

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: P929859

Luminaire Tested: DFN2DS-4P3F0-030DS830-FLL

Issue Date: 11/20/2024

**Test Information**

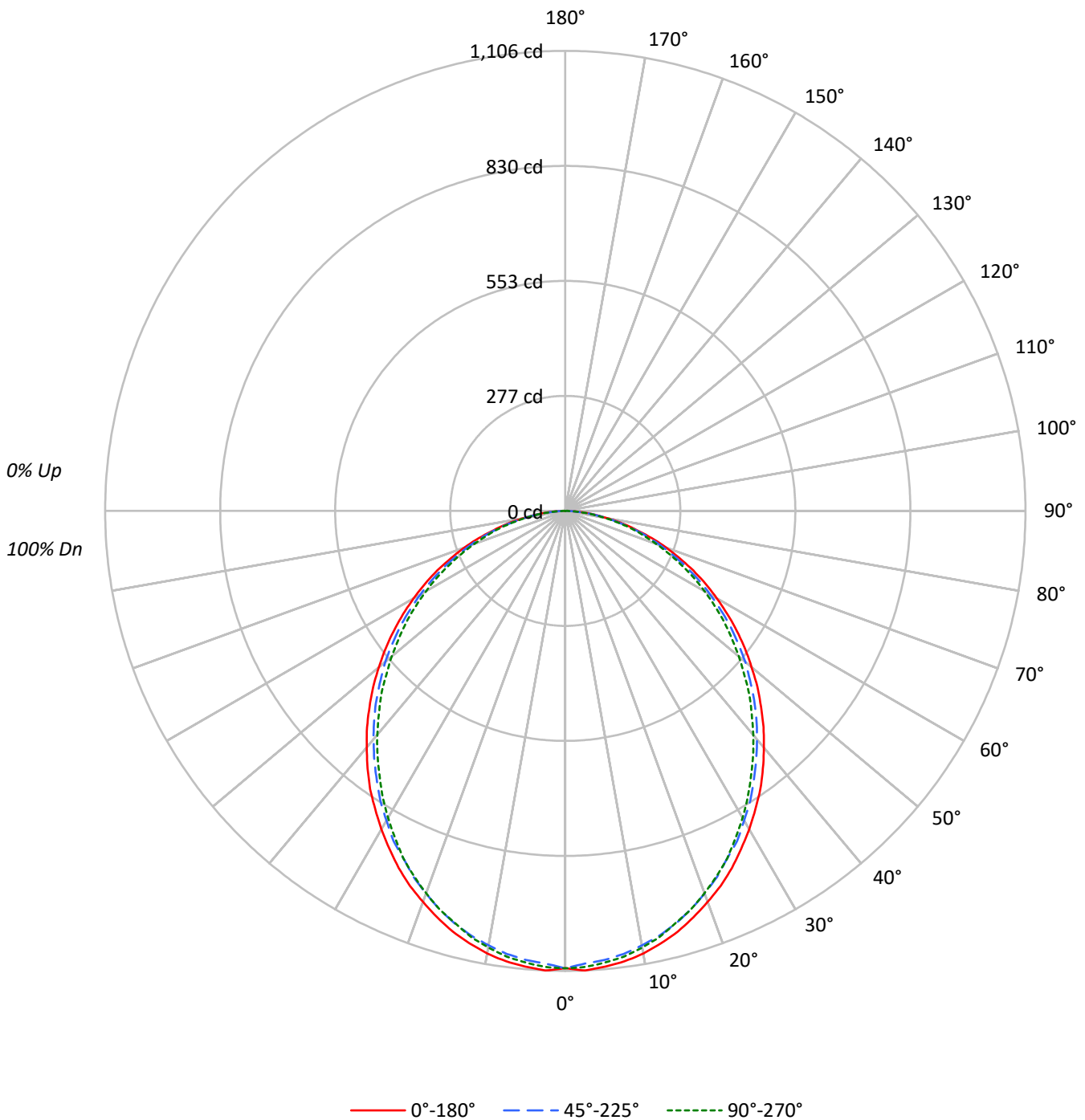
Test Method: LM-79-2019  
Report Number: P929859  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P333812)  
Test Lab: INNOVATION CENTER  
Issue Date: 11/20/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: DFN2DS-4P3F0-030DS830-FLL  
Description: 3 foot, 90deg - 4way Define Geo, with Direct Frosted Lens  
Light Source: -  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2797.8 lumens  
Efficiency: N/A  
Efficacy: 96.8 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29  
Luminous Opening: Rectangular (W 3.07' x L: 3.07' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 28.9  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: 0.9933  
Total Harmonic Distortion (THDi): 0.066  
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°	1253	1253	1253
5°	1258	1240	1247
10°	1251	1227	1233
15°	1235	1211	1210
20°	1213	1187	1186
25°	1191	1158	1158
30°	1163	1131	1121
35°	1137	1099	1083
40°	1104	1066	1046
45°	1072	1034	1009
50°	1037	1001	966
55°	1000	962	927
60°	959	916	882
65°	915	870	830
70°	860	814	775
75°	782	749	731
80°	694	673	639
85°	566	540	484

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 1072 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	103.5	3.7
10°-20°	291.2	10.4
20°-30°	427.9	15.3
30°-40°	497.0	17.8
40°-50°	496.4	17.7
50°-60°	432.9	15.5
60°-70°	320.0	11.4
70°-80°	181.1	6.5
80°-90°	47.8	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°	822.6	29.4
0°-40°	1319.7	47.2
0°-60°	2249.0	80.4
0°-90°	2797.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2797.8	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1100	1100	1100	1100	1100	
5°	1100	1096	1084	1092	1090	104
15°	1047	1040	1027	1031	1026	295
25°	947	939	921	923	921	436
35°	817	807	790	784	778	510
45°	665	658	642	630	626	513
55°	503	497	484	472	466	450
65°	340	333	322	313	308	336
75°	178	176	170	164	166	190
85°	43	42	41	38	37	51
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1099.6	1099.6	1099.6	1099.6	1099.6
2.5°	1106.0	1100.7	1089.0	1099.6	1097.6
5°	1099.6	1095.5	1083.8	1092.2	1090.2
7.5°	1092.2	1085.9	1074.3	1082.8	1080.7
10°	1080.7	1073.2	1060.6	1069.0	1065.9
12.5°	1064.7	1058.4	1045.8	1051.0	1048.9
15°	1046.8	1040.5	1026.7	1030.9	1025.6
17.5°	1024.5	1018.3	1004.5	1009.7	1004.5
20°	1000.2	993.9	979.1	982.2	978.1
22.5°	976.0	966.5	952.6	952.6	950.5
25°	947.4	939.0	921.0	923.1	921.0
27.5°	915.6	908.2	894.5	891.4	886.1
30°	884.0	875.5	859.7	856.5	852.2
32.5°	850.2	843.8	826.9	820.5	816.2
35°	817.4	806.8	789.9	783.5	778.2
37.5°	780.4	770.8	753.9	746.4	741.2
40°	742.3	733.8	716.9	707.4	703.2
42.5°	705.3	696.8	679.9	669.3	663.0
45°	665.1	657.7	641.8	630.2	626.0
47.5°	626.0	618.6	601.7	590.0	583.7
50°	584.7	579.4	564.6	549.8	544.6
52.5°	544.6	537.1	523.5	511.8	504.3
55°	503.4	497.0	484.3	471.7	466.4
57.5°	462.1	456.8	443.0	430.3	426.1
60°	420.8	416.6	401.9	390.2	387.1
62.5°	380.7	373.2	362.7	352.1	347.9
65°	339.5	333.1	322.5	313.0	307.8
67.5°	297.2	291.8	282.3	275.0	270.7
70°	258.0	253.8	244.3	236.8	232.7
72.5°	217.9	213.6	208.3	200.9	197.8
75°	177.6	175.6	170.2	163.9	166.1
77.5°	141.7	137.4	135.3	132.2	129.1
80°	105.8	104.7	102.5	99.4	97.3
82.5°	71.9	71.9	70.9	66.6	66.6
85°	43.3	42.3	41.3	38.1	37.0
87.5°	19.0	17.0	14.8	11.7	10.6
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	12.07	13.68	12.43	13.99	14.31	11.62	13.23	11.99	13.55	13.86
	3H	13.82	15.27	14.19	15.60	15.96	13.33	14.78	13.70	15.11	15.47
	4H	14.46	15.83	14.86	16.18	16.56	13.97	15.34	14.37	15.69	16.06
	6H	14.93	16.20	15.34	16.57	16.96	14.43	15.70	14.84	16.06	16.46
	8H	15.08	16.29	15.50	16.68	17.07	14.57	15.78	15.00	16.17	16.57
	12H	15.17	16.33	15.60	16.71	17.14	14.65	15.81	15.08	16.20	16.62
4H	2H	12.63	14.00	13.03	14.34	14.72	12.27	13.64	12.67	13.99	14.37
	3H	14.60	15.75	15.01	16.15	16.55	14.20	15.34	14.60	15.74	16.14
	4H	15.38	16.41	15.81	16.83	17.26	14.95	15.99	15.39	16.40	16.84
	6H	15.98	16.88	16.43	17.32	17.78	15.54	16.45	16.00	16.89	17.34
	8H	16.16	17.01	16.63	17.45	17.92	15.73	16.57	16.19	17.02	17.48
	12H	16.30	17.06	16.78	17.53	18.00	15.84	16.60	16.32	17.08	17.55
8H	4H	15.65	16.50	16.11	16.94	17.41	15.28	16.12	15.74	16.57	17.03
	6H	16.37	17.07	16.86	17.56	18.03	15.99	16.69	16.48	17.18	17.65
	8H	16.63	17.26	17.14	17.76	18.25	16.23	16.86	16.74	17.37	17.86
	12H	16.83	17.38	17.33	17.87	18.44	16.41	16.97	16.92	17.46	18.02
12H	4H	15.68	16.44	16.16	16.91	17.38	15.31	16.07	15.79	16.55	17.02
	6H	16.41	17.04	16.92	17.55	18.04	16.04	16.68	16.55	17.18	17.67
	8H	16.73	17.28	17.23	17.77	18.34	16.35	16.91	16.85	17.40	17.96