

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: P929882

Luminaire Tested: DFN2DS-4P3F0-040DS840-RLL

Issue Date: 11/20/2024

**Test Information**

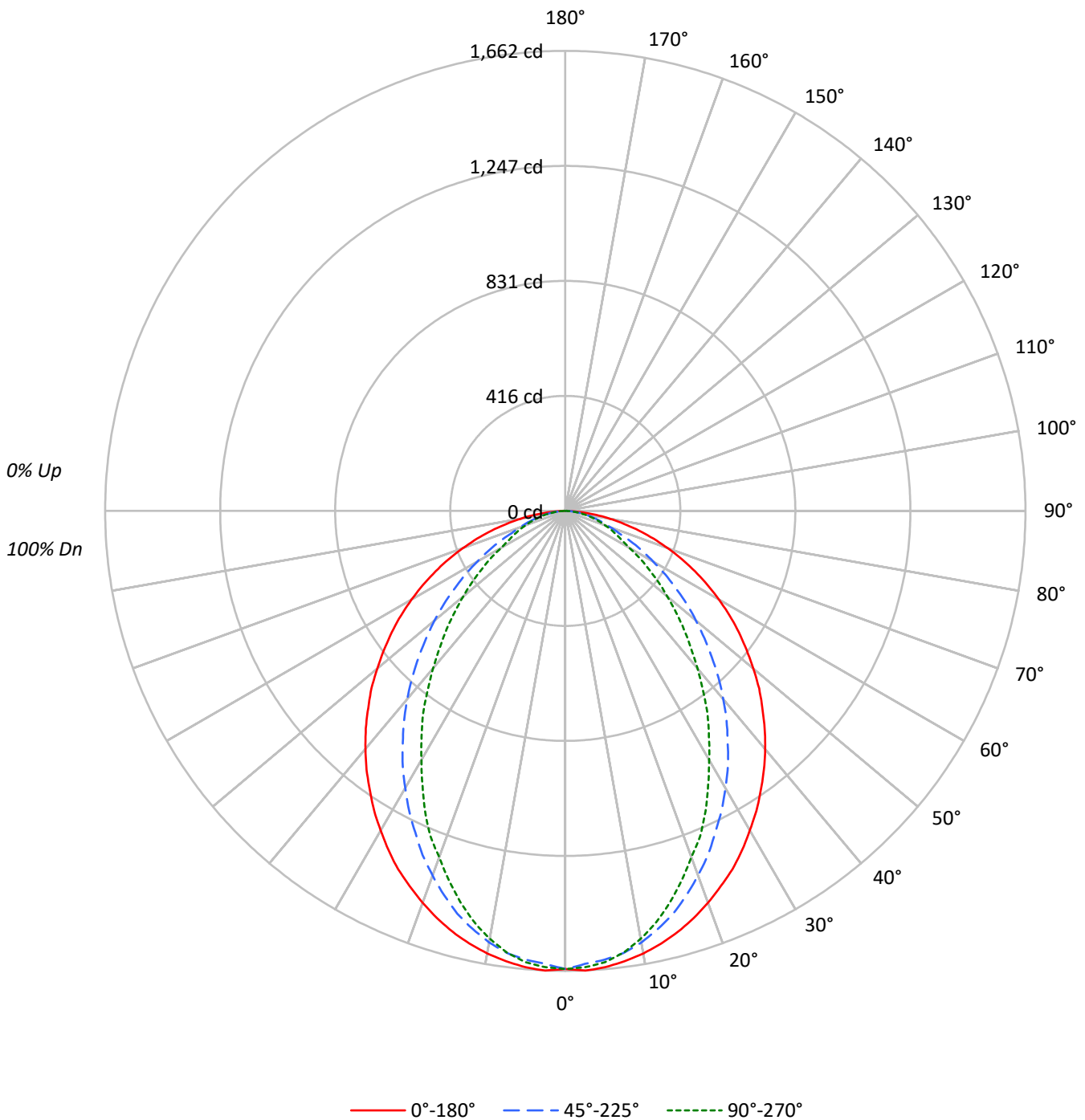
Test Method: LM-79-2019  
Report Number: P929882  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P333882)  
Test Lab: INNOVATION CENTER  
Issue Date: 11/20/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: DFN2DS-4P3F0-040DS840-RLL  
Description: 3 foot, 90deg - 4way Define Geo, with Direct 1in Regressed Frosted Lens  
Light Source: -  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3403.4 lumens  
Efficiency: N/A  
Efficacy: 83.8 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
RCR																				
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100	100	100
1	110	106	102	98	107	103	100	97	99	96	94	95	93	91	92	90	88	86	86	86
2	101	94	87	82	98	92	86	81	88	83	79	85	81	78	82	79	76	74	74	74
3	93	83	76	70	90	82	75	69	79	73	68	76	71	67	74	69	66	64	64	64
4	86	75	66	60	83	73	66	60	71	64	59	69	63	58	66	62	57	55	55	55
5	79	67	59	53	77	66	58	52	64	57	52	62	56	51	60	55	51	49	49	49
6	74	61	53	47	72	60	52	46	58	51	46	57	50	46	55	50	45	43	43	43
7	68	56	47	42	67	55	47	42	53	46	41	52	46	41	51	45	41	39	39	39
8	64	51	43	38	62	51	43	37	49	42	37	48	42	37	47	41	37	35	35	35
9	60	47	39	34	59	47	39	34	46	39	34	44	38	34	44	38	34	32	32	32
10	56	44	36	31	55	43	36	31	42	36	31	41	35	31	41	35	31	29	29	29

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

	0°	45°	90°
0°	1886	1886	1886
5°	1893	1862	1873
10°	1879	1832	1816
15°	1857	1777	1726
20°	1827	1700	1615
25°	1796	1612	1506
30°	1754	1521	1368
35°	1713	1423	1246
40°	1671	1321	1105
45°	1622	1207	977
50°	1572	1091	852
55°	1521	967	732
60°	1461	836	608
65°	1393	703	553
70°	1312	579	509
75°	1213	527	475
80°	1071	471	433
85°	842	371	371

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 1622 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	155.1	4.6
10°-20°	425.8	12.5
20°-30°	597.8	17.6
30°-40°	651.6	19.1
40°-50°	598.9	17.6
50°-60°	470.3	13.8
60°-70°	306.1	9.0
70°-80°	157.6	4.6
80°-90°	40.2	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°	1178.6	34.6
0°-40°	1830.2	53.8
0°-60°	2899.4	85.2
0°-90°	3403.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3403.4	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1655	1655	1655	1655	1655	
5°	1655	1647	1628	1641	1637	157
15°	1574	1558	1507	1478	1463	444
25°	1429	1381	1282	1221	1198	657
35°	1231	1155	1023	928	896	771
45°	1006	906	749	642	606	777
55°	765	648	487	397	368	684
65°	517	395	261	210	205	512
75°	276	171	120	109	108	291
85°	64	33	28	28	28	77
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1654.9	1654.9	1654.9	1654.9	1654.9
2.5°	1662.4	1654.9	1638.3	1653.5	1650.3
5°	1654.9	1647.3	1627.8	1641.3	1636.9
7.5°	1641.3	1632.4	1611.5	1617.3	1609.9
10°	1623.4	1612.9	1583.0	1578.4	1569.6
12.5°	1601.0	1587.5	1546.9	1538.0	1521.5
15°	1574.0	1557.5	1506.6	1478.2	1463.3
17.5°	1542.5	1518.5	1455.6	1422.7	1398.7
20°	1506.6	1476.6	1401.7	1364.4	1331.3
22.5°	1467.7	1433.2	1346.2	1295.4	1273.1
25°	1428.7	1380.8	1281.9	1220.6	1198.0
27.5°	1382.4	1331.3	1222.0	1151.7	1117.1
30°	1332.9	1275.9	1156.1	1079.8	1039.3
32.5°	1285.0	1216.0	1093.3	1003.4	965.9
35°	1231.1	1154.7	1022.9	928.5	895.5
37.5°	1178.7	1096.2	957.0	853.6	816.2
40°	1123.2	1033.4	888.1	781.8	742.8
42.5°	1066.3	970.5	819.2	708.3	671.0
45°	1006.4	906.0	748.8	642.4	606.5
47.5°	949.5	843.2	681.5	575.1	542.1
50°	886.6	780.3	615.5	512.1	480.8
52.5°	825.1	712.8	552.7	453.8	425.3
55°	765.3	648.4	486.7	396.9	368.5
57.5°	703.9	584.1	428.3	344.4	320.5
60°	640.9	521.1	366.9	290.6	266.7
62.5°	579.7	459.9	314.4	242.6	230.7
65°	516.7	395.3	260.6	209.7	205.1
67.5°	456.9	335.4	209.7	184.2	179.7
70°	393.9	277.1	173.7	158.8	152.7
72.5°	334.0	223.1	145.2	133.3	130.3
75°	275.5	170.7	119.8	109.3	107.9
77.5°	217.2	121.2	94.4	88.4	85.3
80°	163.2	86.9	71.8	66.0	66.0
82.5°	113.8	58.5	49.4	46.3	46.3
85°	64.4	32.9	28.4	28.4	28.4
87.5°	24.0	11.9	11.9	10.5	10.5
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	13.44	14.96	13.80	15.27	15.59	9.40	10.92	9.76	11.23	11.55
	3H	15.20	16.57	15.58	16.90	17.26	10.66	12.03	11.04	12.36	12.72
	4H	15.87	17.15	16.27	17.50	17.88	11.17	12.45	11.57	12.80	13.17
	6H	16.36	17.54	16.77	17.91	18.30	11.55	12.73	11.96	13.10	13.49
	8H	16.52	17.65	16.95	18.04	18.44	11.67	12.80	12.10	13.19	13.59
	12H	16.63	17.71	17.06	18.09	18.52	11.75	12.83	12.18	13.21	13.64
4H	2H	13.54	14.82	13.94	15.17	15.55	10.09	11.37	10.49	11.72	12.10
	3H	15.48	16.54	15.89	16.94	17.34	11.54	12.60	11.95	13.00	13.40
	4H	16.23	17.18	16.66	17.60	18.04	12.14	13.09	12.57	13.51	13.95
	6H	16.82	17.65	17.27	18.09	18.55	12.63	13.46	13.08	13.90	14.36
	8H	17.03	17.81	17.50	18.25	18.72	12.79	13.56	13.25	14.01	14.48
	12H	17.19	17.88	17.67	18.36	18.83	12.90	13.60	13.39	14.08	14.55
8H	4H	16.25	17.03	16.71	17.47	17.94	12.49	13.27	12.95	13.71	14.18
	6H	16.89	17.53	17.38	18.02	18.50	13.08	13.72	13.57	14.21	14.69
	8H	17.14	17.71	17.65	18.22	18.71	13.30	13.88	13.81	14.38	14.87
	12H	17.34	17.85	17.85	18.34	18.91	13.48	13.99	13.99	14.48	15.04
12H	4H	16.23	16.93	16.72	17.41	17.88	12.53	13.23	13.02	13.71	14.18
	6H	16.87	17.45	17.38	17.96	18.44	13.14	13.72	13.66	14.23	14.72
	8H	17.15	17.66	17.66	18.15	18.72	13.41	13.92	13.92	14.42	14.98