

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: P930032

Luminaire Tested: DFN2DS-4P4F0-080DS930-RLL

Issue Date: 11/20/2024

Test Information

Test Method: LM-79-2019
Report Number: P930032
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-4P4F0-080DS930-RLL
Description: 4 foot, 90deg - 4way Define Geo, with Direct 1in Regressed Frosted Lens
Light Source: -
Ballast/Driver: -

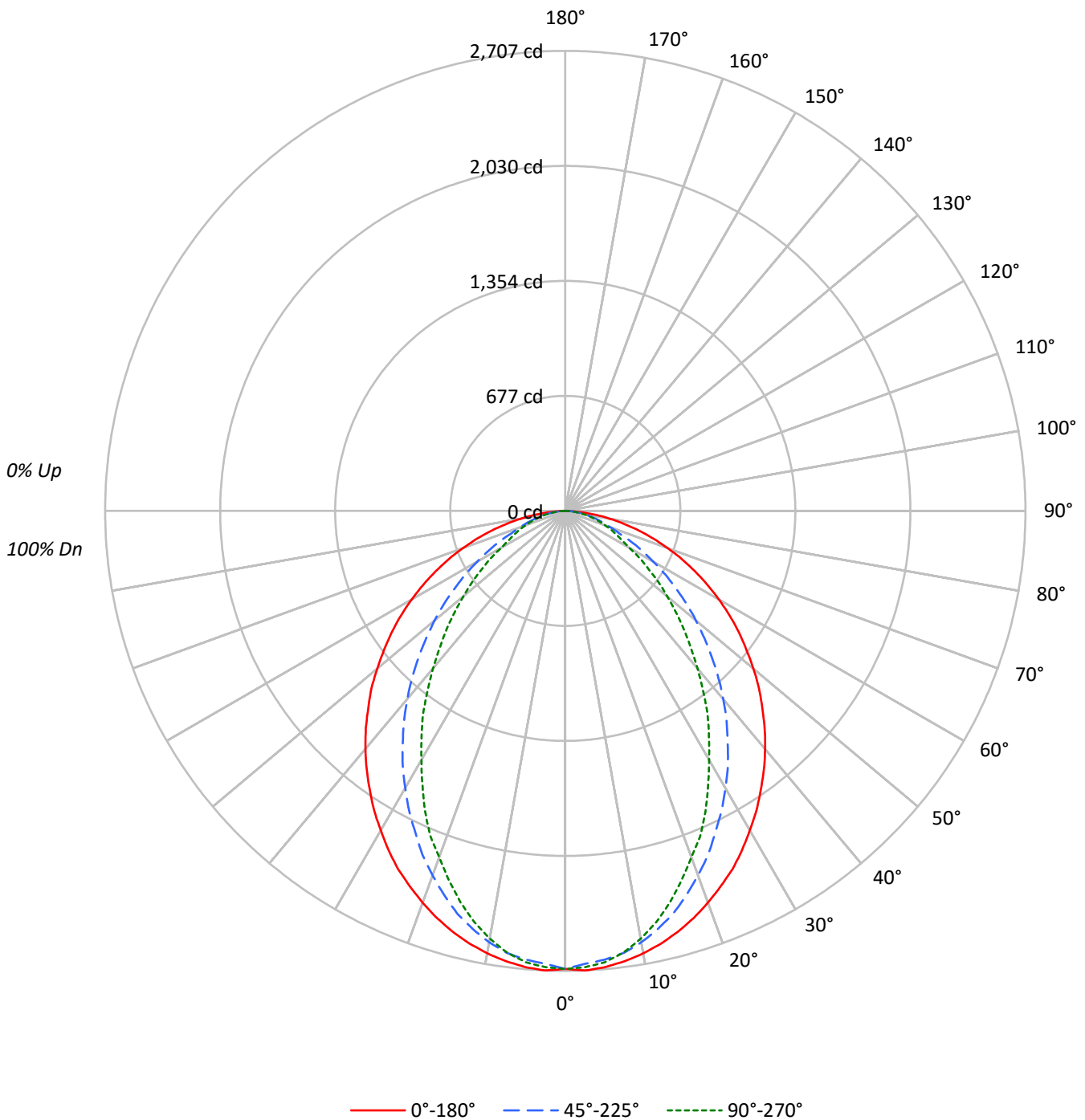
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5542.0 lumens
Efficiency: N/A
Efficacy: 64.2 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular (W 4.07' x L: 4.07' x H: 0')
CIE Type: Direct

Input Watts (W): 86.3
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				
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°	1748	1748	1748
5°	1755	1726	1736
10°	1741	1698	1684
15°	1721	1648	1600
20°	1694	1576	1497
25°	1665	1494	1396
30°	1626	1410	1268
35°	1588	1319	1155
40°	1549	1225	1024
45°	1504	1119	906
50°	1457	1012	790
55°	1409	896	679
60°	1354	775	563
65°	1292	651	513
70°	1217	536	472
75°	1125	489	440
80°	993	437	401
85°	780	345	345

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 1504 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	252.6	4.6
10°-20°	693.3	12.5
20°-30°	973.4	17.6
30°-40°	1061.0	19.1
40°-50°	975.2	17.6
50°-60°	765.9	13.8
60°-70°	498.5	9.0
70°-80°	256.6	4.6
80°-90°	65.5	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°	1919.2	34.6
0°-40°	2980.3	53.8
0°-60°	4721.4	85.2
0°-90°	5542.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5542.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2695	2695	2695	2695	2695	
5°	2695	2683	2651	2673	2666	256
15°	2563	2536	2453	2407	2383	722
25°	2326	2248	2088	1988	1951	1070
35°	2005	1880	1666	1512	1458	1255
45°	1639	1475	1219	1046	988	1266
55°	1246	1056	792	646	600	1113
65°	841	644	424	342	334	834
75°	449	278	195	178	176	475
85°	105	54	46	46	46	126
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2694.7	2694.7	2694.7	2694.7	2694.7
2.5°	2706.9	2694.7	2667.8	2692.4	2687.5
5°	2694.7	2682.6	2650.7	2672.7	2665.5
7.5°	2672.7	2658.2	2624.1	2633.7	2621.4
10°	2643.5	2626.4	2577.8	2570.3	2555.8
12.5°	2607.0	2585.0	2519.0	2504.5	2477.6
15°	2563.0	2536.1	2453.3	2407.0	2382.7
17.5°	2511.7	2472.7	2370.3	2316.7	2277.6
20°	2453.3	2404.4	2282.6	2221.8	2167.9
22.5°	2389.9	2333.8	2192.3	2109.5	2073.0
25°	2326.5	2248.4	2087.5	1987.6	1950.9
27.5°	2250.9	2167.9	1989.9	1875.3	1819.2
30°	2170.5	2077.6	1882.6	1758.4	1692.3
32.5°	2092.3	1980.1	1780.4	1633.9	1572.9
35°	2004.7	1880.2	1665.7	1512.1	1458.2
37.5°	1919.2	1785.0	1558.4	1389.9	1329.1
40°	1829.0	1682.8	1446.1	1272.9	1209.5
42.5°	1736.4	1580.4	1334.0	1153.5	1092.6
45°	1638.8	1475.3	1219.4	1046.1	987.6
47.5°	1546.2	1373.1	1109.7	936.4	882.8
50°	1443.7	1270.7	1002.4	833.9	782.9
52.5°	1343.6	1160.6	899.8	739.0	692.7
55°	1246.1	1055.9	792.5	646.3	600.0
57.5°	1146.2	951.1	697.6	561.0	521.8
60°	1043.7	848.7	597.4	473.2	434.2
62.5°	943.9	748.7	512.1	395.1	375.7
65°	841.4	643.7	424.3	341.6	334.0
67.5°	743.9	546.2	341.6	299.8	292.7
70°	641.4	451.3	282.8	258.4	248.7
72.5°	543.8	363.2	236.5	217.1	212.1
75°	448.7	277.9	195.1	178.0	175.7
77.5°	353.7	197.4	153.7	143.8	139.0
80°	265.7	141.6	117.0	107.3	107.3
82.5°	185.2	95.2	80.4	75.6	75.6
85°	104.8	53.5	46.3	46.3	46.3
87.5°	39.0	19.4	19.4	17.1	17.1
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	13.18	14.70	13.54	15.01	15.33	9.14	10.66	9.50	10.97	11.29
	3H	14.94	16.31	15.32	16.63	17.00	10.40	11.77	10.78	12.09	12.46
	4H	15.61	16.89	16.01	17.24	17.61	10.90	12.18	11.30	12.53	12.91
	6H	16.10	17.28	16.51	17.65	18.04	11.28	12.47	11.70	12.83	13.23
	8H	16.26	17.39	16.69	17.78	18.18	11.41	12.54	11.83	12.92	13.33
	12H	16.36	17.44	16.79	17.82	18.25	11.49	12.57	11.92	12.95	13.38
4H	2H	13.28	14.56	13.68	14.91	15.29	9.83	11.11	10.23	11.46	11.84
	3H	15.21	16.28	15.62	16.68	17.08	11.27	12.34	11.69	12.74	13.14
	4H	15.96	16.92	16.39	17.33	17.77	11.87	12.83	12.31	13.25	13.68
	6H	16.55	17.39	17.01	17.83	18.29	12.36	13.19	12.82	13.64	14.10
	8H	16.77	17.55	17.23	17.99	18.46	12.52	13.30	12.99	13.75	14.21
	12H	16.92	17.62	17.40	18.09	18.57	12.64	13.34	13.12	13.81	14.29
8H	4H	15.99	16.76	16.45	17.21	17.68	12.23	13.01	12.69	13.45	13.92
	6H	16.62	17.27	17.12	17.76	18.24	12.81	13.46	13.31	13.95	14.43
	8H	16.87	17.45	17.39	17.96	18.45	13.04	13.61	13.55	14.12	14.61
	12H	17.08	17.59	17.59	18.08	18.64	13.21	13.72	13.72	14.22	14.78
12H	4H	15.97	16.67	16.45	17.14	17.61	12.27	12.97	12.75	13.44	13.92
	6H	16.60	17.18	17.12	17.69	18.18	12.88	13.46	13.39	13.96	14.45
	8H	16.89	17.40	17.40	17.89	18.46	13.15	13.66	13.66	14.15	14.72