

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: P930782

Luminaire Tested: DFN2DS-PN4F0-120DS840-RLL

Issue Date: 11/20/2024

Test Information

Test Method: LM-79-2019
Report Number: P930782
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-PN4F0-120DS840-RLL
Description: 4 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

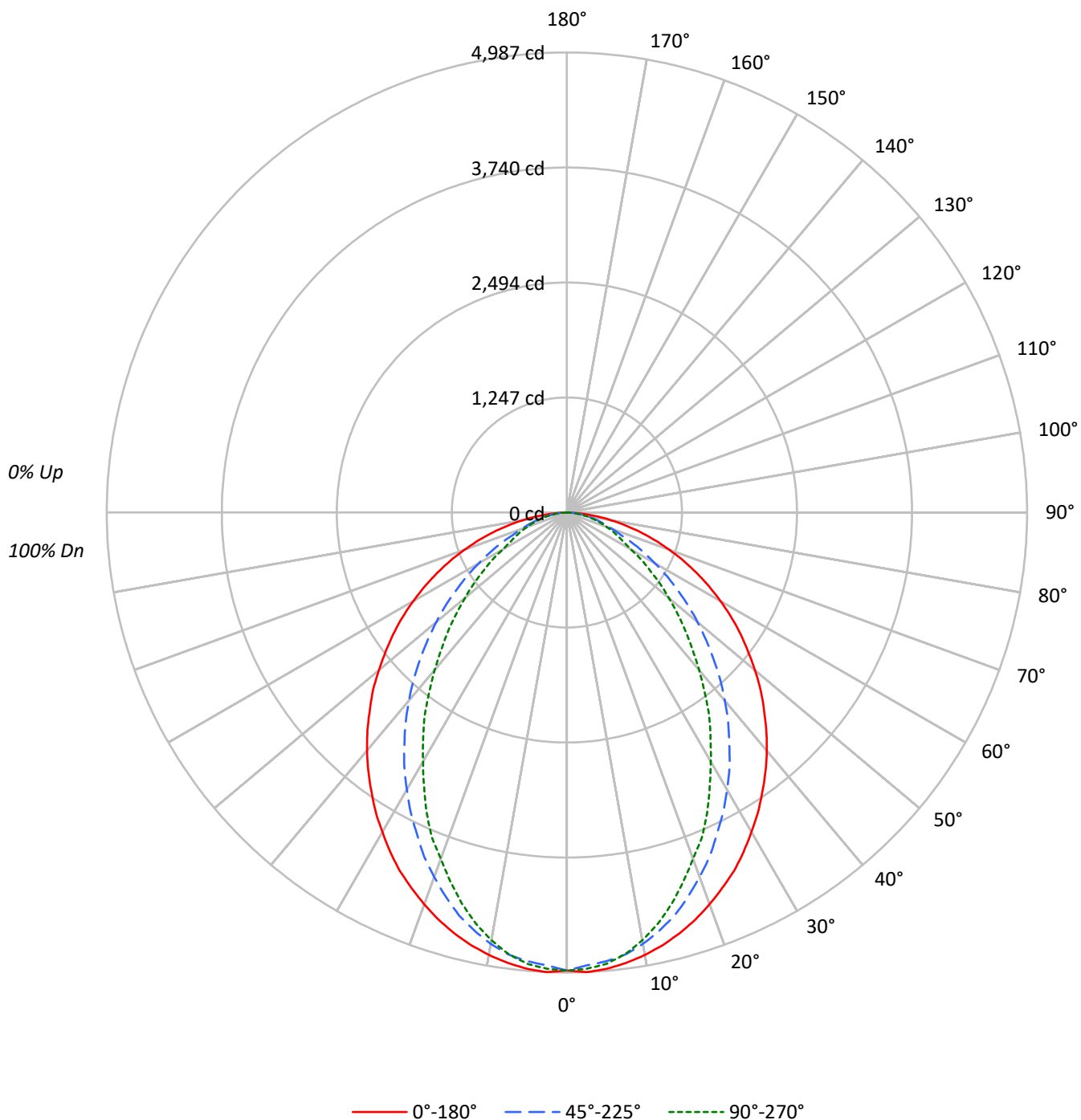
Lumens per Lamp: N/A
Luminaire Lumens: 10210.2 lumens
Efficiency: N/A
Efficacy: 77.9 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular (W 3.94' x L: 3.74' x H: 0')
CIE Type: Direct

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

TEST NUMBER: P930782

CATALOG NUMBER: DFN2DS-PN4F0-120DS840-RLL

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°	3624	3624	3624
5°	3638	3578	3598
10°	3610	3520	3490
15°	3568	3416	3317
20°	3511	3267	3103
25°	3452	3097	2895
30°	3371	2923	2628
35°	3291	2735	2394
40°	3211	2539	2123
45°	3117	2319	1878
50°	3021	2097	1638
55°	2922	1858	1407
60°	2807	1607	1168
65°	2677	1350	1063
70°	2522	1112	978
75°	2331	1014	913
80°	2058	905	831
85°	1617	714	714

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3117 cd/sqm

TEST NUMBER: P930782

CATALOG NUMBER: DFN2DS-PN4F0-120DS840-RLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	465.3	4.6
10°-20°	1277.3	12.5
20°-30°	1793.3	17.6
30°-40°	1954.8	19.1
40°-50°	1796.7	17.6
50°-60°	1411.0	13.8
60°-70°	918.4	9.0
70°-80°	472.8	4.6
80°-90°	120.7	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°	3535.9	34.6
0°-40°	5490.6	53.8
0°-60°	8698.3	85.2
0°-90°	10210.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	10210.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	4965	4965	4965	4965	4965	
5°	4965	4942	4884	4924	4911	471
15°	4722	4672	4520	4434	4390	1331
25°	4286	4142	3846	3662	3594	1971
35°	3693	3464	3069	2786	2686	2312
45°	3019	2718	2246	1927	1819	2332
55°	2296	1945	1460	1191	1105	2051
65°	1550	1186	782	629	615	1537
75°	826	512	360	328	324	874
85°	193	99	85	85	85	232
90°	0	0	0	0	0	

TEST NUMBER: P930782

CATALOG NUMBER: DFN2DS-PN4F0-120DS840-RLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	4964.6	4964.6	4964.6	4964.6	4964.6
2.5°	4987.0	4964.6	4915.0	4960.3	4951.1
5°	4964.6	4942.1	4883.5	4924.0	4910.7
7.5°	4924.0	4897.3	4834.4	4852.0	4829.6
10°	4870.2	4838.7	4749.0	4735.2	4708.6
12.5°	4802.9	4762.5	4640.8	4614.2	4564.7
15°	4721.9	4672.4	4519.8	4434.4	4389.7
17.5°	4627.5	4555.6	4366.8	4268.2	4196.2
20°	4519.8	4429.7	4205.2	4093.2	3994.0
22.5°	4403.0	4299.6	4038.8	3886.3	3819.1
25°	4286.3	4142.2	3845.7	3661.8	3594.1
27.5°	4147.0	3994.0	3666.1	3455.0	3351.4
30°	3998.8	3827.7	3468.3	3239.4	3117.9
32.5°	3854.9	3647.9	3280.0	3010.2	2897.7
35°	3693.3	3464.0	3068.8	2785.7	2686.5
37.5°	3535.9	3288.6	2871.0	2560.7	2448.6
40°	3369.6	3100.3	2664.2	2345.2	2228.4
42.5°	3198.9	2911.5	2457.8	2125.0	2013.0
45°	3019.2	2718.0	2246.5	1927.2	1819.4
47.5°	2848.5	2529.7	2044.4	1725.1	1626.4
50°	2659.9	2340.9	1846.6	1536.3	1442.4
52.5°	2475.4	2138.3	1657.9	1361.4	1276.1
55°	2295.7	1945.3	1460.1	1190.7	1105.4
57.5°	2111.6	1752.3	1285.1	1033.4	961.5
60°	1922.9	1563.5	1100.6	871.9	799.9
62.5°	1738.9	1379.5	943.3	727.9	692.1
65°	1550.1	1186.0	781.8	629.2	615.4
67.5°	1370.5	1006.2	629.2	552.5	539.1
70°	1181.7	831.3	521.0	476.2	458.1
72.5°	1002.0	669.3	435.6	399.9	390.9
75°	826.5	511.9	359.5	327.9	323.6
77.5°	651.7	363.7	283.2	265.1	256.0
80°	489.6	260.8	215.4	197.8	197.8
82.5°	341.3	175.4	148.2	139.1	139.1
85°	193.1	98.7	85.3	85.3	85.3
87.5°	72.0	35.7	35.7	31.4	31.4
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	15.71	17.23	16.07	17.54	17.86	11.67	13.19	12.03	13.50	13.82
	3H	17.47	18.84	17.85	19.17	19.53	12.93	14.30	13.31	14.63	14.99
	4H	18.14	19.42	18.54	19.77	20.15	13.44	14.72	13.84	15.06	15.44
	6H	18.63	19.81	19.04	20.18	20.57	13.82	15.00	14.23	15.37	15.76
	8H	18.79	19.92	19.22	20.31	20.71	13.94	15.07	14.37	15.46	15.86
	12H	18.90	19.98	19.33	20.36	20.79	14.02	15.10	14.45	15.48	15.91
4H	2H	15.81	17.09	16.21	17.44	17.82	12.36	13.64	12.76	13.99	14.37
	3H	17.75	18.81	18.16	19.21	19.61	13.81	14.87	14.22	15.27	15.67
	4H	18.49	19.45	18.93	19.87	20.31	14.41	15.36	14.84	15.78	16.22
	6H	19.09	19.92	19.54	20.36	20.82	14.90	15.73	15.35	16.17	16.63
	8H	19.30	20.08	19.76	20.52	20.99	15.06	15.83	15.52	16.28	16.75
	12H	19.45	20.15	19.94	20.63	21.10	15.17	15.87	15.66	16.35	16.82
8H	4H	18.52	19.30	18.98	19.74	20.21	14.76	15.54	15.22	15.98	16.45
	6H	19.16	19.80	19.65	20.29	20.77	15.35	15.99	15.84	16.48	16.96
	8H	19.41	19.98	19.92	20.49	20.98	15.57	16.14	16.08	16.65	17.14
	12H	19.61	20.12	20.12	20.61	21.18	15.75	16.26	16.26	16.75	17.31
12H	4H	18.50	19.20	18.99	19.68	20.15	14.80	15.50	15.29	15.98	16.45
	6H	19.14	19.72	19.65	20.22	20.71	15.41	15.99	15.92	16.50	16.99
	8H	19.42	19.93	19.93	20.42	20.99	15.68	16.19	16.19	16.69	17.25