

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: P929854

Luminaire Tested: DFN2DS-4P3F0-020DS935-RLL

Issue Date: 11/20/2024

Test Information

Test Method: LM-79-2019
Report Number: P929854
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-4P3F0-020DS935-RLL
Description: 3 foot, 90deg - 4way Define Geo, with Direct 1in Regressed Frosted Lens
Light Source: -
Ballast/Driver: -

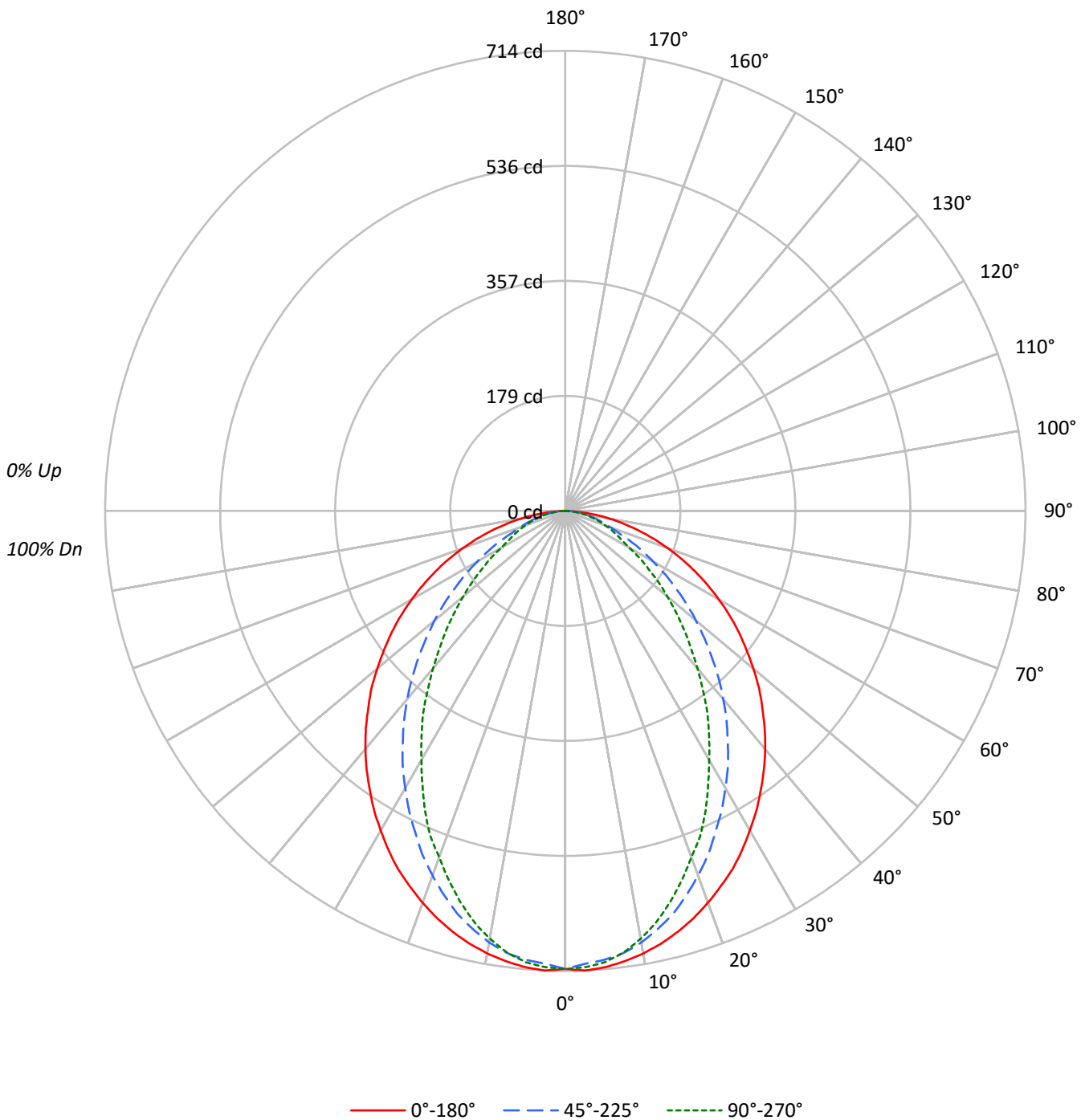
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1462.0 lumens
Efficiency: N/A
Efficacy: 78.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular (W 3.07' x L: 3.07' x H: 0')
CIE Type: Direct

Input Watts (W): 18.6
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9951
Total Harmonic Distortion (THDi): 0.07
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°	810	810	810
5°	813	800	804
10°	807	787	780
15°	798	764	742
20°	785	730	694
25°	772	692	647
30°	753	653	587
35°	736	611	535
40°	718	568	475
45°	697	518	420
50°	675	469	366
55°	653	415	314
60°	628	359	261
65°	599	302	238
70°	564	249	219
75°	521	226	204
80°	460	203	186
85°	361	160	160

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 697 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	66.6	4.6
10°-20°	182.9	12.5
20°-30°	256.8	17.6
30°-40°	279.9	19.1
40°-50°	257.3	17.6
50°-60°	202.1	13.8
60°-70°	131.5	9.0
70°-80°	67.7	4.6
80°-90°	17.3	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°	506.3	34.6
0°-40°	786.2	53.8
0°-60°	1245.5	85.2
0°-90°	1462.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1462.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	711	711	711	711	711	
5°	711	708	699	705	703	67
15°	676	669	647	635	629	191
25°	614	593	551	524	515	282
35°	529	496	440	399	385	331
45°	432	389	322	276	260	334
55°	329	279	209	170	158	294
65°	222	170	112	90	88	220
75°	118	73	51	47	46	125
85°	28	14	12	12	12	33
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	710.9	710.9	710.9	710.9	710.9
2.5°	714.1	710.9	703.7	710.3	709.0
5°	710.9	707.7	699.3	705.1	703.1
7.5°	705.1	701.2	692.2	694.8	691.5
10°	697.4	692.8	680.0	678.0	674.2
12.5°	687.7	681.9	664.5	660.7	653.6
15°	676.1	669.0	647.2	634.9	628.6
17.5°	662.6	652.3	625.3	611.1	600.9
20°	647.2	634.2	602.2	586.1	571.9
22.5°	630.5	615.7	578.4	556.5	546.9
25°	613.8	593.1	550.7	524.3	514.6
27.5°	593.8	571.9	524.9	494.7	479.9
30°	572.6	548.1	496.6	463.9	446.4
32.5°	551.9	522.4	469.6	431.0	415.0
35°	528.8	496.0	439.5	398.9	384.7
37.5°	506.3	470.8	411.1	366.7	350.6
40°	482.5	443.9	381.5	335.8	319.1
42.5°	458.0	416.9	351.9	304.3	288.3
45°	432.3	389.2	321.7	276.0	260.5
47.5°	407.9	362.2	292.7	247.0	232.9
50°	380.9	335.2	264.4	220.0	206.6
52.5°	354.4	306.2	237.4	195.0	182.8
55°	328.7	278.6	209.1	170.5	158.2
57.5°	302.4	250.9	184.0	148.0	137.7
60°	275.4	223.9	157.6	124.9	114.6
62.5°	249.0	197.5	135.1	104.2	99.1
65°	222.0	169.8	112.0	90.1	88.2
67.5°	196.3	144.0	90.1	79.1	77.2
70°	169.2	119.0	74.6	68.2	65.6
72.5°	143.4	95.8	62.4	57.3	56.0
75°	118.3	73.3	51.4	47.0	46.4
77.5°	93.3	52.1	40.5	37.9	36.6
80°	70.1	37.3	30.9	28.3	28.3
82.5°	48.8	25.1	21.2	20.0	20.0
85°	27.6	14.1	12.2	12.2	12.2
87.5°	10.3	5.2	5.2	4.5	4.5
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	10.50	12.02	10.87	12.34	12.65	6.46	7.99	6.83	8.30	8.61
	3H	12.27	13.63	12.65	13.96	14.32	7.73	9.10	8.11	9.42	9.78
	4H	12.93	14.21	13.33	14.56	14.94	8.23	9.51	8.63	9.86	10.24
	6H	13.42	14.61	13.84	14.97	15.36	8.61	9.79	9.02	10.16	10.55
	8H	13.59	14.71	14.01	15.10	15.51	8.74	9.86	9.16	10.25	10.65
	12H	13.69	14.77	14.12	15.15	15.58	8.82	9.90	9.25	10.28	10.71
4H	2H	10.61	11.89	11.01	12.24	12.62	7.16	8.44	7.56	8.79	9.17
	3H	12.54	13.60	12.95	14.00	14.40	8.60	9.67	9.01	10.07	10.47
	4H	13.29	14.25	13.72	14.66	15.10	9.20	10.16	9.64	10.58	11.01
	6H	13.88	14.71	14.34	15.16	15.62	9.69	10.52	10.15	10.97	11.42
	8H	14.09	14.87	14.56	15.32	15.78	9.85	10.63	10.32	11.07	11.54
	12H	14.25	14.94	14.73	15.42	15.89	9.97	10.67	10.45	11.14	11.61
8H	4H	13.31	14.09	13.78	14.53	15.00	9.56	10.33	10.02	10.78	11.25
	6H	13.95	14.59	14.45	15.08	15.56	10.14	10.78	10.64	11.28	11.75
	8H	14.20	14.78	14.71	15.29	15.78	10.36	10.94	10.88	11.45	11.94
	12H	14.40	14.91	14.91	15.41	15.97	10.54	11.05	11.05	11.55	12.11
12H	4H	13.30	13.99	13.78	14.47	14.94	9.60	10.29	10.08	10.77	11.24
	6H	13.93	14.51	14.45	15.02	15.51	10.21	10.78	10.72	11.29	11.78
	8H	14.22	14.73	14.73	15.22	15.78	10.48	10.99	10.99	11.48	12.05