

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: P929888

Luminaire Tested: DFN2DS-4P3F0-040DS930-RLL

Issue Date: 11/20/2024

**Test Information**

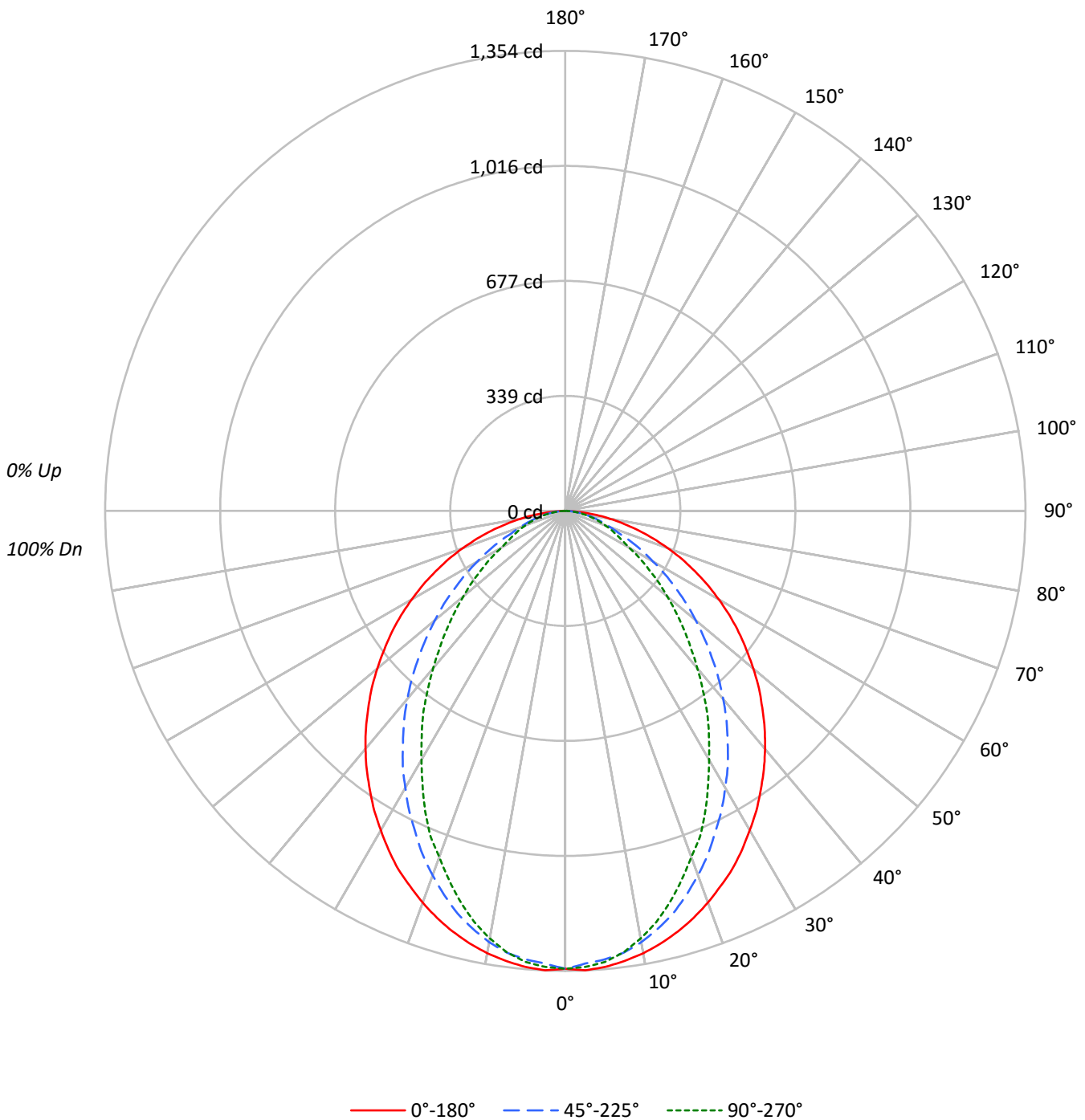
Test Method: LM-79-2019  
Report Number: P929888  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P333882)  
Test Lab: INNOVATION CENTER  
Issue Date: 11/20/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: DFN2DS-4P3F0-040DS930-RLL  
Description: 3 foot, 90deg - 4way Define Geo, with Direct 1in Regressed Frosted Lens  
Light Source: -  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2771.0 lumens  
Efficiency: N/A  
Efficacy: 68.3 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): 40.6  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: 0.9789  
Total Harmonic Distortion (THDi): 0.074  
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°	1535	1535	1535
5°	1541	1516	1525
10°	1530	1491	1479
15°	1512	1447	1406
20°	1488	1384	1314
25°	1463	1312	1226
30°	1428	1239	1114
35°	1395	1159	1014
40°	1360	1076	900
45°	1321	983	796
50°	1280	888	694
55°	1238	787	596
60°	1189	681	495
65°	1134	572	450
70°	1069	471	414
75°	988	430	387
80°	872	383	352
85°	685	302	302

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 1321 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	126.3	4.6
10°-20°	346.7	12.5
20°-30°	486.7	17.6
30°-40°	530.5	19.1
40°-50°	487.6	17.6
50°-60°	382.9	13.8
60°-70°	249.3	9.0
70°-80°	128.3	4.6
80°-90°	32.8	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°	959.6	34.6
0°-40°	1490.1	53.8
0°-60°	2360.7	85.2
0°-90°	2771.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2771.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1347	1347	1347	1347	1347	
5°	1347	1341	1325	1336	1333	128
15°	1282	1268	1227	1204	1191	361
25°	1163	1124	1044	994	975	535
35°	1002	940	833	756	729	627
45°	819	738	610	523	494	633
55°	623	528	396	323	300	557
65°	421	322	212	171	167	417
75°	224	139	98	89	88	237
85°	52	27	23	23	23	63
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1347.4	1347.4	1347.4	1347.4	1347.4
2.5°	1353.5	1347.4	1333.9	1346.2	1343.7
5°	1347.4	1341.2	1325.4	1336.4	1332.8
7.5°	1336.4	1329.1	1312.1	1316.8	1310.8
10°	1321.8	1313.2	1288.8	1285.1	1277.9
12.5°	1303.5	1292.5	1259.5	1252.2	1238.8
15°	1281.5	1268.1	1226.7	1203.5	1191.4
17.5°	1255.9	1236.4	1185.1	1158.4	1138.8
20°	1226.7	1202.2	1141.2	1110.8	1083.9
22.5°	1195.0	1166.9	1096.1	1054.7	1036.5
25°	1163.2	1124.2	1043.7	993.8	975.4
27.5°	1125.5	1083.9	995.0	937.7	909.5
30°	1085.3	1038.8	941.2	879.1	846.2
32.5°	1046.2	990.1	890.1	817.0	786.4
35°	1002.4	940.1	832.8	756.0	729.1
37.5°	959.7	892.5	779.1	695.0	664.6
40°	914.5	841.4	723.1	636.5	604.8
42.5°	868.1	790.1	667.0	576.7	546.3
45°	819.4	737.7	609.7	523.1	493.8
47.5°	773.1	686.6	554.9	468.2	441.4
50°	721.8	635.3	501.1	417.0	391.4
52.5°	671.8	580.4	450.0	369.4	346.3
55°	623.1	528.0	396.3	323.1	300.0
57.5°	573.1	475.6	348.7	280.4	261.0
60°	521.8	424.3	298.7	236.6	217.1
62.5°	472.0	374.4	256.0	197.6	187.9
65°	420.7	321.8	212.1	170.7	167.0
67.5°	372.0	273.1	170.7	150.0	146.3
70°	320.7	225.6	141.4	129.3	124.3
72.5°	272.0	181.7	118.3	108.6	106.1
75°	224.3	139.0	97.6	89.0	87.9
77.5°	176.9	98.7	76.9	72.0	69.4
80°	132.8	70.7	58.4	53.7	53.7
82.5°	92.7	47.6	40.3	37.7	37.7
85°	52.4	26.8	23.1	23.1	23.1
87.5°	19.6	9.7	9.7	8.6	8.6
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	12.72	14.25	13.09	14.56	14.87	8.68	10.21	9.05	10.52	10.83
	3H	14.49	15.86	14.87	16.18	16.55	9.95	11.32	10.33	11.64	12.00
	4H	15.16	16.44	15.56	16.79	17.16	10.45	11.73	10.85	12.08	12.46
	6H	15.65	16.83	16.06	17.20	17.59	10.83	12.02	11.25	12.38	12.77
	8H	15.81	16.94	16.24	17.33	17.73	10.96	12.08	11.38	12.47	12.87
	12H	15.91	16.99	16.34	17.37	17.80	11.04	12.12	11.47	12.50	12.93
4H	2H	12.83	14.11	13.23	14.46	14.84	9.38	10.66	9.78	11.01	11.39
	3H	14.76	15.83	15.17	16.22	16.63	10.82	11.89	11.23	12.29	12.69
	4H	15.51	16.47	15.94	16.88	17.32	11.42	12.38	11.86	12.80	13.23
	6H	16.10	16.94	16.56	17.38	17.84	11.91	12.74	12.37	13.19	13.65
	8H	16.32	17.10	16.78	17.54	18.01	12.07	12.85	12.54	13.29	13.76
	12H	16.47	17.17	16.95	17.64	18.12	12.19	12.88	12.67	13.36	13.83
8H	4H	15.54	16.31	16.00	16.76	17.22	11.78	12.55	12.24	13.00	13.47
	6H	16.17	16.82	16.67	17.31	17.78	12.36	13.01	12.86	13.50	13.98
	8H	16.42	17.00	16.94	17.51	18.00	12.58	13.16	13.10	13.67	14.16
	12H	16.63	17.14	17.14	17.63	18.19	12.76	13.27	13.27	13.76	14.33
12H	4H	15.52	16.22	16.00	16.69	17.16	11.82	12.52	12.30	12.99	13.46
	6H	16.15	16.73	16.67	17.24	17.73	12.43	13.00	12.94	13.51	14.00
	8H	16.44	16.95	16.95	17.44	18.01	12.70	13.21	13.21	13.70	14.27