

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: P931533

Luminaire Tested: DFN2DS-TR4F0-090DS830-FLL

Issue Date: 11/20/2024

Test Information

Test Method: LM-79-2019
Report Number: P931533
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-TR4F0-090DS830-FLL
Description: 4 foot, Triangle Define Geo, with Direct Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

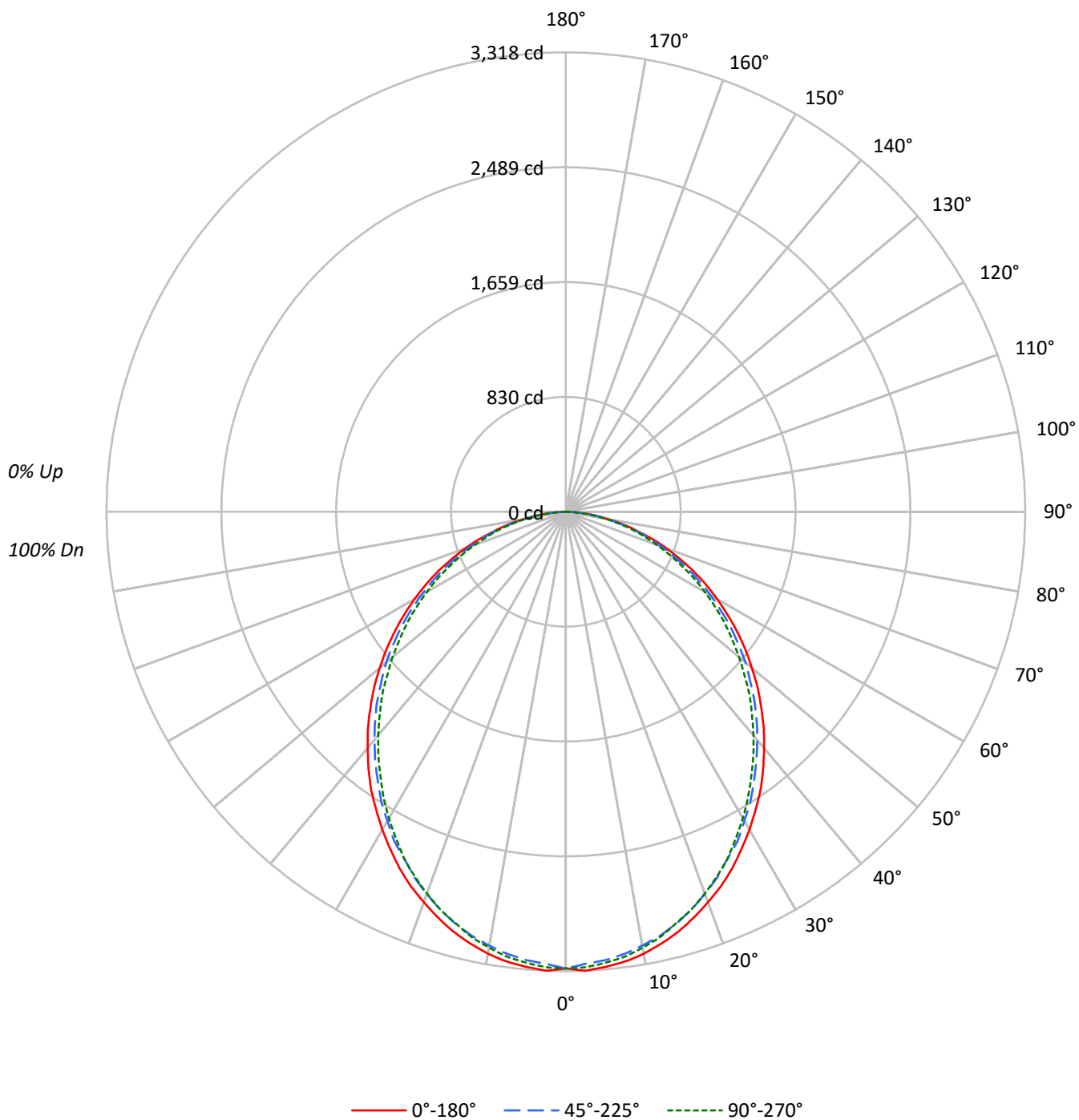
Lumens per Lamp: N/A
Luminaire Lumens: 8393.2 lumens
Efficiency: N/A
Efficacy: 89.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular (W 3.96' x L: 3.43' x H: 0')
CIE Type: Direct

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	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°	2621	2621	2621
5°	2631	2593	2608
10°	2615	2567	2579
15°	2583	2533	2531
20°	2537	2483	2481
25°	2491	2422	2422
30°	2433	2366	2345
35°	2378	2298	2264
40°	2309	2230	2188
45°	2242	2163	2110
50°	2168	2093	2019
55°	2092	2012	1938
60°	2006	1915	1845
65°	1914	1819	1735
70°	1798	1702	1621
75°	1635	1567	1529
80°	1452	1407	1335
85°	1184	1129	1013

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2242 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	310.5	3.7
10°-20°	873.6	10.4
20°-30°	1283.8	15.3
30°-40°	1491.1	17.8
40°-50°	1489.3	17.7
50°-60°	1298.6	15.5
60°-70°	959.9	11.4
70°-80°	543.1	6.5
80°-90°	143.4	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°	2467.9	29.4
0°-40°	3959.0	47.2
0°-60°	6746.8	80.4
0°-90°	8393.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	8393.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3299	3299	3299	3299	3299	
5°	3299	3286	3251	3277	3270	313
15°	3140	3122	3080	3093	3077	884
25°	2842	2817	2763	2769	2763	1308
35°	2452	2420	2370	2350	2335	1531
45°	1995	1973	1925	1891	1878	1540
55°	1510	1491	1453	1415	1399	1350
65°	1018	999	968	939	923	1007
75°	533	527	511	492	498	569
85°	130	127	124	114	111	153
90°	0	0	0	0	0	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3298.8	3298.8	3298.8	3298.8	3298.8
2.5°	3318.0	3302.2	3267.2	3298.8	3292.8
5°	3298.8	3286.4	3251.4	3276.7	3270.5
7.5°	3276.7	3257.8	3222.8	3248.4	3242.0
10°	3242.0	3219.8	3181.7	3206.9	3197.5
12.5°	3194.1	3175.3	3137.3	3153.1	3146.8
15°	3140.3	3121.5	3080.1	3092.9	3077.0
17.5°	3073.7	3054.8	3013.5	3029.3	3013.5
20°	3000.6	2981.8	2937.3	2946.8	2934.3
22.5°	2927.9	2899.4	2857.9	2857.9	2851.5
25°	2842.1	2816.9	2763.1	2769.1	2763.1
27.5°	2746.9	2724.6	2683.7	2674.2	2658.4
30°	2652.0	2626.4	2578.9	2569.5	2556.8
32.5°	2550.4	2531.5	2480.7	2461.5	2448.7
35°	2452.1	2420.5	2369.6	2350.5	2334.7
37.5°	2341.1	2312.4	2261.6	2239.4	2223.6
40°	2226.9	2201.4	2150.5	2122.2	2109.5
42.5°	2115.8	2090.3	2039.8	2007.9	1989.0
45°	1995.3	1973.2	1925.4	1890.7	1878.0
47.5°	1878.0	1855.7	1804.9	1769.9	1751.1
50°	1754.1	1738.3	1693.8	1649.4	1633.6
52.5°	1633.6	1611.4	1570.3	1535.4	1513.1
55°	1510.1	1490.9	1452.8	1414.9	1399.1
57.5°	1386.2	1370.4	1329.1	1291.0	1278.2
60°	1262.4	1249.9	1205.5	1170.5	1161.1
62.5°	1141.9	1119.7	1088.0	1056.5	1043.6
65°	1018.4	999.2	967.5	939.0	923.2
67.5°	891.5	875.4	847.0	824.9	812.1
70°	774.0	761.2	732.7	710.5	698.0
72.5°	653.6	640.7	624.9	602.8	593.4
75°	532.8	526.7	510.6	491.7	498.1
77.5°	425.0	412.3	405.9	396.5	387.1
80°	317.4	314.0	307.6	298.1	291.8
82.5°	215.7	215.7	212.7	199.9	199.9
85°	129.9	126.9	123.9	114.1	111.1
87.5°	57.2	50.8	44.5	35.0	31.7
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	14.63	16.24	14.99	16.55	16.87	14.19	15.80	14.55	16.11	16.42
	3H	16.38	17.83	16.76	18.16	18.52	15.89	17.34	16.27	17.67	18.03
	4H	17.03	18.40	17.42	18.74	19.12	16.53	17.90	16.93	18.25	18.62
	6H	17.50	18.76	17.91	19.13	19.52	16.99	18.26	17.41	18.63	19.02
	8H	17.64	18.85	18.06	19.24	19.64	17.14	18.35	17.56	18.74	19.13
	12H	17.73	18.89	18.16	19.27	19.70	17.22	18.38	17.65	18.76	19.19
4H	2H	15.19	16.56	15.59	16.91	17.28	14.84	16.21	15.24	16.55	16.93
	3H	17.17	18.31	17.57	18.71	19.11	16.76	17.90	17.17	18.30	18.70
	4H	17.94	18.98	18.37	19.39	19.83	17.52	18.55	17.95	18.97	19.40
	6H	18.54	19.44	18.99	19.88	20.34	18.11	19.01	18.56	19.45	19.91
	8H	18.73	19.57	19.19	20.02	20.48	18.29	19.14	18.75	19.58	20.04
	12H	18.86	19.62	19.34	20.10	20.56	18.41	19.17	18.89	19.64	20.11
8H	4H	18.22	19.06	18.68	19.50	19.97	17.84	18.69	18.30	19.13	19.60
	6H	18.93	19.63	19.42	20.12	20.60	18.55	19.25	19.04	19.74	20.21
	8H	19.19	19.82	19.70	20.33	20.81	18.80	19.43	19.31	19.93	20.42
	12H	19.39	19.95	19.90	20.44	21.00	18.98	19.53	19.48	20.02	20.59
12H	4H	18.24	19.00	18.72	19.48	19.95	17.88	18.64	18.36	19.11	19.58
	6H	18.97	19.61	19.48	20.11	20.60	18.61	19.24	19.12	19.75	20.23
	8H	19.29	19.85	19.80	20.34	20.90	18.91	19.47	19.42	19.96	20.52