

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: P929911

Luminaire Tested: DFN2DS-4P3F0-050DS950-FLL

Issue Date: 11/20/2024

**Test Information**

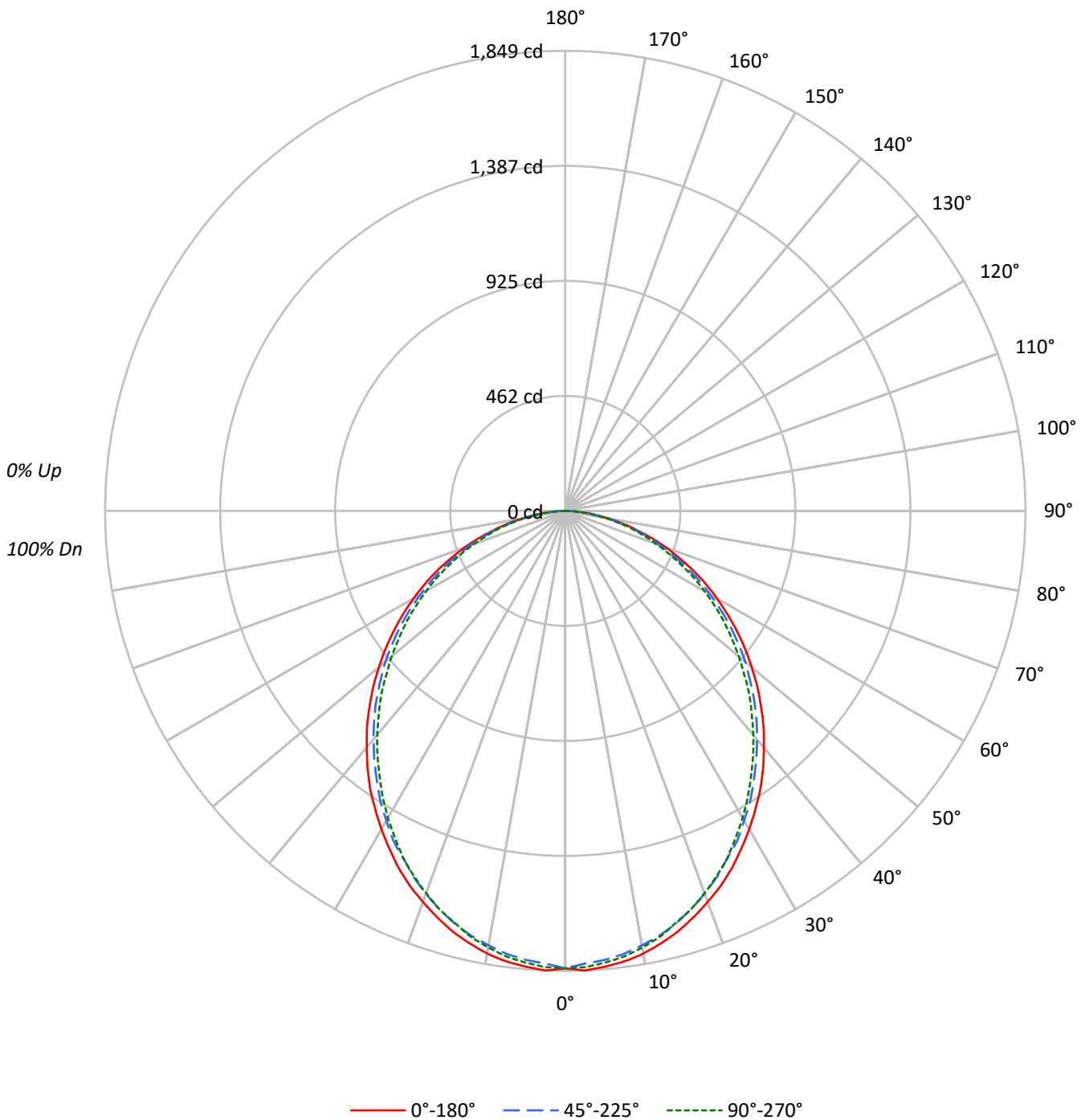
Test Method: LM-79-2019  
Report Number: P929911  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P333812)  
Test Lab: INNOVATION CENTER  
Issue Date: 11/20/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: DFN2DS-4P3F0-050DS950-FLL  
Description: 3 foot, 90deg - 4way Define Geo, with Direct Frosted Lens  
Light Source: -  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4677.7 lumens  
Efficiency: N/A  
Efficacy: 90.3 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): 51.8  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: 0.9971  
Total Harmonic Distortion (THDi): 0.049  
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				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°	2095	2095	2095
5°	2103	2073	2085
10°	2091	2052	2062
15°	2065	2025	2023
20°	2028	1985	1983
25°	1992	1936	1936
30°	1945	1891	1875
35°	1901	1837	1810
40°	1846	1783	1749
45°	1792	1729	1687
50°	1733	1674	1614
55°	1672	1609	1549
60°	1604	1531	1475
65°	1531	1454	1387
70°	1437	1360	1296
75°	1307	1253	1222
80°	1161	1125	1067
85°	947	902	809

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 1792 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	173.0	3.7
10°-20°	486.9	10.4
20°-30°	715.5	15.3
30°-40°	831.0	17.8
40°-50°	830.0	17.7
50°-60°	723.7	15.5
60°-70°	535.0	11.4
70°-80°	302.7	6.5
80°-90°	79.9	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°	1375.4	29.4
0°-40°	2206.5	47.2
0°-60°	3760.2	80.4
0°-90°	4677.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4677.7	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1838	1838	1838	1838	1838	
5°	1838	1832	1812	1826	1823	175
15°	1750	1740	1717	1724	1715	493
25°	1584	1570	1540	1543	1540	729
35°	1367	1349	1321	1310	1301	853
45°	1112	1100	1073	1054	1047	858
55°	842	831	810	788	780	752
65°	568	557	539	523	514	561
75°	297	294	284	274	278	317
85°	72	71	69	64	62	85
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1838.5	1838.5	1838.5	1838.5	1838.5
2.5°	1849.2	1840.4	1820.9	1838.5	1835.2
5°	1838.5	1831.6	1812.0	1826.1	1822.8
7.5°	1826.1	1815.6	1796.2	1810.4	1806.8
10°	1806.8	1794.5	1773.3	1787.3	1782.1
12.5°	1780.2	1769.7	1748.5	1757.3	1753.7
15°	1750.1	1739.7	1716.6	1723.8	1714.9
17.5°	1713.0	1702.5	1679.5	1688.2	1679.5
20°	1672.4	1661.9	1637.1	1642.3	1635.4
22.5°	1631.8	1615.9	1592.8	1592.8	1589.2
25°	1584.0	1569.9	1539.9	1543.3	1539.9
27.5°	1530.9	1518.5	1495.7	1490.4	1481.6
30°	1478.0	1463.8	1437.3	1432.1	1425.0
32.5°	1421.4	1410.9	1382.5	1371.9	1364.8
35°	1366.6	1349.0	1320.6	1310.0	1301.2
37.5°	1304.7	1288.8	1260.4	1248.1	1239.3
40°	1241.2	1226.9	1198.5	1182.8	1175.7
42.5°	1179.3	1165.0	1136.8	1119.0	1108.5
45°	1112.1	1099.7	1073.0	1053.8	1046.6
47.5°	1046.6	1034.2	1006.0	986.4	975.9
50°	977.6	968.8	944.1	919.3	910.4
52.5°	910.4	898.0	875.2	855.7	843.3
55°	841.6	830.9	809.7	788.5	779.7
57.5°	772.5	763.7	740.7	719.5	712.3
60°	703.6	696.7	671.9	652.3	647.1
62.5°	636.5	624.1	606.4	588.7	581.6
65°	567.6	556.9	539.2	523.3	514.5
67.5°	496.9	487.9	472.1	459.7	452.6
70°	431.4	424.3	408.3	396.0	389.1
72.5°	364.3	357.1	348.3	335.9	330.7
75°	296.9	293.5	284.5	274.0	277.6
77.5°	236.9	229.7	226.2	220.9	215.7
80°	176.9	175.0	171.4	166.2	162.6
82.5°	120.2	120.2	118.5	111.4	111.4
85°	72.4	70.7	69.0	63.6	61.9
87.5°	31.8	28.4	24.8	19.5	17.7
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	13.85	15.46	14.22	15.78	16.09	13.41	15.02	13.77	15.33	15.65
	3H	15.60	17.06	15.98	17.38	17.74	15.11	16.57	15.49	16.89	17.25
	4H	16.25	17.62	16.65	17.97	18.34	15.75	17.12	16.15	17.47	17.85
	6H	16.72	17.99	17.13	18.35	18.74	16.22	17.48	16.63	17.85	18.24
	8H	16.86	18.07	17.29	18.46	18.86	16.36	17.57	16.78	17.96	18.36
	12H	16.95	18.11	17.38	18.49	18.92	16.44	17.60	16.87	17.98	18.41
4H	2H	14.41	15.78	14.81	16.13	16.51	14.06	15.43	14.46	15.78	16.15
	3H	16.39	17.53	16.80	17.93	18.33	15.98	17.13	16.39	17.53	17.93
	4H	17.16	18.20	17.60	18.61	19.05	16.74	17.78	17.17	18.19	18.63
	6H	17.76	18.67	18.22	19.11	19.56	17.33	18.23	17.78	18.67	19.13
	8H	17.95	18.80	18.41	19.24	19.70	17.51	18.36	17.97	18.80	19.27
	12H	18.08	18.84	18.56	19.32	19.79	17.63	18.39	18.11	18.87	19.34
8H	4H	17.44	18.28	17.90	18.73	19.19	17.06	17.91	17.52	18.35	18.82
	6H	18.15	18.85	18.65	19.34	19.82	17.77	18.47	18.26	18.96	19.44
	8H	18.41	19.04	18.92	19.55	20.03	18.02	18.65	18.53	19.16	19.64
	12H	18.61	19.17	19.12	19.66	20.22	18.20	18.76	18.70	19.25	19.81
12H	4H	17.46	18.22	17.94	18.70	19.17	17.10	17.86	17.58	18.33	18.80
	6H	18.20	18.83	18.71	19.34	19.82	17.83	18.46	18.34	18.97	19.45
	8H	18.51	19.07	19.02	19.56	20.12	18.13	18.69	18.64	19.18	19.74