

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: P931538

Luminaire Tested: DFN2DS-TR4F0-090DS840-RLL

Issue Date: 11/20/2024

Test Information

Test Method: LM-79-2019
Report Number: P931538
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-TR4F0-090DS840-RLL
Description: 4 foot, Triangle Define Geo, with Direct 1in Regressed Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

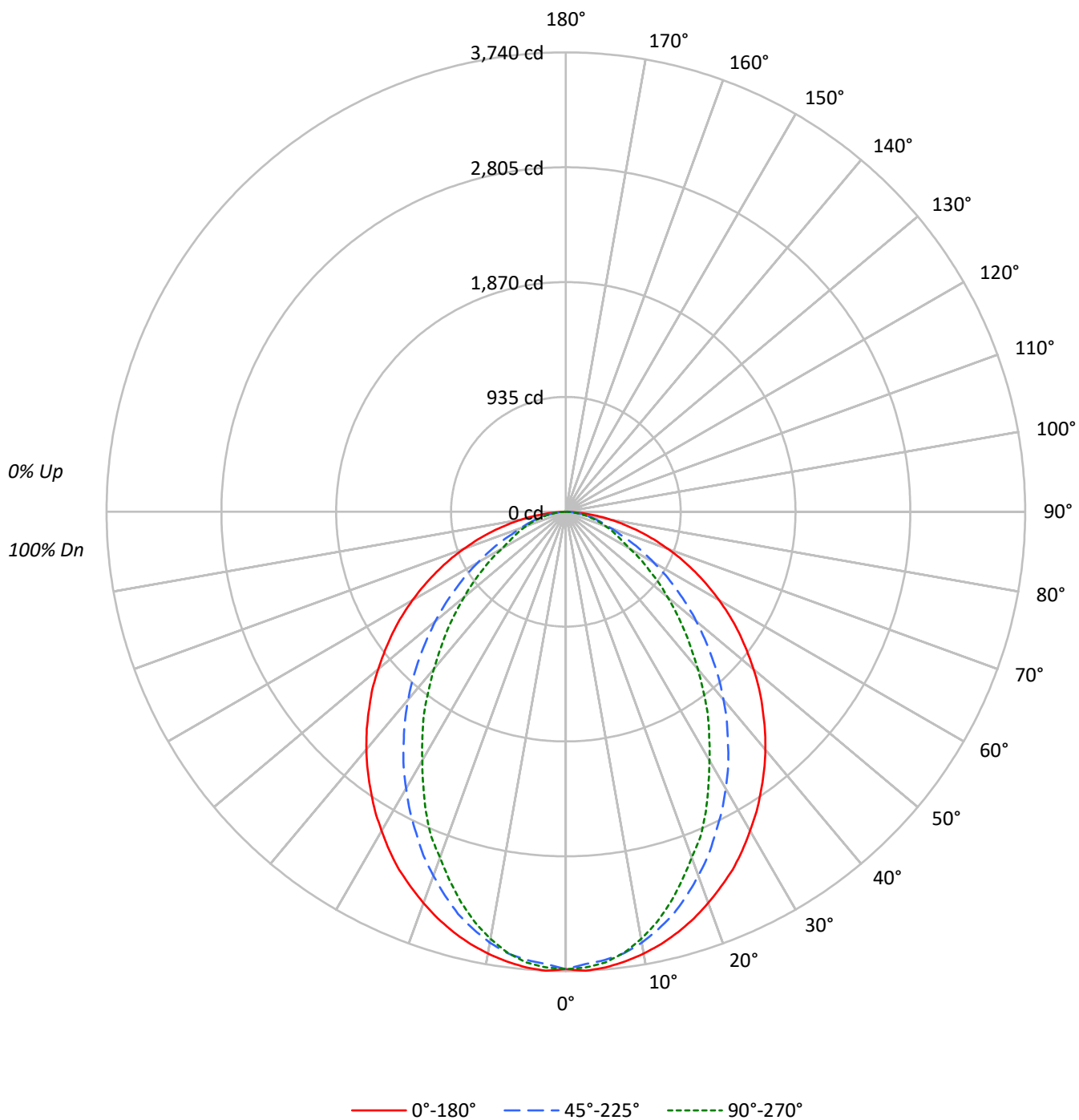
Lumens per Lamp: N/A
Luminaire Lumens: 7657.7 lumens
Efficiency: N/A
Efficacy: 81.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular (W 3.96' x L: 3.43' x H: 0')
CIE Type: Direct

Input Watts (W): 93.7
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.099
Total Harmonic Distortion (THDi): 0.979
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°	2958	2958	2958
5°	2969	2921	2937
10°	2947	2873	2849
15°	2913	2788	2708
20°	2866	2666	2532
25°	2818	2528	2363
30°	2751	2386	2145
35°	2686	2232	1954
40°	2621	2072	1733
45°	2544	1893	1533
50°	2466	1712	1337
55°	2385	1517	1148
60°	2291	1312	953
65°	2185	1102	868
70°	2059	908	798
75°	1903	828	745
80°	1680	739	678
85°	1319	583	583

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2544 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	15.00	16.52	15.37	16.84	17.15	10.96	12.49	11.33	12.80	13.11
	3H	16.77	18.13	17.15	18.46	18.82	12.23	13.59	12.61	13.92	14.28
	4H	17.43	18.71	17.83	19.06	19.44	12.73	14.01	13.13	14.36	14.74
	6H	17.92	19.11	18.34	19.47	19.86	13.11	14.29	13.52	14.66	15.05
	8H	18.09	19.22	18.52	19.60	20.01	13.24	14.36	13.66	14.75	15.15
	12H	18.19	19.27	18.62	19.65	20.08	13.32	14.39	13.75	14.78	15.21
4H	2H	15.11	16.39	15.51	16.74	17.11	11.66	12.94	12.06	13.29	13.67
	3H	17.04	18.10	17.45	18.50	18.90	13.10	14.16	13.51	14.56	14.97
	4H	17.79	18.75	18.22	19.16	19.60	13.70	14.66	14.13	15.07	15.51
	6H	18.38	19.21	18.84	19.66	20.12	14.19	15.02	14.65	15.46	15.92
	8H	18.60	19.37	19.06	19.82	20.28	14.35	15.13	14.81	15.57	16.04
	12H	18.75	19.44	19.23	19.92	20.39	14.47	15.16	14.95	15.64	16.11
8H	4H	17.81	18.59	18.28	19.04	19.50	14.05	14.83	14.52	15.28	15.74
	6H	18.45	19.09	18.95	19.58	20.06	14.64	15.28	15.14	15.78	16.25
	8H	18.70	19.28	19.22	19.79	20.28	14.86	15.44	15.38	15.95	16.44
	12H	18.91	19.42	19.42	19.91	20.47	15.04	15.55	15.55	16.04	16.61
12H	4H	17.80	18.49	18.28	18.97	19.44	14.10	14.79	14.58	15.27	15.74
	6H	18.43	19.01	18.95	19.52	20.01	14.70	15.28	15.22	15.79	16.28
	8H	18.72	19.23	19.23	19.72	20.28	14.98	15.49	15.49	15.98	16.54