

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: P931220

Luminaire Tested: DFN2DS-SQ4F0-160DS930-RLL

Issue Date: 11/20/2024

Test Information

Test Method: LM-79-2019
Report Number: P931220
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-SQ4F0-160DS930-RLL
Description: 4 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

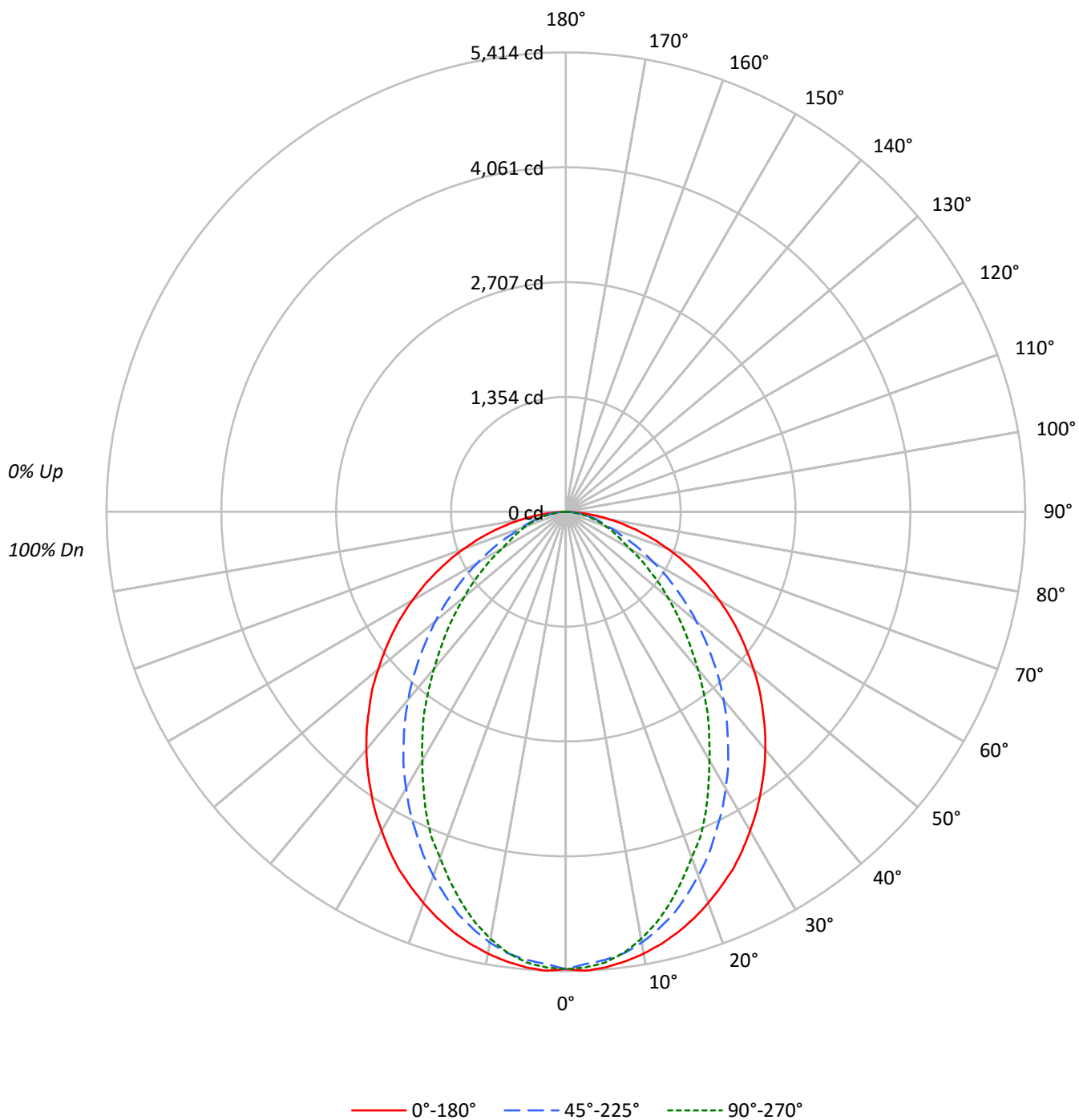
Lumens per Lamp: N/A
Luminaire Lumens: 11084.0 lumens
Efficiency: N/A
Efficacy: 63.5 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular (W 3.92' x L: 3.92' x H: 0')
CIE Type: Direct

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

TEST NUMBER: P931220

CATALOG NUMBER: DFN2DS-SQ4F0-160DS930-RLL

Luminous Intensity Polar Plot



TEST NUMBER: P931220

CATALOG NUMBER: DFN2DS-SQ4F0-160DS930-RLL

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°	3782	3782	3782
5°	3796	3734	3755
10°	3767	3673	3642
15°	3724	3564	3462
20°	3664	3409	3238
25°	3602	3232	3021
30°	3517	3051	2742
35°	3434	2854	2498
40°	3351	2649	2216
45°	3252	2420	1960
50°	3152	2188	1709
55°	3049	1939	1468
60°	2930	1677	1219
65°	2794	1409	1109
70°	2632	1160	1020
75°	2433	1058	952
80°	2148	945	868
85°	1687	746	746

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3252 cd/sqm

TEST NUMBER: P931220

CATALOG NUMBER: DFN2DS-SQ4F0-160DS930-RLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	505.1	4.6
10°-20°	1386.6	12.5
20°-30°	1946.7	17.6
30°-40°	2122.1	19.1
40°-50°	1950.4	17.6
50°-60°	1531.8	13.8
60°-70°	997.0	9.0
70°-80°	513.2	4.6
80°-90°	131.0	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°	3838.5	34.6
0°-40°	5960.5	53.8
0°-60°	9442.7	85.2
0°-90°	11084.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	11084.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	5389	5389	5389	5389	5389	
5°	5389	5365	5301	5345	5331	511
15°	5126	5072	4907	4814	4765	1444
25°	4653	4497	4175	3975	3902	2140
35°	4009	3760	3332	3024	2916	2509
45°	3278	2951	2439	2092	1975	2531
55°	2492	2112	1585	1293	1200	2227
65°	1683	1288	849	683	668	1668
75°	897	556	390	356	351	949
85°	210	107	93	93	93	251
90°	0	0	0	0	0	

TEST NUMBER: P931220

CATALOG NUMBER: DFN2DS-SQ4F0-160DS930-RLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	5389.4	5389.4	5389.4	5389.4	5389.4
2.5°	5413.7	5389.4	5335.6	5384.8	5374.9
5°	5389.4	5365.1	5301.4	5345.4	5330.9
7.5°	5345.4	5316.4	5248.1	5267.3	5243.0
10°	5287.0	5252.8	5155.5	5140.5	5111.5
12.5°	5214.0	5170.0	5038.1	5009.1	4955.3
15°	5126.0	5072.2	4906.6	4814.0	4765.3
17.5°	5023.6	4945.4	4740.5	4633.4	4555.3
20°	4906.6	4808.8	4565.1	4443.5	4335.9
22.5°	4779.8	4667.5	4384.5	4218.9	4145.9
25°	4653.1	4496.8	4174.9	3975.2	3901.7
27.5°	4502.0	4335.9	3979.8	3750.6	3638.3
30°	4341.0	4155.3	3765.1	3516.7	3384.8
32.5°	4184.8	3960.2	3560.7	3267.8	3145.7
35°	4009.3	3760.4	3331.5	3024.1	2916.5
37.5°	3838.6	3570.0	3116.7	2779.8	2658.2
40°	3658.0	3365.6	2892.1	2545.9	2419.2
42.5°	3472.7	3160.7	2668.1	2306.9	2185.3
45°	3277.6	2950.6	2438.8	2092.1	1975.2
47.5°	3092.4	2746.2	2219.4	1872.7	1765.6
50°	2887.5	2541.3	2004.7	1667.8	1565.9
52.5°	2687.2	2321.4	1799.8	1477.9	1385.3
55°	2492.1	2111.7	1585.0	1292.6	1200.0
57.5°	2292.4	1902.2	1395.1	1121.8	1043.7
60°	2087.5	1697.3	1194.8	946.5	868.3
62.5°	1887.7	1497.6	1024.0	790.1	751.3
65°	1682.8	1287.5	848.7	683.1	668.1
67.5°	1487.7	1092.3	683.1	599.8	585.3
70°	1282.8	902.4	565.6	517.0	497.3
72.5°	1087.7	726.5	472.9	434.2	424.3
75°	897.3	555.7	390.1	356.0	351.3
77.5°	707.3	394.8	307.3	287.7	277.9
80°	531.5	283.0	233.9	214.8	214.8
82.5°	370.5	190.5	161.0	151.1	151.1
85°	209.5	107.1	92.7	92.7	92.7
87.5°	78.2	38.8	38.8	34.1	34.1
90°	0.0	0.0	0.0	0.0	0.0

TEST NUMBER: P931220

CATALOG NUMBER: DFN2DS-SQ4F0-160DS930-RLL

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	15.86	17.38	16.22	17.69	18.01	11.82	13.34	12.18	13.65	13.97
	3H	17.62	18.99	18.00	19.31	19.68	13.08	14.45	13.46	14.77	15.14
	4H	18.29	19.57	18.69	19.92	20.30	13.58	14.86	13.98	15.21	15.59
	6H	18.78	19.96	19.19	20.33	20.72	13.96	15.15	14.38	15.51	15.91
	8H	18.94	20.07	19.37	20.46	20.86	14.09	15.22	14.52	15.61	16.01
	12H	19.05	20.12	19.48	20.51	20.93	14.17	15.25	14.60	15.63	16.06
4H	2H	15.96	17.24	16.36	17.59	17.97	12.51	13.79	12.91	14.14	14.52
	3H	17.89	18.96	18.30	19.36	19.76	13.96	15.02	14.37	15.42	15.82
	4H	18.64	19.60	19.08	20.01	20.45	14.55	15.51	14.99	15.93	16.37
	6H	19.23	20.07	19.69	20.51	20.97	15.04	15.87	15.50	16.32	16.78
	8H	19.45	20.23	19.91	20.67	21.14	15.20	15.98	15.67	16.43	16.89
	12H	19.60	20.30	20.08	20.78	21.25	15.32	16.02	15.80	16.50	16.97
8H	4H	18.67	19.44	19.13	19.89	20.36	14.91	15.69	15.37	16.13	16.60
	6H	19.30	19.95	19.80	20.44	20.92	15.50	16.14	15.99	16.63	17.11
	8H	19.55	20.13	20.07	20.64	21.13	15.72	16.29	16.23	16.80	17.29
	12H	19.76	20.27	20.27	20.76	21.33	15.90	16.41	16.41	16.90	17.46
12H	4H	18.65	19.35	19.13	19.82	20.30	14.95	15.65	15.43	16.12	16.60
	6H	19.29	19.86	19.80	20.37	20.86	15.56	16.14	16.07	16.65	17.13
	8H	19.57	20.08	20.08	20.57	21.14	15.83	16.34	16.34	16.83	17.40