

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: P930459

Luminaire Tested: DFN2DS-PN2F0-040DS850-FLL

Issue Date: 11/20/2024

**Test Information**

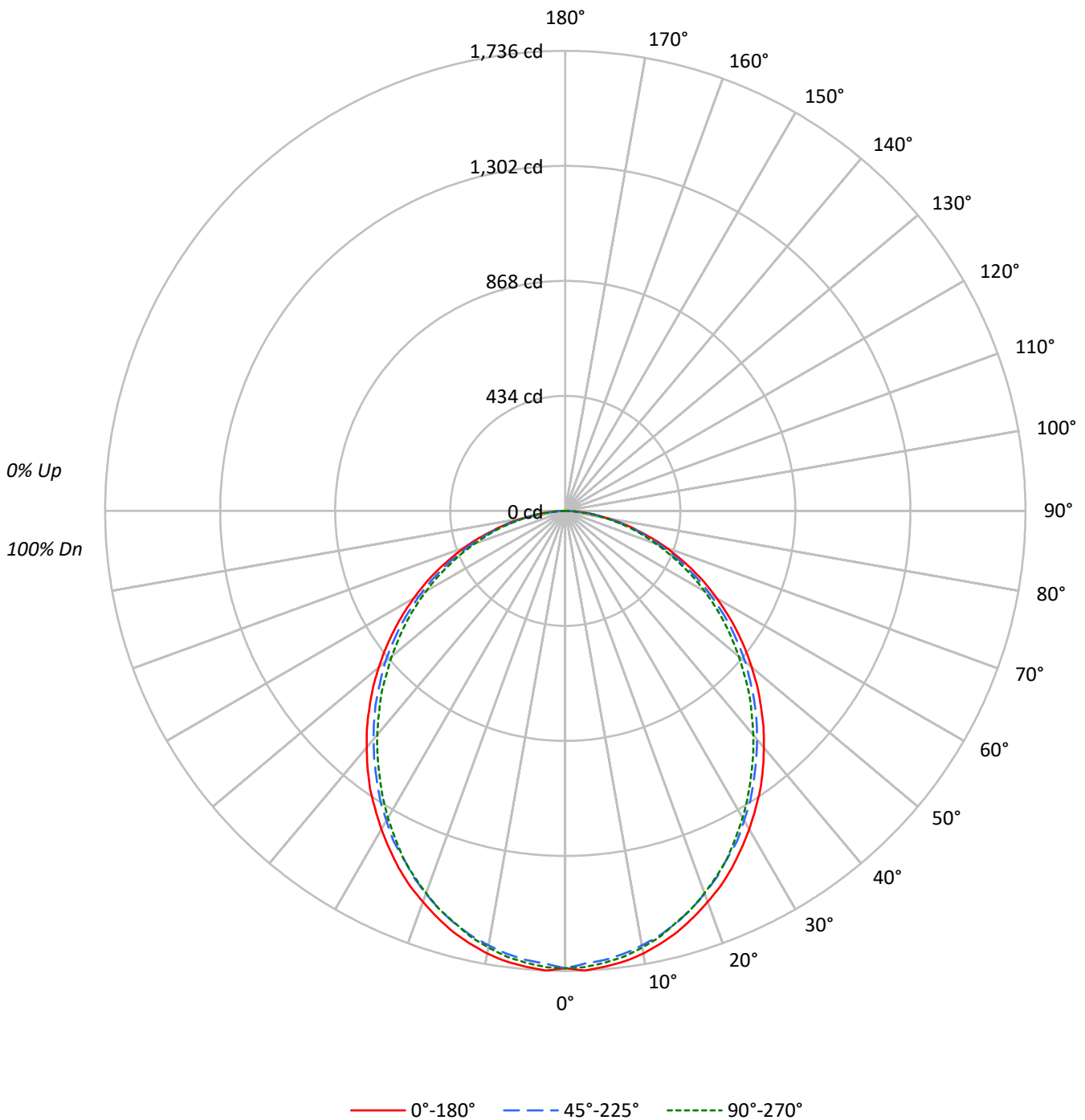
Test Method: LM-79-2019  
Report Number: P930459  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P333812)  
Test Lab: INNOVATION CENTER  
Issue Date: 11/20/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: DFN2DS-PN2F0-040DS850-FLL  
Description: 2 foot, Pentagon Define Geo, with Direct Frosted Lens  
Light Source: -  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4391.7 lumens  
Efficiency: N/A  
Efficacy: 104.1 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29  
Luminous Opening: Rectangular (W 2.29' x L: 2.17' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 42.2  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: 0.9613  
Total Harmonic Distortion (THDi): 0.083  
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°	3738	3738	3738
5°	3753	3699	3721
10°	3731	3661	3679
15°	3684	3614	3610
20°	3619	3543	3539
25°	3554	3455	3455
30°	3470	3375	3346
35°	3392	3278	3230
40°	3294	3181	3121
45°	3198	3086	3010
50°	3093	2986	2880
55°	2984	2871	2764
60°	2861	2732	2632
65°	2731	2595	2476
70°	2565	2428	2313
75°	2333	2236	2181
80°	2070	2007	1905
85°	1690	1610	1444

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 3198 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	162.5	3.7
10°-20°	457.1	10.4
20°-30°	671.7	15.3
30°-40°	780.2	17.8
40°-50°	779.2	17.7
50°-60°	679.5	15.5
60°-70°	502.3	11.4
70°-80°	284.2	6.5
80°-90°	75.0	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°	1291.3	29.4
0°-40°	2071.5	47.2
0°-60°	3530.2	80.4
0°-90°	4391.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4391.7	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1726	1726	1726	1726	1726	
5°	1726	1720	1701	1714	1711	164
15°	1643	1633	1612	1618	1610	463
25°	1487	1474	1446	1449	1446	684
35°	1283	1266	1240	1230	1222	801
45°	1044	1032	1007	989	983	806
55°	790	780	760	740	732	706
65°	533	523	506	491	483	527
75°	279	276	267	257	261	298
85°	68	66	65	60	58	80
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1726.0	1726.0	1726.0	1726.0	1726.0
2.5°	1736.1	1727.8	1709.5	1726.0	1722.9
5°	1726.0	1719.5	1701.2	1714.4	1711.3
7.5°	1714.4	1704.5	1686.2	1699.7	1696.3
10°	1696.3	1684.7	1664.8	1678.0	1673.0
12.5°	1671.3	1661.4	1641.5	1649.9	1646.4
15°	1643.1	1633.2	1611.6	1618.3	1610.0
17.5°	1608.3	1598.4	1576.8	1585.0	1576.8
20°	1570.0	1560.1	1537.0	1541.8	1535.4
22.5°	1532.0	1517.0	1495.4	1495.4	1492.0
25°	1487.1	1473.9	1445.7	1448.9	1445.7
27.5°	1437.3	1425.6	1404.2	1399.2	1391.0
30°	1387.6	1374.3	1349.4	1344.4	1337.8
32.5°	1334.5	1324.6	1298.0	1288.0	1281.2
35°	1283.0	1266.5	1239.9	1229.9	1221.6
37.5°	1224.9	1209.9	1183.3	1171.8	1163.5
40°	1165.2	1151.8	1125.2	1110.4	1103.8
42.5°	1107.1	1093.7	1067.3	1050.6	1040.7
45°	1044.0	1032.5	1007.4	989.3	982.6
47.5°	982.6	970.9	944.4	926.1	916.3
50°	917.8	909.5	886.3	863.0	854.7
52.5°	854.7	843.2	821.7	803.4	791.7
55°	790.2	780.1	760.2	740.3	732.1
57.5°	725.3	717.1	695.3	675.5	668.8
60°	660.5	654.0	630.8	612.5	607.5
62.5°	597.5	585.9	569.4	552.7	546.1
65°	532.9	522.8	506.3	491.3	483.1
67.5°	466.4	458.0	443.3	431.6	425.0
70°	405.0	398.4	383.4	371.7	365.2
72.5°	342.0	335.3	327.0	315.4	310.4
75°	278.8	275.6	267.2	257.3	260.6
77.5°	222.4	215.7	212.4	207.4	202.5
80°	166.0	164.2	160.9	156.0	152.7
82.5°	112.9	112.9	111.3	104.6	104.6
85°	68.0	66.4	64.8	59.7	58.1
87.5°	29.9	26.6	23.3	18.3	16.5
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	15.86	17.48	16.23	17.79	18.10	15.42	17.03	15.78	17.34	17.66
	3H	17.61	19.07	17.99	19.40	19.76	17.12	18.58	17.50	18.90	19.26
	4H	18.26	19.63	18.66	19.98	20.35	17.77	19.13	18.16	19.48	19.86
	6H	18.73	20.00	19.14	20.36	20.75	18.23	19.50	18.64	19.86	20.25
	8H	18.87	20.08	19.30	20.47	20.87	18.37	19.58	18.79	19.97	20.37
	12H	18.96	20.12	19.39	20.50	20.93	18.45	19.61	18.88	19.99	20.42
4H	2H	16.42	17.79	16.82	18.14	18.52	16.07	17.44	16.47	17.79	18.16
	3H	18.40	19.55	18.81	19.94	20.34	17.99	19.14	18.40	19.54	19.94
	4H	19.18	20.21	19.61	20.63	21.06	18.75	19.79	19.18	20.20	20.64
	6H	19.77	20.68	20.23	21.12	21.57	19.34	20.25	19.79	20.69	21.14
	8H	19.96	20.81	20.42	21.25	21.72	19.52	20.37	19.98	20.81	21.28
	12H	20.09	20.85	20.57	21.33	21.80	19.64	20.40	20.12	20.88	21.35
8H	4H	19.45	20.30	19.91	20.74	21.20	19.08	19.92	19.54	20.36	20.83
	6H	20.16	20.87	20.66	21.36	21.83	19.78	20.49	20.28	20.97	21.45
	8H	20.42	21.05	20.93	21.56	22.05	20.03	20.66	20.54	21.17	21.65
	12H	20.62	21.18	21.13	21.67	22.23	20.21	20.77	20.72	21.26	21.82
12H	4H	19.48	20.24	19.96	20.71	21.18	19.11	19.87	19.59	20.35	20.82
	6H	20.21	20.84	20.72	21.35	21.83	19.84	20.47	20.35	20.98	21.47
	8H	20.52	21.08	21.03	21.57	22.13	20.15	20.70	20.65	21.19	21.75