

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: P929928

Luminaire Tested: DFN2DS-4P3F0-060DS940-RLL

Issue Date: 11/20/2024

**Test Information**

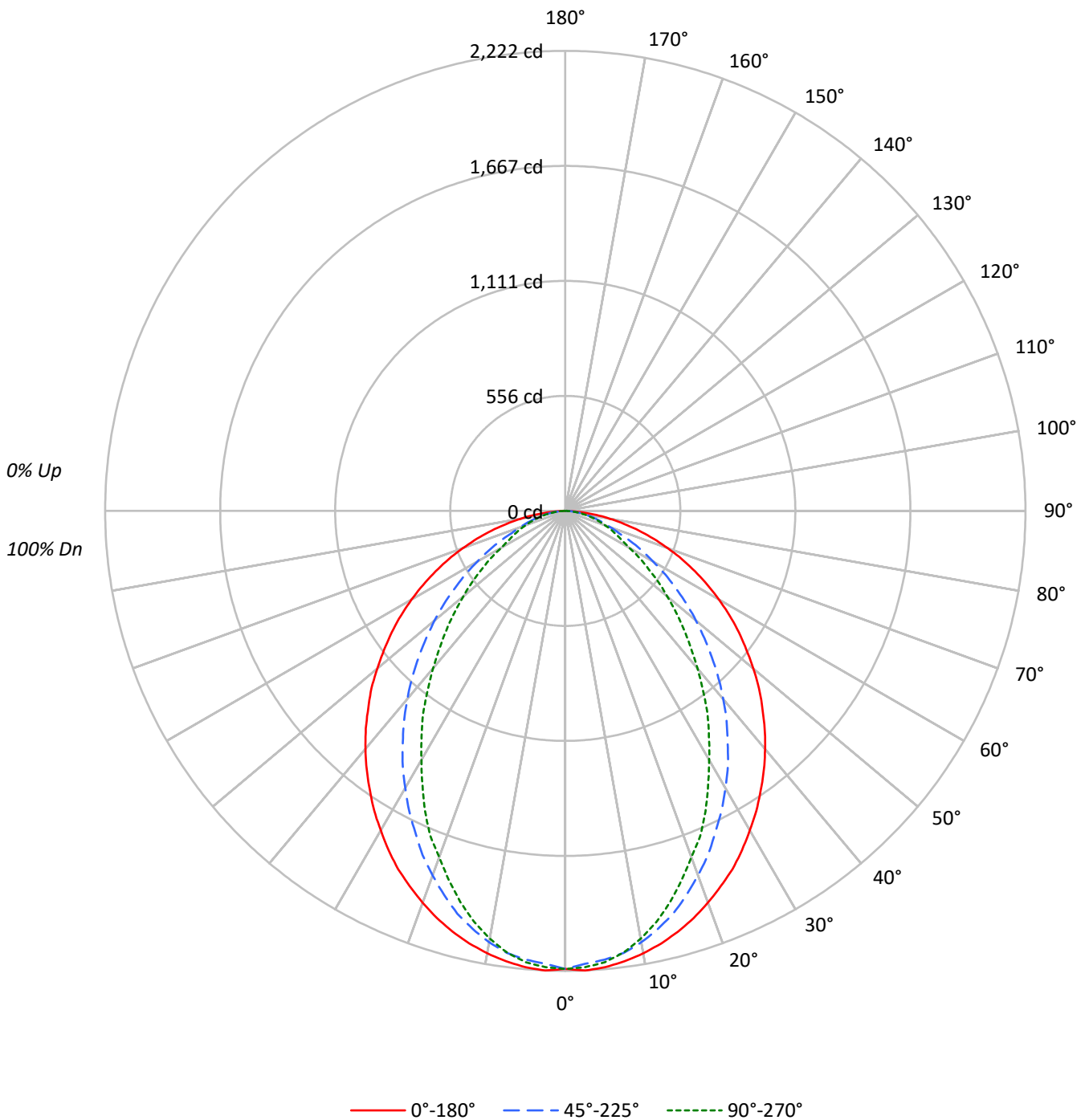
Test Method: LM-79-2019  
Report Number: P929928  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P333882)  
Test Lab: INNOVATION CENTER  
Issue Date: 11/20/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: DFN2DS-4P3F0-060DS940-RLL  
Description: 3 foot, 90deg - 4way Define Geo, with Direct 1in Regressed Frosted Lens  
Light Source: -  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4549.2 lumens  
Efficiency: N/A  
Efficacy: 70.0 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): 65  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: 0.9963  
Total Harmonic Distortion (THDi): 0.065  
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°	2521	2521	2521
5°	2530	2489	2503
10°	2511	2449	2428
15°	2482	2376	2307
20°	2442	2272	2158
25°	2401	2155	2014
30°	2345	2033	1828
35°	2289	1902	1665
40°	2233	1766	1477
45°	2168	1613	1306
50°	2101	1459	1139
55°	2032	1292	979
60°	1953	1118	812
65°	1862	939	739
70°	1754	773	680
75°	1622	705	635
80°	1431	630	578
85°	1124	497	497

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 2168 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	207.3	4.6
10°-20°	569.1	12.5
20°-30°	799.0	17.6
30°-40°	871.0	19.1
40°-50°	800.5	17.6
50°-60°	628.7	13.8
60°-70°	409.2	9.0
70°-80°	210.6	4.6
80°-90°	53.8	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°	1575.4	34.6
0°-40°	2446.4	53.8
0°-60°	3875.6	85.2
0°-90°	4549.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4549.2	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2212	2212	2212	2212	2212	
5°	2212	2202	2176	2194	2188	210
15°	2104	2082	2014	1976	1956	593
25°	1910	1846	1714	1632	1601	878
35°	1646	1543	1367	1241	1197	1030
45°	1345	1211	1001	859	811	1039
55°	1023	867	650	531	492	914
65°	691	528	348	280	274	685
75°	368	228	160	146	144	390
85°	86	44	38	38	38	103
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2212.0	2212.0	2212.0	2212.0	2212.0
2.5°	2222.0	2212.0	2189.9	2210.0	2206.0
5°	2212.0	2202.0	2175.9	2194.0	2188.0
7.5°	2194.0	2182.0	2154.0	2161.9	2151.9
10°	2169.9	2155.9	2116.0	2109.8	2097.9
12.5°	2140.0	2121.9	2067.7	2055.9	2033.8
15°	2103.9	2081.7	2013.8	1975.8	1955.8
17.5°	2061.9	2029.7	1945.6	1901.7	1869.6
20°	2013.8	1973.6	1873.6	1823.7	1779.5
22.5°	1961.8	1915.7	1799.5	1731.6	1701.6
25°	1909.8	1845.6	1713.5	1631.6	1601.4
27.5°	1847.8	1779.5	1633.4	1539.3	1493.3
30°	1781.7	1705.4	1545.3	1443.3	1389.2
32.5°	1717.5	1625.4	1461.5	1341.2	1291.1
35°	1645.6	1543.4	1367.3	1241.1	1197.0
37.5°	1575.5	1465.2	1279.2	1141.0	1091.0
40°	1501.3	1381.4	1187.0	1044.9	992.9
42.5°	1425.3	1297.2	1095.0	946.8	896.9
45°	1345.2	1211.0	1001.0	858.6	810.6
47.5°	1269.2	1127.1	910.9	768.6	724.7
50°	1185.1	1043.0	822.8	684.5	642.7
52.5°	1102.9	952.7	738.7	606.6	568.6
55°	1022.9	866.8	650.5	530.6	492.5
57.5°	940.9	780.7	572.6	460.5	428.3
60°	856.8	696.7	490.4	388.5	356.4
62.5°	774.8	614.7	420.3	324.3	308.4
65°	690.7	528.4	348.3	280.4	274.2
67.5°	610.6	448.3	280.4	246.2	240.2
70°	526.5	370.4	232.1	212.2	204.1
72.5°	446.4	298.2	194.1	178.2	174.1
75°	368.3	228.1	160.1	146.1	144.2
77.5°	290.3	162.1	126.1	118.1	114.1
80°	218.1	116.1	96.0	88.1	88.1
82.5°	152.1	78.1	66.0	62.0	62.0
85°	86.0	44.0	38.0	38.0	38.0
87.5°	32.1	16.0	16.0	14.0	14.0
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	14.45	15.97	14.81	16.28	16.60	10.41	11.93	10.77	12.24	12.56
	3H	16.21	17.58	16.59	17.91	18.27	11.67	13.04	12.05	13.37	13.73
	4H	16.88	18.16	17.28	18.51	18.89	12.17	13.46	12.57	13.80	14.18
	6H	17.37	18.55	17.78	18.92	19.31	12.56	13.74	12.97	14.11	14.50
	8H	17.53	18.66	17.96	19.05	19.45	12.68	13.81	13.11	14.20	14.60
	12H	17.64	18.71	18.07	19.10	19.53	12.76	13.84	13.19	14.22	14.65
4H	2H	14.55	15.83	14.95	16.18	16.56	11.10	12.38	11.50	12.73	13.11
	3H	16.48	17.55	16.89	17.95	18.35	12.55	13.61	12.96	14.01	14.41
	4H	17.23	18.19	17.67	18.61	19.04	13.15	14.10	13.58	14.52	14.96
	6H	17.83	18.66	18.28	19.10	19.56	13.63	14.47	14.09	14.91	15.37
	8H	18.04	18.82	18.50	19.26	19.73	13.80	14.57	14.26	15.02	15.48
	12H	18.19	18.89	18.68	19.37	19.84	13.91	14.61	14.39	15.09	15.56
8H	4H	17.26	18.04	17.72	18.48	18.95	13.50	14.28	13.96	14.72	15.19
	6H	17.90	18.54	18.39	19.03	19.51	14.09	14.73	14.58	15.22	15.70
	8H	18.15	18.72	18.66	19.23	19.72	14.31	14.88	14.82	15.39	15.88
	12H	18.35	18.86	18.86	19.35	19.92	14.49	15.00	15.00	15.49	16.05
12H	4H	17.24	17.94	17.72	18.42	18.89	13.54	14.24	14.02	14.72	15.19
	6H	17.88	18.45	18.39	18.96	19.45	14.15	14.73	14.66	15.24	15.72
	8H	18.16	18.67	18.67	19.16	19.73	14.42	14.93	14.93	15.42	15.99