	1057.0	706.0	459.6	421.9	412.3
75°	872.0	540.1	379.1	345.9	341.4
77.5°	687.4	383.6	298.7	279.6	270.1
80°	516.5	275.1	227.3	208.7	208.7
82.5°	360.0	185.1	156.4	146.8	146.8
85°	203.6	104.1	90.1	90.1	90.1
87.5°	76.0	37.7	37.7	33.2	33.2
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	15.76	17.28	16.12	17.59	17.91	11.72	13.24	12.08	13.55	13.87
	3H	17.52	18.89	17.90	19.21	19.58	12.98	14.35	13.36	14.68	15.04
	4H	18.19	19.47	18.59	19.82	20.20	13.48	14.76	13.88	15.11	15.49
	6H	18.68	19.86	19.09	20.23	20.62	13.86	15.05	14.28	15.41	15.81
	8H	18.84	19.97	19.27	20.36	20.76	13.99	15.12	14.42	15.51	15.91
	12H	18.95	20.02	19.38	20.41	20.84	14.07	15.15	14.50	15.53	15.96
4H	2H	15.86	17.14	16.26	17.49	17.87	12.41	13.69	12.81	14.04	14.42
	3H	17.79	18.86	18.20	19.26	19.66	13.86	14.92	14.27	15.32	15.72
	4H	18.54	19.50	18.98	19.92	20.35	14.46	15.41	14.89	15.83	16.27
	6H	19.14	19.97	19.59	20.41	20.87	14.94	15.78	15.40	16.22	16.68
	8H	19.35	20.13	19.81	20.57	21.04	15.11	15.88	15.57	16.33	16.79
	12H	19.50	20.20	19.99	20.68	21.15	15.22	15.92	15.70	16.40	16.87
8H	4H	18.57	19.34	19.03	19.79	20.26	14.81	15.59	15.27	16.03	16.50
	6H	19.21	19.85	19.70	20.34	20.82	15.40	16.04	15.89	16.53	17.01
	8H	19.46	20.03	19.97	20.54	21.03	15.62	16.19	16.13	16.70	17.19
	12H	19.66	20.17	20.17	20.66	21.23	15.80	16.31	16.31	16.80	17.36
12H	4H	18.55	19.25	19.03	19.72	20.20	14.85	15.55	15.33	16.03	16.50
	6H	19.19	19.76	19.70	20.27	20.76	15.46	16.04	15.97	16.55	17.03
	8H	19.47	19.98	19.98	20.47	21.04	15.73	16.24	16.24	16.73	17.30