

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: P930788

Luminaire Tested: DFN2DS-PN4F0-120DS930-RLL

Issue Date: 11/20/2024

Test Information

Test Method: LM-79-2019
Report Number: P930788
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-PN4F0-120DS930-RLL
Description: 4 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

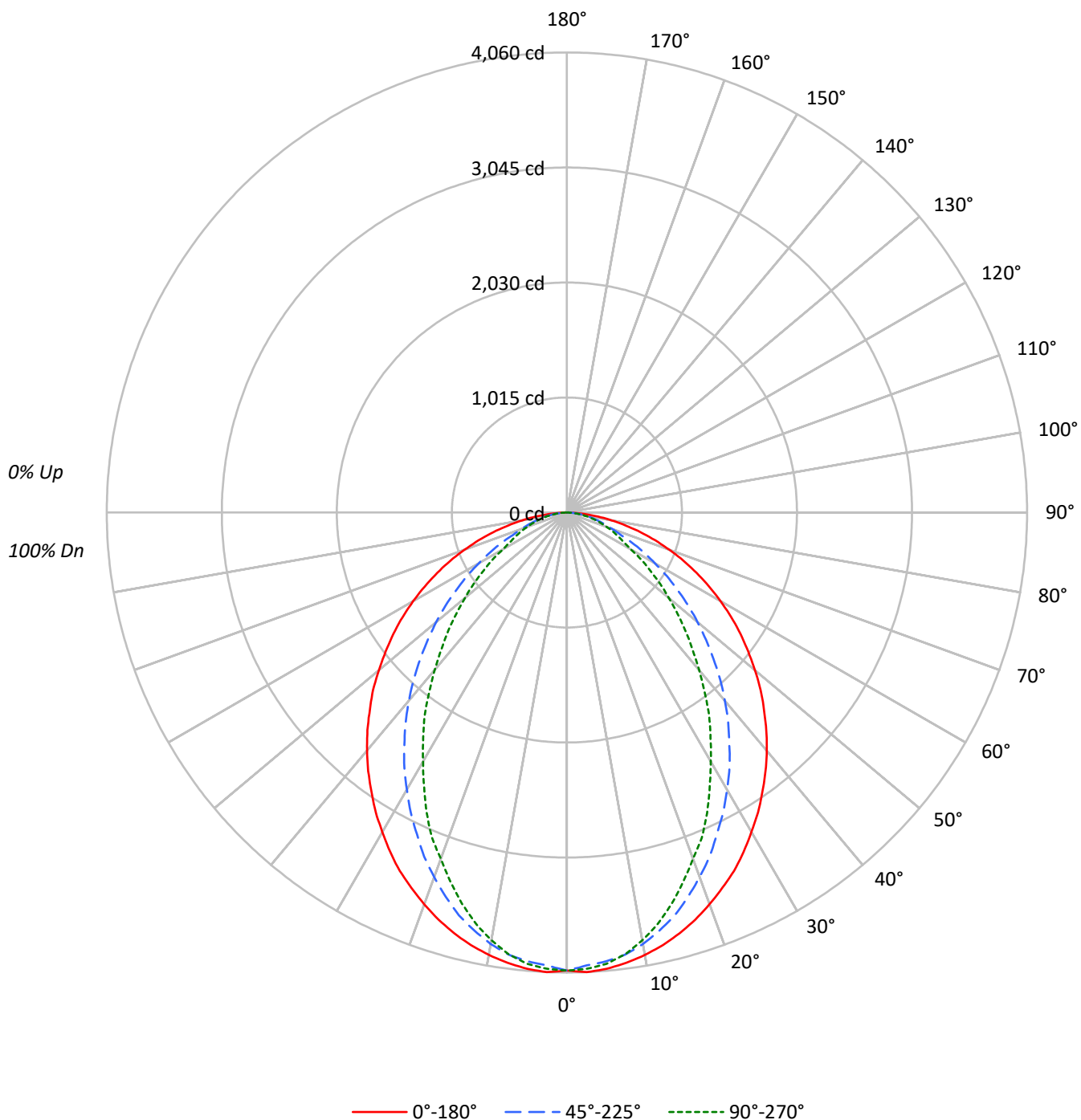
Lumens per Lamp: N/A
Luminaire Lumens: 8313.0 lumens
Efficiency: N/A
Efficacy: 63.5 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular (W 3.94' x L: 3.74' x H: 0')
CIE Type: Direct

Input Watts (W): 131
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9781
Total Harmonic Distortion (THDi): 0.075
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
RW	70	50	30	10	70	50	30	10	50	30	10		50	30	10		50
RCR																	
0	119	119	119	119	116	116	116	116	111	111	111		106	106	106		102
1	110	106	102	98	107	103	100	97	99	96	94		95	93	91		92
2	101	94	87	82	98	92	86	81	88	83	79		85	81	78		82
3	93	83	76	70	90	82	75	69	79	73	68		76	71	67		74
4	86	75	66	60	83	73	66	60	71	64	59		69	63	58		66
5	79	67	59	53	77	66	58	52	64	57	52		62	56	51		60
6	74	61	53	47	72	60	52	46	58	51	46		57	50	46		55
7	68	56	47	42	67	55	47	42	53	46	41		52	46	41		51
8	64	51	43	38	62	51	43	37	49	42	37		48	42	37		47
9	60	47	39	34	59	47	39	34	46	39	34		44	38	34		44
10	56	44	36	31	55	43	36	31	42	36	31		41	35	31		41

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2951	2951	2951
5°	2962	2913	2930
10°	2939	2866	2842
15°	2905	2781	2701
20°	2859	2660	2526
25°	2811	2522	2357
30°	2744	2380	2140
35°	2680	2226	1949
40°	2614	2067	1729
45°	2538	1888	1529
50°	2459	1707	1334
55°	2379	1513	1145
60°	2286	1308	951
65°	2180	1099	866
70°	2053	905	796
75°	1898	826	743
80°	1676	737	677
85°	1317	581	581

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2538 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	378.8	4.6
10°-20°	1040.0	12.5
20°-30°	1460.1	17.6
30°-40°	1591.6	19.1
40°-50°	1462.8	17.6
50°-60°	1148.8	13.8
60°-70°	747.8	9.0
70°-80°	384.9	4.6
80°-90°	98.3	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°	2878.9	34.6
0°-40°	4470.4	53.8
0°-60°	7082.1	85.2
0°-90°	8313.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	8313.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	4042	4042	4042	4042	4042	
5°	4042	4024	3976	4009	3998	383
15°	3844	3804	3680	3610	3574	1083
25°	3490	3373	3131	2981	2926	1605
35°	3007	2820	2498	2268	2187	1882
45°	2458	2213	1829	1569	1481	1898
55°	1869	1584	1189	969	900	1670
65°	1262	966	636	512	501	1251
75°	673	417	293	267	264	712
85°	157	80	69	69	69	188
90°	0	0	0	0	0	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	4042.1	4042.1	4042.1	4042.1	4042.1
2.5°	4060.3	4042.1	4001.7	4038.6	4031.2
5°	4042.1	4023.8	3976.1	4009.1	3998.2
7.5°	4009.1	3987.3	3936.1	3950.5	3932.2
10°	3965.2	3939.6	3866.6	3855.4	3833.7
12.5°	3910.5	3877.5	3778.5	3756.8	3716.5
15°	3844.5	3804.2	3680.0	3610.4	3574.0
17.5°	3767.7	3709.1	3555.4	3475.1	3416.5
20°	3680.0	3606.6	3423.8	3332.6	3251.8
22.5°	3584.9	3500.7	3288.4	3164.2	3109.5
25°	3489.8	3372.6	3131.1	2981.4	2926.3
27.5°	3376.5	3251.8	2984.9	2813.0	2728.7
30°	3255.8	3116.5	2823.8	2637.5	2538.6
32.5°	3138.6	2970.1	2670.5	2450.9	2359.3
35°	3007.0	2820.3	2498.5	2268.1	2187.3
37.5°	2878.9	2677.5	2337.5	2084.9	1993.7
40°	2743.5	2524.2	2169.1	1909.5	1814.4
42.5°	2604.5	2370.5	2001.1	1730.2	1639.0
45°	2458.2	2213.0	1829.1	1569.1	1481.3
47.5°	2319.2	2059.7	1664.6	1404.6	1324.2
50°	2165.6	1906.0	1503.5	1250.9	1174.4
52.5°	2015.4	1741.0	1349.8	1108.4	1039.0
55°	1869.1	1583.9	1188.8	969.4	900.0
57.5°	1719.2	1426.7	1046.3	841.4	782.8
60°	1565.6	1272.9	896.1	709.9	651.3
62.5°	1415.8	1123.2	768.1	592.7	563.5
65°	1262.1	965.6	636.5	512.3	501.1
67.5°	1115.8	819.2	512.3	449.8	439.0
70°	962.1	676.9	424.2	387.7	372.9
72.5°	815.8	544.9	354.7	325.6	318.3
75°	672.9	416.8	292.7	267.0	263.5
77.5°	530.6	296.1	230.6	215.8	208.4
80°	398.6	212.3	175.4	161.0	161.0
82.5°	277.9	142.8	120.7	113.3	113.3
85°	157.2	80.4	69.4	69.4	69.4
87.5°	58.6	29.1	29.1	25.6	25.6
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	14.99	16.52	15.36	16.83	17.14	10.95	12.48	11.32	12.79	13.10
	3H	16.76	18.12	17.14	18.45	18.81	12.22	13.58	12.60	13.91	14.27
	4H	17.43	18.71	17.83	19.05	19.43	12.72	14.00	13.12	14.35	14.73
	6H	17.91	19.10	18.33	19.46	19.86	13.10	14.29	13.51	14.65	15.04
	8H	18.08	19.21	18.51	19.60	20.00	13.23	14.35	13.65	14.74	15.14
	12H	18.18	19.26	18.61	19.64	20.07	13.31	14.39	13.74	14.77	15.20
4H	2H	15.10	16.38	15.50	16.73	17.11	11.65	12.93	12.05	13.28	13.66
	3H	17.03	18.09	17.44	18.49	18.90	13.09	14.16	13.50	14.56	14.96
	4H	17.78	18.74	18.21	19.15	19.59	13.69	14.65	14.13	15.06	15.50
	6H	18.37	19.20	18.83	19.65	20.11	14.18	15.01	14.64	15.46	15.91
	8H	18.59	19.36	19.05	19.81	20.28	14.34	15.12	14.81	15.56	16.03
	12H	18.74	19.44	19.22	19.91	20.38	14.46	15.15	14.94	15.63	16.10
8H	4H	17.80	18.58	18.27	19.03	19.49	14.05	14.82	14.51	15.27	15.74
	6H	18.44	19.08	18.94	19.58	20.05	14.63	15.28	15.13	15.77	16.24
	8H	18.69	19.27	19.21	19.78	20.27	14.85	15.43	15.37	15.94	16.43
	12H	18.90	19.41	19.41	19.90	20.46	15.03	15.54	15.54	16.03	16.60
12H	4H	17.79	18.48	18.27	18.96	19.43	14.09	14.78	14.57	15.26	15.73
	6H	18.42	19.00	18.94	19.51	20.00	14.70	15.27	15.21	15.78	16.27
	8H	18.71	19.22	19.22	19.71	20.27	14.97	15.48	15.48	15.97	16.54