

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: P931124

Luminaire Tested: DFN2DS-SQ4F0-090DS840-RLL

Issue Date: 11/20/2024

Test Information

Test Method: LM-79-2019
Report Number: P931124
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-SQ4F0-090DS840-RLL
Description: 4 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

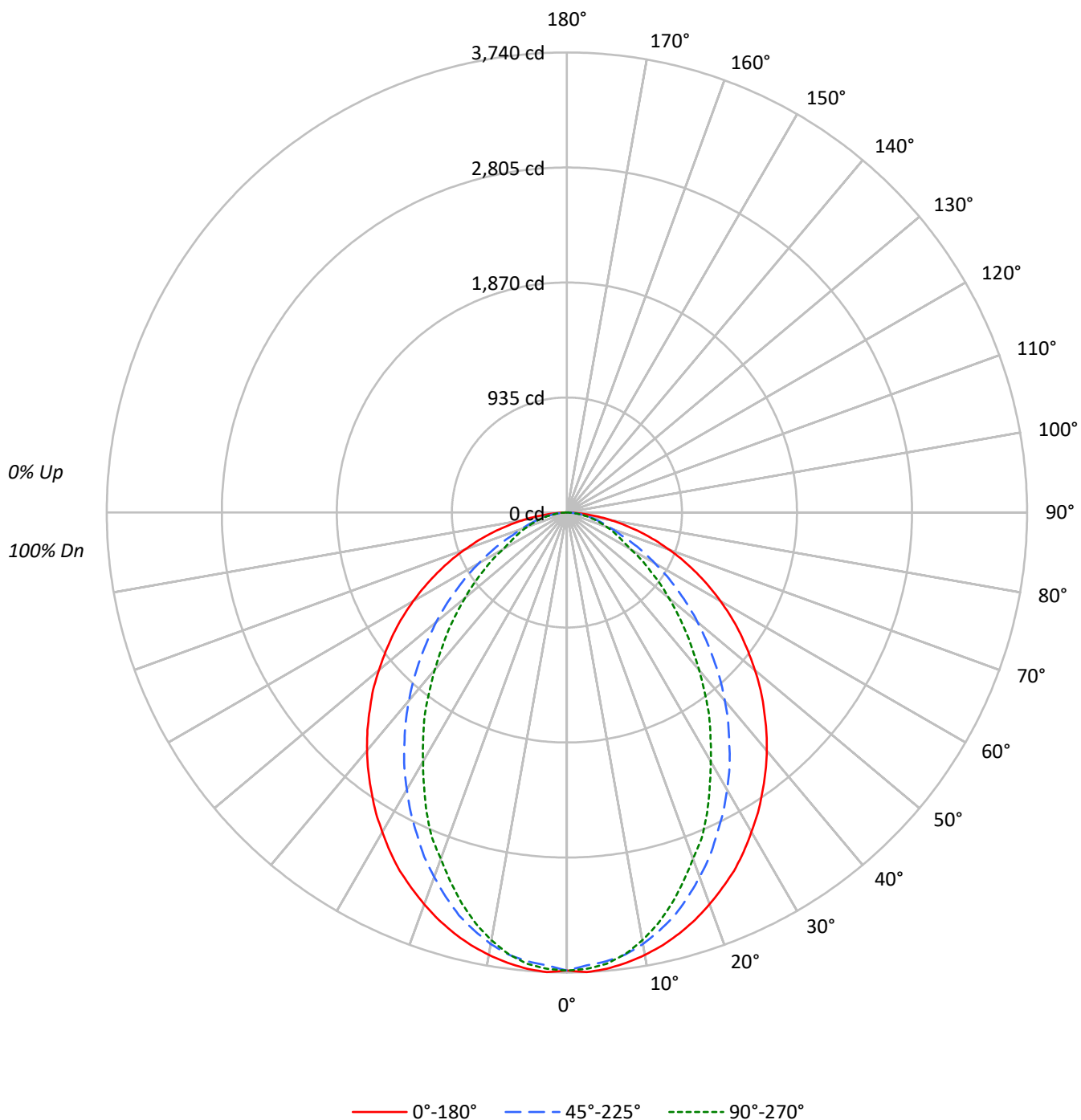
Lumens per Lamp: N/A
Luminaire Lumens: 7657.7 lumens
Efficiency: N/A
Efficacy: 84.5 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular (W 3.92' x L: 3.92' x H: 0')
CIE Type: Direct

Input Watts (W): 90.6
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.983
Total Harmonic Distortion (THDi): 0.073
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			0
RW	70	50	30	10	70	50	30	10	50	30	10		50	30	10		50	30	10	0
RCR																				
0	119	119	119	119	116	116	116	116	111	111	111		106	106	106		102	102	102	100
1	110	106	102	98	107	103	100	97	99	96	94		95	93	91		92	90	88	86
2	101	94	87	82	98	92	86	81	88	83	79		85	81	78		82	79	76	74
3	93	83	76	70	90	82	75	69	79	73	68		76	71	67		74	69	66	64
4	86	75	66	60	83	73	66	60	71	64	59		69	63	58		66	62	57	55
5	79	67	59	53	77	66	58	52	64	57	52		62	56	51		60	55	51	49
6	74	61	53	47	72	60	52	46	58	51	46		57	50	46		55	50	45	43
7	68	56	47	42	67	55	47	42	53	46	41		52	46	41		51	45	41	39
8	64	51	43	38	62	51	43	37	49	42	37		48	42	37		47	41	37	35
9	60	47	39	34	59	47	39	34	46	39	34		44	38	34		44	38	34	32
10	56	44	36	31	55	43	36	31	42	36	31		41	35	31		41	35	31	29

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2613	2613	2613
5°	2623	2580	2594
10°	2602	2538	2516
15°	2573	2463	2392
20°	2531	2355	2237
25°	2489	2233	2087
30°	2430	2108	1895
35°	2373	1972	1726
40°	2315	1830	1531
45°	2247	1672	1354
50°	2178	1512	1181
55°	2106	1340	1014
60°	2024	1158	842
65°	1930	973	766
70°	1818	802	705
75°	1681	731	658
80°	1484	653	599
85°	1165	515	515

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2247 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	349.0	4.6
10°-20°	958.0	12.5
20°-30°	1345.0	17.6
30°-40°	1466.1	19.1
40°-50°	1347.5	17.6
50°-60°	1058.3	13.8
60°-70°	688.8	9.0
70°-80°	354.6	4.6
80°-90°	90.5	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°	2651.9	34.6
0°-40°	4118.0	53.8
0°-60°	6523.8	85.2
0°-90°	7657.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	7657.7	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3723	3723	3723	3723	3723	
5°	3723	3707	3663	3693	3683	353
15°	3541	3504	3390	3326	3292	998
25°	3215	3107	2884	2746	2696	1478
35°	2770	2598	2302	2089	2015	1734
45°	2264	2038	1685	1445	1365	1749
55°	1722	1459	1095	893	829	1539
65°	1163	890	586	472	462	1153
75°	620	384	270	246	243	656
85°	145	74	64	64	64	174
90°	0	0	0	0	0	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3723.4	3723.4	3723.4	3723.4	3723.4
2.5°	3740.2	3723.4	3686.2	3720.2	3713.4
5°	3723.4	3706.6	3662.7	3693.0	3683.0
7.5°	3693.0	3673.0	3625.8	3639.0	3622.2
10°	3652.6	3629.0	3561.9	3551.4	3531.4
12.5°	3602.2	3571.9	3480.7	3460.7	3423.4
15°	3541.4	3504.3	3389.9	3325.8	3292.3
17.5°	3470.7	3416.7	3275.1	3201.1	3147.1
20°	3389.9	3322.3	3153.9	3069.9	2995.5
22.5°	3302.3	3224.7	3029.1	2914.7	2864.4
25°	3214.7	3106.7	2884.4	2746.3	2695.6
27.5°	3110.3	2995.5	2749.5	2591.2	2513.6
30°	2999.1	2870.8	2601.2	2429.6	2338.4
32.5°	2891.1	2735.9	2460.0	2257.7	2173.3
35°	2770.0	2598.0	2301.6	2089.3	2014.9
37.5°	2651.9	2466.5	2153.3	1920.5	1836.5
40°	2527.2	2325.2	1998.1	1759.0	1671.4
42.5°	2399.2	2183.7	1843.2	1593.8	1509.7
45°	2264.5	2038.5	1684.9	1445.3	1364.6
47.5°	2136.4	1897.3	1533.3	1293.8	1219.8
50°	1994.9	1755.7	1385.0	1152.3	1081.8
52.5°	1856.6	1603.8	1243.4	1021.0	957.1
55°	1721.7	1459.0	1095.0	893.1	829.0
57.5°	1583.8	1314.2	963.9	775.1	721.1
60°	1442.1	1172.6	825.5	653.9	599.9
62.5°	1304.2	1034.6	707.5	545.9	519.1
65°	1162.6	889.5	586.3	471.9	461.6
67.5°	1027.8	754.7	471.9	414.3	404.3
70°	886.3	623.5	390.8	357.2	343.5
72.5°	751.5	501.9	326.7	299.9	293.2
75°	619.9	384.0	269.6	245.9	242.7
77.5°	488.7	272.8	212.3	198.8	192.0
80°	367.2	195.6	161.6	148.3	148.3
82.5°	256.0	131.5	111.2	104.4	104.4
85°	144.7	74.0	64.0	64.0	64.0
87.5°	54.0	26.8	26.8	23.6	23.6
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	14.57	16.09	14.94	16.41	16.72	10.53	12.05	10.90	12.37	12.68
	3H	16.34	17.70	16.71	18.03	18.39	11.80	13.16	12.17	13.49	13.85
	4H	17.00	18.28	17.40	18.63	19.01	12.30	13.58	12.70	13.93	14.31
	6H	17.49	18.67	17.90	19.04	19.43	12.68	13.86	13.09	14.23	14.62
	8H	17.66	18.78	18.08	19.17	19.57	12.80	13.93	13.23	14.32	14.72
	12H	17.76	18.84	18.19	19.22	19.65	12.89	13.96	13.32	14.35	14.77
4H	2H	14.68	15.96	15.08	16.30	16.68	11.23	12.51	11.63	12.86	13.24
	3H	16.61	17.67	17.02	18.07	18.47	12.67	13.73	13.08	14.13	14.53
	4H	17.36	18.31	17.79	18.73	19.17	13.27	14.23	13.70	14.64	15.08
	6H	17.95	18.78	18.41	19.22	19.68	13.76	14.59	14.22	15.03	15.49
	8H	18.16	18.94	18.63	19.39	19.85	13.92	14.70	14.38	15.14	15.61
	12H	18.32	19.01	18.80	19.49	19.96	14.04	14.73	14.52	15.21	15.68
8H	4H	17.38	18.16	17.85	18.60	19.07	13.62	14.40	14.09	14.85	15.31
	6H	18.02	18.66	18.52	19.15	19.63	14.21	14.85	14.71	15.34	15.82
	8H	18.27	18.85	18.78	19.36	19.84	14.43	15.01	14.94	15.52	16.01
	12H	18.47	18.98	18.98	19.48	20.04	14.61	15.12	15.12	15.61	16.18
12H	4H	17.37	18.06	17.85	18.54	19.01	13.67	14.36	14.15	14.84	15.31
	6H	18.00	18.58	18.51	19.09	19.58	14.27	14.85	14.79	15.36	15.85
	8H	18.29	18.79	18.79	19.29	19.85	14.55	15.06	15.06	15.55	16.11