

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: P929986

Luminaire Tested: DFN2DS-4P4F0-060DS830-RLL

Issue Date: 11/20/2024

Test Information

Test Method: LM-79-2019
Report Number: P929986
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-4P4F0-060DS830-RLL
Description: 4 foot, 90deg - 4way Define Geo, with Direct 1in Regressed Frosted Lens
Light Source: -
Ballast/Driver: -

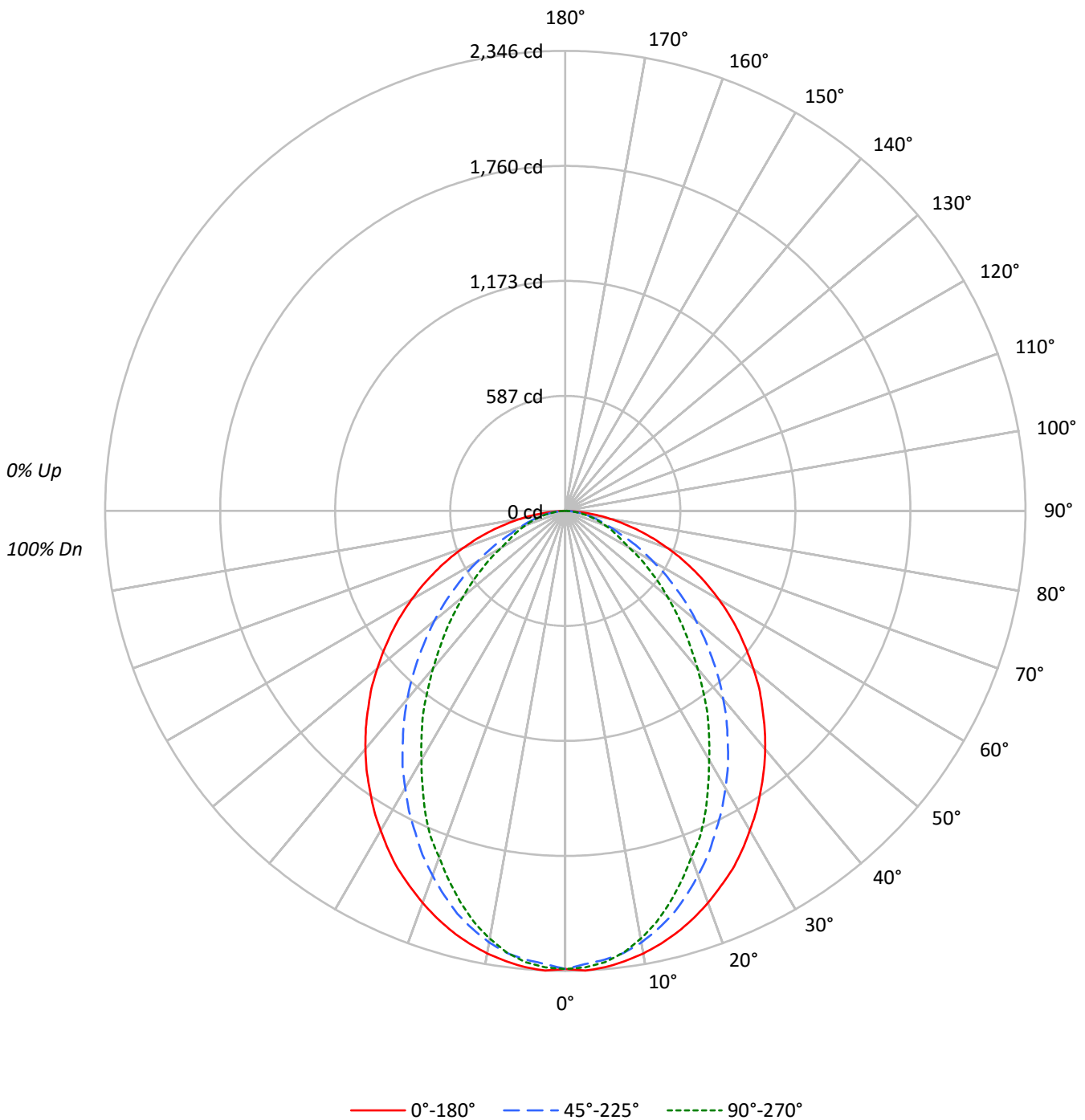
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4804.2 lumens
Efficiency: N/A
Efficacy: 77.5 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): 62
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9933
Total Harmonic Distortion (THDi): 0.066
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°	1515	1515	1515
5°	1521	1496	1505
10°	1510	1472	1459
15°	1492	1428	1387
20°	1468	1366	1297
25°	1444	1295	1211
30°	1410	1222	1099
35°	1376	1144	1001
40°	1343	1062	888
45°	1303	970	785
50°	1263	877	685
55°	1222	777	588
60°	1174	672	488
65°	1120	565	445
70°	1055	465	409
75°	975	424	382
80°	860	379	348
85°	676	298	298

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 1303 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	218.9	4.6
10°-20°	601.0	12.5
20°-30°	843.8	17.6
30°-40°	919.8	19.1
40°-50°	845.4	17.6
50°-60°	663.9	13.8
60°-70°	432.2	9.0
70°-80°	222.5	4.6
80°-90°	56.8	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°	1663.7	34.6
0°-40°	2583.5	53.8
0°-60°	4092.8	85.2
0°-90°	4804.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4804.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2336	2336	2336	2336	2336	
5°	2336	2325	2298	2317	2311	221
15°	2222	2198	2127	2086	2065	626
25°	2017	1949	1810	1723	1691	928
35°	1738	1630	1444	1311	1264	1088
45°	1421	1279	1057	907	856	1097
55°	1080	915	687	560	520	965
65°	729	558	368	296	290	723
75°	389	241	169	154	152	411
85°	91	46	40	40	40	109
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2336.0	2336.0	2336.0	2336.0	2336.0
2.5°	2346.5	2336.0	2312.6	2333.9	2329.7
5°	2336.0	2325.4	2297.8	2316.9	2310.6
7.5°	2316.9	2304.3	2274.7	2283.0	2272.5
10°	2291.5	2276.7	2234.6	2228.1	2215.5
12.5°	2260.0	2240.8	2183.7	2171.1	2147.8
15°	2221.8	2198.4	2126.7	2086.5	2065.4
17.5°	2177.4	2143.5	2054.7	2008.2	1974.4
20°	2126.7	2084.3	1978.7	1925.9	1879.3
22.5°	2071.7	2023.0	1900.4	1828.6	1797.0
25°	2016.8	1949.1	1809.6	1723.0	1691.2
27.5°	1951.4	1879.3	1725.0	1625.6	1577.0
30°	1881.6	1801.0	1631.9	1524.3	1467.1
32.5°	1813.8	1716.5	1543.4	1416.4	1363.5
35°	1737.8	1629.9	1444.0	1310.7	1264.1
37.5°	1663.8	1547.3	1350.9	1204.9	1152.2
40°	1585.5	1458.8	1253.5	1103.5	1048.5
42.5°	1505.2	1370.0	1156.4	999.8	947.2
45°	1420.6	1278.9	1057.1	906.8	856.1
47.5°	1340.4	1190.3	962.0	811.7	765.3
50°	1251.5	1101.5	868.9	722.9	678.7
52.5°	1164.7	1006.2	780.1	640.6	600.4
55°	1080.2	915.3	687.0	560.3	520.1
57.5°	993.6	824.4	604.7	486.3	452.3
60°	904.8	735.7	517.9	410.2	376.3
62.5°	818.2	649.1	443.9	342.5	325.6
65°	729.4	558.0	367.9	296.1	289.6
67.5°	644.8	473.4	296.1	260.0	253.7
70°	556.0	391.1	245.1	224.1	215.5
72.5°	471.5	314.9	205.0	188.2	183.9
75°	389.0	240.9	169.1	154.3	152.3
77.5°	306.6	171.2	133.2	124.7	120.5
80°	230.3	122.6	101.4	93.1	93.1
82.5°	160.6	82.5	69.7	65.5	65.5
85°	90.8	46.4	40.1	40.1	40.1
87.5°	33.9	16.9	16.9	14.8	14.8
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	12.68	14.20	13.04	14.51	14.83	8.64	10.16	9.00	10.48	10.79
	3H	14.44	15.81	14.82	16.14	16.50	9.91	11.27	10.28	11.60	11.96
	4H	15.11	16.39	15.51	16.74	17.12	10.41	11.69	10.81	12.04	12.41
	6H	15.60	16.78	16.01	17.15	17.54	10.79	11.97	11.20	12.34	12.73
	8H	15.76	16.89	16.19	17.28	17.68	10.91	12.04	11.34	12.43	12.83
	12H	15.87	16.95	16.30	17.33	17.76	10.99	12.07	11.42	12.45	12.88
4H	2H	12.78	14.06	13.18	14.41	14.79	9.34	10.62	9.74	10.96	11.34
	3H	14.72	15.78	15.13	16.18	16.58	10.78	11.84	11.19	12.24	12.64
	4H	15.47	16.42	15.90	16.84	17.28	11.38	12.33	11.81	12.75	13.19
	6H	16.06	16.89	16.51	17.33	17.79	11.87	12.70	12.32	13.14	13.60
	8H	16.27	17.05	16.73	17.49	17.96	12.03	12.81	12.49	13.25	13.72
	12H	16.43	17.12	16.91	17.60	18.07	12.15	12.84	12.63	13.32	13.79
8H	4H	15.49	16.27	15.95	16.71	17.18	11.73	12.51	12.20	12.95	13.42
	6H	16.13	16.77	16.62	17.26	17.74	12.32	12.96	12.82	13.45	13.93
	8H	16.38	16.95	16.89	17.46	17.95	12.54	13.12	13.05	13.63	14.11
	12H	16.58	17.09	17.09	17.58	18.15	12.72	13.23	13.23	13.72	14.29
12H	4H	15.47	16.17	15.96	16.65	17.12	11.77	12.47	12.26	12.95	13.42
	6H	16.11	16.69	16.62	17.20	17.68	12.38	12.96	12.90	13.47	13.96
	8H	16.39	16.90	16.90	17.39	17.96	12.66	13.16	13.16	13.66	14.22