

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: P929799

Luminaire Tested: DFN2DS-4P2F0-020DS935-FLL

Issue Date: 11/20/2024

**Test Information**

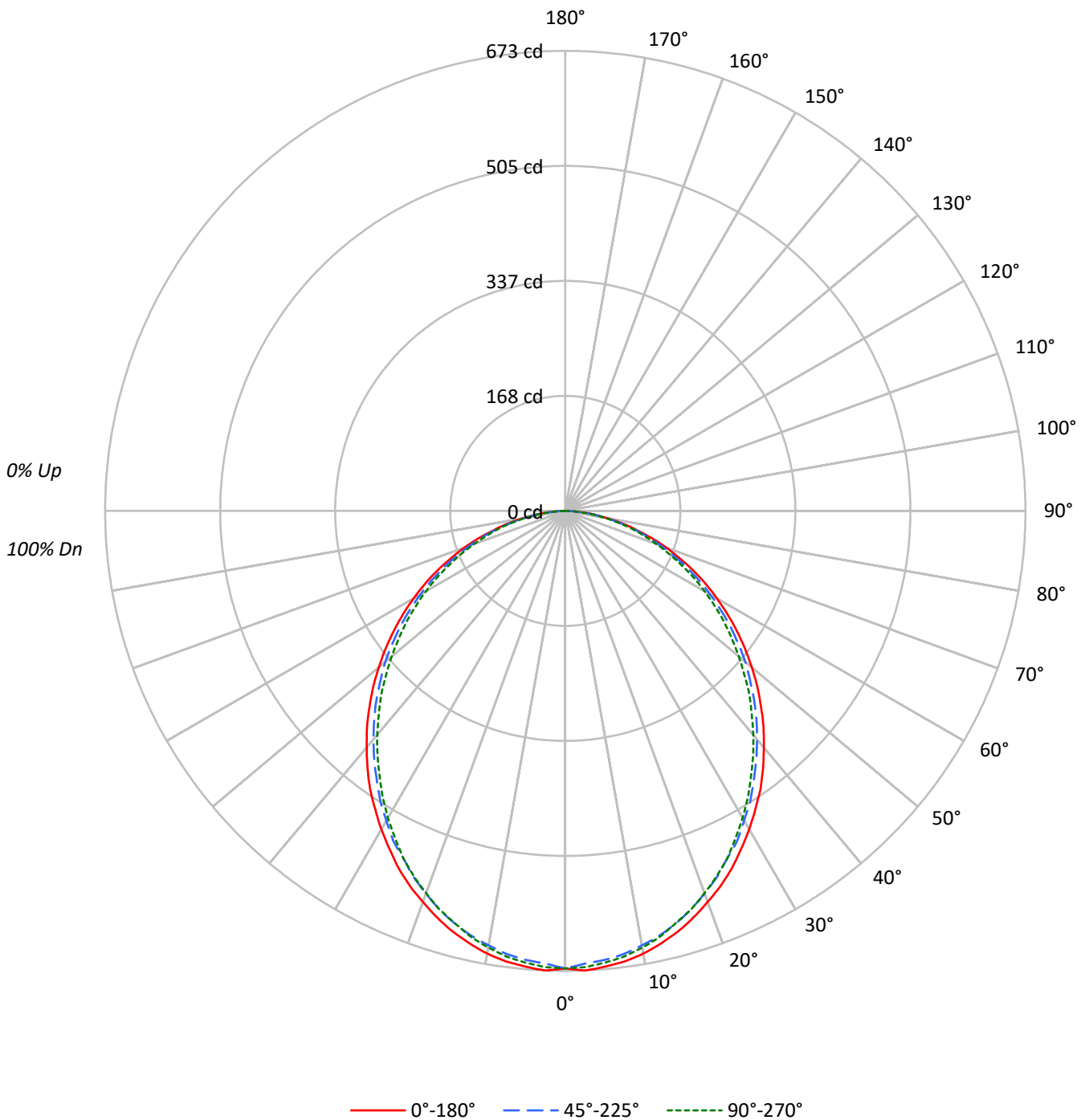
Test Method: LM-79-2019  
Report Number: P929799  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P333812)  
Test Lab: INNOVATION CENTER  
Issue Date: 11/20/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: DFN2DS-4P2F0-020DS935-FLL  
Description: 2 foot, 90deg - 4way Define Geo, with Direct Frosted Lens  
Light Source: -  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1702.8 lumens  
Efficiency: N/A  
Efficacy: 88.2 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29  
Luminous Opening: Rectangular (W 2.07' x L: 2.07' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 19.3  
Input Voltage (V): 120  
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	109	104	100	96	106	102	98	95	98	95	92	94	91	89	90	88	86	86	86	86	84
2	99	91	85	79	97	89	83	78	86	81	76	83	78	74	80	76	73	73	73	73	71
3	91	80	72	66	88	79	71	65	76	69	64	73	68	63	71	66	62	62	62	62	60
4	83	71	63	56	81	70	62	56	68	61	55	65	59	54	63	58	54	54	54	54	51
5	77	64	55	49	75	63	55	48	61	53	48	59	52	47	57	51	47	47	47	47	45
6	71	58	49	43	69	57	48	42	55	48	42	53	47	42	52	46	41	41	41	41	39
7	66	52	44	38	64	52	43	38	50	43	37	49	42	37	47	41	37	37	37	37	35
8	61	48	40	34	60	47	39	34	46	39	33	45	38	33	44	38	33	33	33	33	31
9	57	44	36	30	56	43	36	30	42	35	30	41	35	30	40	34	30	30	30	30	28
10	54	41	33	28	53	40	33	28	39	32	27	38	32	27	37	32	27	27	27	27	26

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	1676	1676	1676
5°	1682	1658	1668
10°	1672	1641	1649
15°	1652	1620	1618
20°	1622	1588	1586
25°	1593	1549	1549
30°	1556	1513	1500
35°	1521	1469	1448
40°	1477	1426	1399
45°	1433	1383	1349
50°	1386	1339	1291
55°	1337	1287	1239
60°	1283	1225	1180
65°	1224	1163	1110
70°	1149	1088	1037
75°	1046	1001	977
80°	929	900	854
85°	756	721	646

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 1433 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	63.0	3.7
10°-20°	177.2	10.4
20°-30°	260.5	15.3
30°-40°	302.5	17.8
40°-50°	302.1	17.7
50°-60°	263.4	15.5
60°-70°	194.7	11.4
70°-80°	110.2	6.5
80°-90°	29.1	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°	500.7	29.4
0°-40°	803.2	47.2
0°-60°	1368.8	80.4
0°-90°	1702.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1702.8	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	669	669	669	669	669	
5°	669	667	660	665	664	64
15°	637	633	625	628	624	179
25°	577	572	560	562	560	265
35°	498	491	481	477	474	311
45°	405	400	391	384	381	312
55°	306	302	295	287	284	274
65°	207	203	196	190	187	204
75°	108	107	104	100	101	115
85°	26	26	25	23	22	31
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	669.3	669.3	669.3	669.3	669.3
2.5°	673.1	669.9	662.8	669.3	668.0
5°	669.3	666.8	659.6	664.8	663.5
7.5°	664.8	660.9	653.9	659.0	657.7
10°	657.7	653.3	645.5	650.6	648.7
12.5°	648.0	644.2	636.5	639.7	638.4
15°	637.1	633.3	624.9	627.5	624.3
17.5°	623.6	619.8	611.4	614.6	611.4
20°	608.8	604.9	595.9	597.9	595.3
22.5°	594.0	588.2	579.8	579.8	578.5
25°	576.6	571.5	560.5	561.8	560.5
27.5°	557.3	552.8	544.5	542.6	539.3
30°	538.0	532.9	523.2	521.3	518.7
32.5°	517.4	513.6	503.3	499.4	496.8
35°	497.5	491.1	480.7	476.9	473.6
37.5°	475.0	469.1	458.8	454.3	451.1
40°	451.8	446.6	436.3	430.6	427.9
42.5°	429.2	424.1	413.8	407.4	403.5
45°	404.8	400.3	390.6	383.6	381.0
47.5°	381.0	376.5	366.2	359.0	355.3
50°	355.9	352.7	343.7	334.6	331.4
52.5°	331.4	326.9	318.5	311.5	307.0
55°	306.3	302.5	294.7	287.1	283.8
57.5°	281.2	278.0	269.6	262.0	259.3
60°	256.1	253.6	244.6	237.4	235.6
62.5°	231.7	227.1	220.8	214.3	211.7
65°	206.6	202.7	196.3	190.5	187.3
67.5°	180.9	177.6	171.8	167.4	164.8
70°	157.0	154.5	148.6	144.1	141.6
72.5°	132.6	130.0	126.8	122.3	120.4
75°	108.1	106.9	103.5	99.8	101.0
77.5°	86.3	83.7	82.3	80.4	78.5
80°	64.4	63.7	62.4	60.5	59.2
82.5°	43.8	43.8	43.2	40.6	40.6
85°	26.3	25.7	25.1	23.1	22.5
87.5°	11.6	10.3	9.0	7.1	6.4
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	13.08	14.69	13.44	15.00	15.31	12.63	14.24	13.00	14.56	14.87
	3H	14.83	16.28	15.20	16.61	16.97	14.34	15.79	14.71	16.12	16.48
	4H	15.47	16.84	15.87	17.19	17.57	14.98	16.35	15.38	16.70	17.07
	6H	15.94	17.21	16.35	17.58	17.97	15.44	16.71	15.85	17.07	17.47
	8H	16.09	17.30	16.51	17.69	18.08	15.58	16.79	16.01	17.18	17.58
	12H	16.18	17.34	16.61	17.72	18.15	15.66	16.82	16.09	17.21	17.63
4H	2H	13.64	15.01	14.03	15.35	15.73	13.29	14.65	13.68	15.00	15.38
	3H	15.61	16.76	16.02	17.16	17.56	15.21	16.35	15.62	16.75	17.15
	4H	16.39	17.42	16.82	17.84	18.27	15.97	17.00	16.40	17.41	17.85
	6H	16.99	17.89	17.44	18.33	18.79	16.55	17.46	17.01	17.90	18.35
	8H	17.18	18.02	17.64	18.46	18.93	16.74	17.58	17.20	18.03	18.49
	12H	17.31	18.07	17.79	18.54	19.01	16.85	17.61	17.34	18.09	18.56
8H	4H	16.66	17.51	17.12	17.95	18.42	16.29	17.13	16.75	17.58	18.04
	6H	17.38	18.08	17.87	18.57	19.04	16.99	17.70	17.49	18.19	18.66
	8H	17.64	18.27	18.15	18.77	19.26	17.24	17.87	17.75	18.38	18.87
	12H	17.84	18.39	18.34	18.88	19.45	17.42	17.98	17.93	18.47	19.03
12H	4H	16.69	17.45	17.17	17.92	18.39	16.32	17.08	16.80	17.56	18.03
	6H	17.42	18.05	17.93	18.56	19.05	17.05	17.69	17.56	18.19	18.68
	8H	17.74	18.29	18.24	18.78	19.35	17.36	17.92	17.87	18.41	18.97