

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: P929788

Luminaire Tested: DFN2DS-4P2F0-020DS830-RLL

Issue Date: 11/20/2024

Test Information

Test Method: LM-79-2019
Report Number: P929788
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-4P2F0-020DS830-RLL
Description: 2 foot, 90deg - 4way Define Geo, with Direct 1in Regressed Frosted Lens
Light Source: -
Ballast/Driver: -

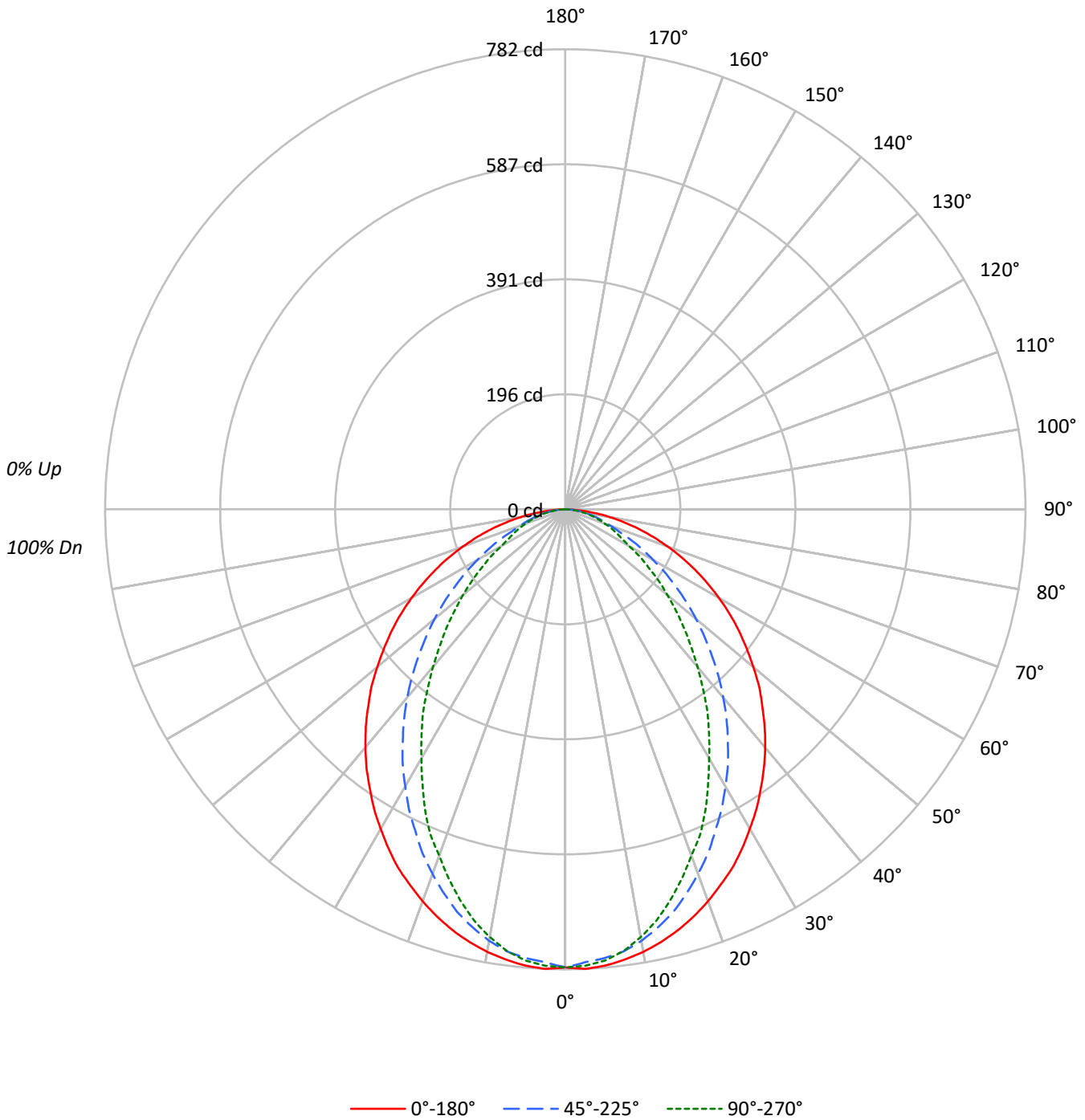
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1601.4 lumens
Efficiency: N/A
Efficacy: 83.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular (W 2.07' x L: 2.07' x H: 0')
CIE Type: Direct

Input Watts (W): 19.3
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9967
Total Harmonic Distortion (THDi): 0.063
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	50	30	10	0
RCR																					
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	102	102	102	100
1	110	106	102	98	107	103	100	97	99	96	94	95	93	91	92	90	88	88	88	88	86
2	101	94	87	82	98	92	86	81	88	83	79	85	81	78	82	79	76	76	76	76	74
3	93	83	76	70	90	82	75	69	79	73	68	76	71	67	74	69	66	66	66	66	64
4	86	75	66	60	83	73	66	60	71	64	59	69	63	58	66	62	57	57	57	57	55
5	79	67	59	53	77	66	58	52	64	57	52	62	56	51	60	55	51	51	51	51	49
6	74	61	53	47	72	60	52	46	58	51	46	57	50	46	55	50	45	45	45	45	43
7	68	56	47	42	67	55	47	42	53	46	41	52	46	41	51	45	41	41	41	41	39
8	64	51	43	38	62	51	43	37	49	42	37	48	42	37	47	41	37	37	37	37	35
9	60	47	39	34	59	47	39	34	46	39	34	44	38	34	44	38	34	34	34	34	32
10	56	44	36	31	55	43	36	31	42	36	31	41	35	31	41	35	31	31	31	31	29

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1950	1950	1950
5°	1957	1925	1936
10°	1942	1894	1878
15°	1920	1838	1785
20°	1889	1758	1669
25°	1857	1667	1557
30°	1813	1573	1414
35°	1771	1472	1288
40°	1728	1366	1142
45°	1677	1248	1010
50°	1625	1129	882
55°	1572	1000	757
60°	1510	865	629
65°	1440	726	572
70°	1357	598	526
75°	1254	545	491
80°	1107	487	447
85°	868	385	385

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 1677 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	73.0	4.6
10°-20°	200.3	12.5
20°-30°	281.3	17.6
30°-40°	306.6	19.1
40°-50°	281.8	17.6
50°-60°	221.3	13.8
60°-70°	144.1	9.0
70°-80°	74.1	4.6
80°-90°	18.9	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°	554.6	34.6
0°-40°	861.2	53.8
0°-60°	1364.3	85.2
0°-90°	1601.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1601.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	779	779	779	779	779	
5°	779	775	766	772	770	74
15°	741	733	709	696	688	209
25°	672	650	603	574	564	309
35°	579	543	481	437	421	363
45°	474	426	352	302	285	366
55°	360	305	229	187	173	322
65°	243	186	123	99	97	241
75°	130	80	56	51	51	137
85°	30	15	13	13	13	36
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	778.7	778.7	778.7	778.7	778.7
2.5°	782.1	778.7	770.8	778.0	776.6
5°	778.7	775.2	765.9	772.3	770.2
7.5°	772.3	768.1	758.2	761.0	757.5
10°	763.9	758.9	744.8	742.7	738.5
12.5°	753.3	746.9	727.9	723.7	715.9
15°	740.6	732.8	708.9	695.5	688.5
17.5°	725.8	714.5	684.9	669.4	658.2
20°	708.9	694.7	659.6	642.0	626.4
22.5°	690.6	674.4	633.5	609.6	599.0
25°	672.3	649.7	603.2	574.3	563.7
27.5°	650.5	626.4	575.0	541.8	525.6
30°	627.2	600.3	544.0	508.1	489.0
32.5°	604.6	572.2	514.4	472.1	454.5
35°	579.2	543.3	481.4	436.9	421.4
37.5°	554.6	515.7	450.3	401.7	384.1
40°	528.5	486.3	417.9	367.9	349.5
42.5°	501.7	456.7	385.5	333.3	315.8
45°	473.5	426.3	352.4	302.3	285.3
47.5°	446.8	396.8	320.7	270.5	255.1
50°	417.2	367.2	289.7	241.0	226.3
52.5°	388.2	335.4	260.0	213.6	200.2
55°	360.0	305.1	229.0	186.8	173.3
57.5°	331.2	274.8	201.6	162.1	150.8
60°	301.6	245.2	172.7	136.8	125.5
62.5°	272.7	216.4	148.0	114.2	108.5
65°	243.1	186.0	122.6	98.7	96.6
67.5°	215.0	157.8	98.7	86.7	84.6
70°	185.3	130.4	81.7	74.7	71.9
72.5°	157.1	104.9	68.3	62.7	61.3
75°	129.6	80.3	56.3	51.4	50.8
77.5°	102.2	57.1	44.4	41.5	40.1
80°	76.8	40.9	33.8	31.0	31.0
82.5°	53.5	27.5	23.3	21.9	21.9
85°	30.2	15.4	13.4	13.4	13.4
87.5°	11.3	5.7	5.7	4.9	4.9
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	13.55	15.08	13.92	15.39	15.70	9.52	11.04	9.88	11.35	11.67
	3H	15.32	16.68	15.70	17.01	17.37	10.78	12.15	11.16	12.47	12.84
	4H	15.99	17.27	16.39	17.61	17.99	11.28	12.56	11.68	12.91	13.29
	6H	16.47	17.66	16.89	18.02	18.42	11.66	12.85	12.08	13.21	13.60
	8H	16.64	17.77	17.07	18.16	18.56	11.79	12.91	12.21	13.30	13.71
	12H	16.74	17.82	17.17	18.20	18.63	11.87	12.95	12.30	13.33	13.76
4H	2H	13.66	14.94	14.06	15.29	15.67	10.21	11.49	10.61	11.84	12.22
	3H	15.59	16.65	16.00	17.05	17.46	11.65	12.72	12.07	13.12	13.52
	4H	16.34	17.30	16.77	17.71	18.15	12.25	13.21	12.69	13.63	14.06
	6H	16.93	17.76	17.39	18.21	18.67	12.74	13.57	13.20	14.02	14.47
	8H	17.15	17.92	17.61	18.37	18.84	12.90	13.68	13.37	14.12	14.59
	12H	17.30	17.99	17.78	18.47	18.94	13.02	13.72	13.50	14.19	14.66
8H	4H	16.36	17.14	16.83	17.59	18.05	12.61	13.38	13.07	13.83	14.30
	6H	17.00	17.65	17.50	18.14	18.61	13.19	13.83	13.69	14.33	14.80
	8H	17.25	17.83	17.77	18.34	18.83	13.41	13.99	13.93	14.50	14.99
	12H	17.46	17.97	17.97	18.46	19.02	13.59	14.10	14.10	14.60	15.16
12H	4H	16.35	17.04	16.83	17.52	17.99	12.65	13.34	13.13	13.82	14.29
	6H	16.98	17.56	17.50	18.07	18.56	13.26	13.83	13.77	14.34	14.83
	8H	17.27	17.78	17.78	18.27	18.83	13.53	14.04	14.04	14.53	15.10