

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: P930774

Luminaire Tested: DFN2DS-PN4F0-110DS940-RLL

Issue Date: 11/20/2024

Test Information

Test Method: LM-79-2019
Report Number: P930774
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-PN4F0-110DS940-RLL
Description: 4 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

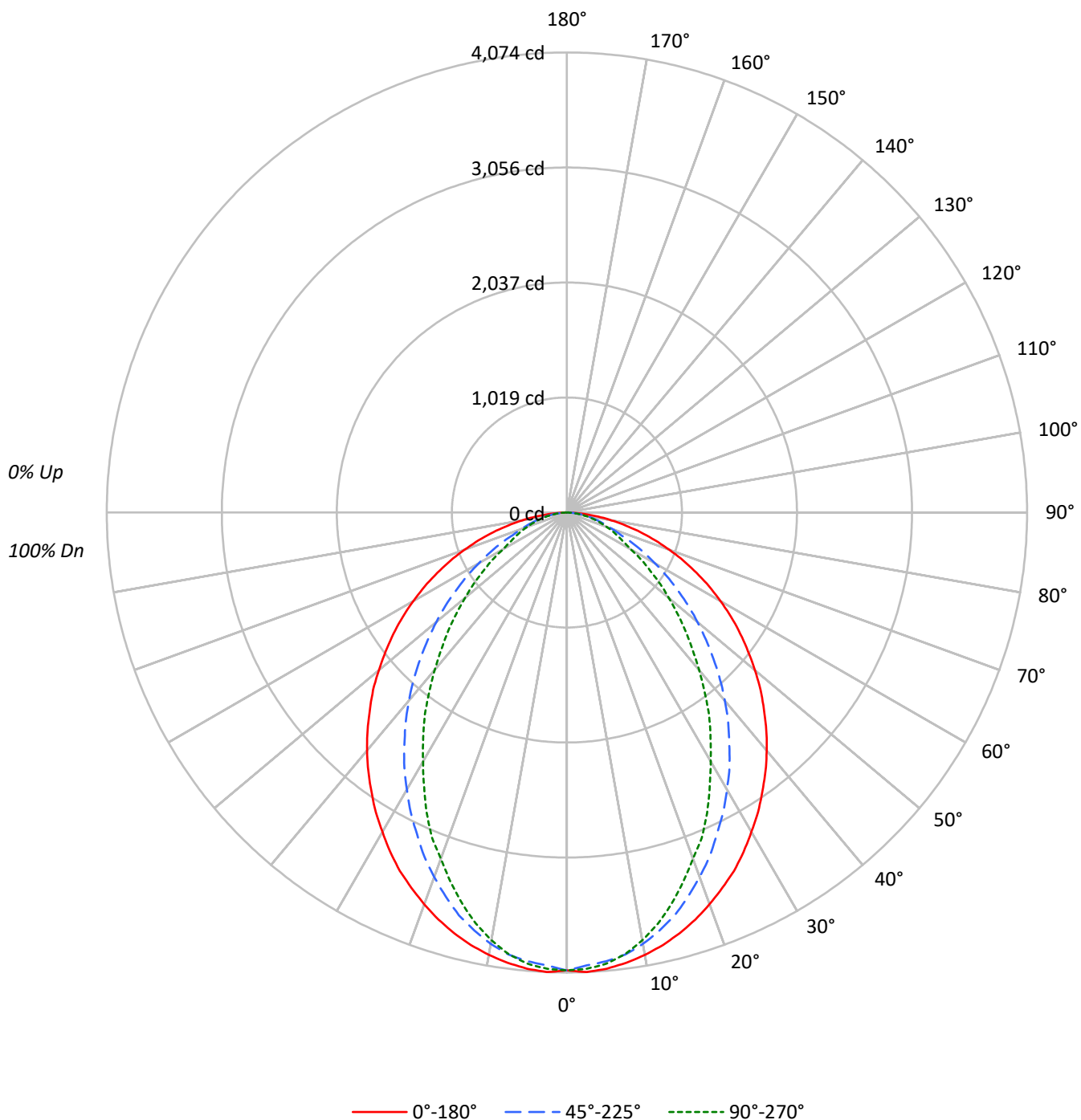
Lumens per Lamp: N/A
Luminaire Lumens: 8340.2 lumens
Efficiency: N/A
Efficacy: 70.1 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular (W 3.94' x L: 3.74' x H: 0')
CIE Type: Direct

Input Watts (W): 119
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.996
Total Harmonic Distortion (THDi): 0.064
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°	2960	2960	2960
5°	2972	2923	2939
10°	2949	2875	2851
15°	2915	2790	2710
20°	2868	2668	2534
25°	2820	2530	2365
30°	2753	2388	2147
35°	2688	2234	1956
40°	2623	2074	1735
45°	2546	1894	1534
50°	2467	1713	1338
55°	2386	1518	1149
60°	2293	1312	954
65°	2187	1103	868
70°	2060	908	799
75°	1904	828	746
80°	1681	740	679
85°	1321	584	584

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2546 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	380.1	4.6
10°-20°	1043.4	12.5
20°-30°	1464.8	17.6
30°-40°	1596.8	19.1
40°-50°	1467.6	17.6
50°-60°	1152.6	13.8
60°-70°	750.2	9.0
70°-80°	386.2	4.6
80°-90°	98.6	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°	2888.3	34.6
0°-40°	4485.0	53.8
0°-60°	7105.2	85.2
0°-90°	8340.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	8340.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	4055	4055	4055	4055	4055	
5°	4055	4037	3989	4022	4011	385
15°	3857	3817	3692	3622	3586	1087
25°	3501	3384	3141	2991	2936	1610
35°	3017	2830	2507	2276	2194	1888
45°	2466	2220	1835	1574	1486	1905
55°	1875	1589	1193	973	903	1676
65°	1266	969	639	514	503	1255
75°	675	418	294	268	264	714
85°	158	81	70	70	70	189
90°	0	0	0	0	0	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	4055.3	4055.3	4055.3	4055.3	4055.3
2.5°	4073.6	4055.3	4014.8	4051.8	4044.4
5°	4055.3	4037.0	3989.1	4022.2	4011.3
7.5°	4022.2	4000.4	3949.0	3963.4	3945.0
10°	3978.2	3952.5	3879.3	3868.0	3846.2
12.5°	3923.3	3890.2	3790.9	3769.1	3728.6
15°	3857.1	3816.6	3692.0	3622.3	3585.7
17.5°	3780.0	3721.2	3567.0	3486.4	3427.6
20°	3692.0	3618.4	3435.0	3343.5	3262.5
22.5°	3596.6	3512.1	3299.2	3174.5	3119.6
25°	3501.2	3383.6	3141.4	2991.1	2935.8
27.5°	3387.5	3262.5	2994.6	2822.1	2737.6
30°	3266.4	3126.6	2833.1	2646.1	2546.8
32.5°	3148.8	2979.8	2679.2	2458.9	2367.0
35°	3016.8	2829.5	2506.8	2275.5	2194.5
37.5°	2888.4	2686.3	2345.2	2091.7	2000.2
40°	2752.4	2532.5	2176.2	1915.7	1820.3
42.5°	2613.0	2378.3	2007.6	1735.8	1644.3
45°	2466.3	2220.2	1835.1	1574.2	1486.3
47.5°	2326.9	2066.4	1670.0	1409.1	1328.5
50°	2172.6	1912.2	1508.5	1255.0	1178.2
52.5°	2022.0	1746.7	1354.2	1112.1	1042.3
55°	1875.2	1589.0	1192.6	972.6	903.0
57.5°	1724.9	1431.3	1049.7	844.2	785.3
60°	1570.7	1277.2	899.0	712.2	653.4
62.5°	1420.4	1126.9	770.6	594.6	565.3
65°	1266.2	968.7	638.6	514.0	502.6
67.5°	1119.5	822.0	514.0	451.3	440.4
70°	965.2	679.1	425.6	389.0	374.2
72.5°	818.4	546.7	355.9	326.7	319.2
75°	675.2	418.2	293.6	267.9	264.4
77.5°	532.3	297.1	231.3	216.5	209.1
80°	399.9	213.0	176.0	161.6	161.6
82.5°	278.8	143.3	121.1	113.7	113.7
85°	157.7	80.6	69.7	69.7	69.7
87.5°	58.8	29.2	29.2	25.7	25.7
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	15.01	16.53	15.37	16.84	17.15	10.97	12.49	11.33	12.80	13.12
	3H	16.77	18.14	17.15	18.46	18.83	12.23	13.60	12.61	13.92	14.29
	4H	17.44	18.72	17.84	19.07	19.44	12.73	14.01	13.13	14.36	14.74
	6H	17.93	19.11	18.34	19.48	19.87	13.11	14.30	13.53	14.66	15.06
	8H	18.09	19.22	18.52	19.61	20.01	13.24	14.37	13.66	14.75	15.16
	12H	18.19	19.27	18.62	19.65	20.08	13.32	14.40	13.75	14.78	15.21
4H	2H	15.11	16.39	15.51	16.74	17.12	11.66	12.94	12.06	13.29	13.67
	3H	17.04	18.11	17.45	18.51	18.91	13.10	14.17	13.52	14.57	14.97
	4H	17.79	18.75	18.22	19.16	19.60	13.70	14.66	14.14	15.08	15.51
	6H	18.38	19.22	18.84	19.66	20.12	14.19	15.02	14.65	15.47	15.93
	8H	18.60	19.38	19.06	19.82	20.29	14.35	15.13	14.82	15.58	16.04
	12H	18.75	19.45	19.23	19.92	20.40	14.47	15.17	14.95	15.64	16.12
8H	4H	17.82	18.59	18.28	19.04	19.50	14.06	14.84	14.52	15.28	15.75
	6H	18.45	19.10	18.95	19.59	20.06	14.64	15.29	15.14	15.78	16.26
	8H	18.70	19.28	19.22	19.79	20.28	14.87	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	16.05	16.61
12H	4H	17.80	18.50	18.28	18.97	19.44	14.10	14.80	14.58	15.27	15.75
	6H	18.43	19.01	18.95	19.52	20.01	14.71	15.29	15.22	15.80	16.28
	8H	18.72	19.23	19.23	19.72	20.29	14.98	15.49	15.49	15.98	16.55