

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269



Scaled data based on original data using
LM-79-2024 Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Test Report Prepared for
Cooper Lighting Solutions

Brand: NEO-RAY

Report Number: P1055743

Luminaire Tested: S123R3DR-H340D840-X4F0-XX-UDD-F-B

Issue Date: 7/25/2025

Test Information

Test Method: LM-79-2024
Report Number: P1055743
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2503-402-5)
Test Lab: INNOVATION CENTER
Issue Date: 7/25/2025
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: S123R3DR-H340D840-X4F0-XX-UDD-F-B
Description: DEFINE 3, BLACK 3-INCH REGRESSED DIRECT RECESSED HOUSING WITH FROSTED LENS
HIGH PERFORMANCE LIGHT ENGINE
Light Source: 4000K CCT, 80 CRI LEDS
Ballast/Driver: -

Summary

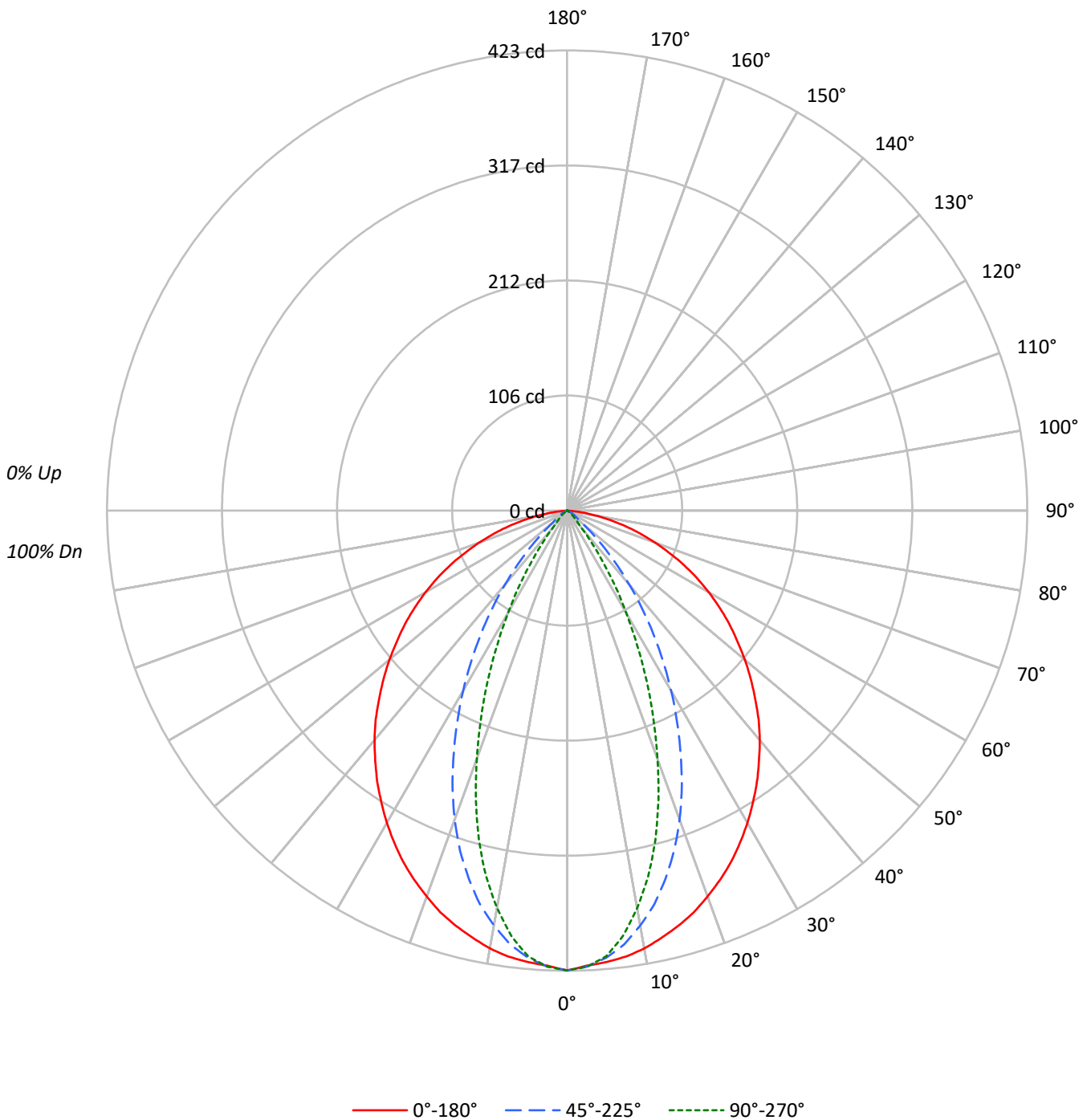
Lumens per Lamp: N/A
Luminaire Lumens: 494.7 lumens
Efficiency: N/A
Efficacy: 42.3 lumens/watt
Spacing Criteria (0/90/45): 1.17 / 0.7 / 0.86
Luminous Opening: Rectangular (W 0.23' x L: 3.9' x H: 0')
CIE Type: Direct

Input Watts (W): 11.7
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P1055743

CATALOG NUMBER: S123R3DR-H340D840-X4F0-XX-UDD-F-B

Luminous Intensity Polar Plot





TEST NUMBER: P1055743

CATALOG NUMBER: S123R3DR-H340D840-X4F0-XX-UDD-F-B

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	0
RCR																		
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	112	108	105	103	109	106	104	101	102	100	98	98	97	95	95	93	92	90
2	105	99	94	89	102	97	92	88	93	90	86	90	87	84	88	85	83	81
3	98	90	84	79	96	88	83	78	86	81	77	83	79	76	81	77	74	73
4	92	82	75	70	90	81	75	70	79	73	69	77	72	68	75	71	67	65
5	86	76	69	63	84	75	68	63	73	67	62	71	66	62	69	65	61	59
6	81	70	63	58	79	69	62	57	67	61	57	66	61	56	64	60	56	54
7	76	65	58	53	74	64	57	52	63	57	52	61	56	52	60	55	52	50
8	71	60	53	48	70	60	53	48	58	52	48	57	52	48	56	51	48	46
9	68	56	49	45	66	56	49	45	55	49	45	54	48	44	53	48	44	43
10	64	53	46	42	63	52	46	42	51	46	41	51	45	41	50	45	41	40

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	5096	5096	5096
5°	5042	4993	4978
10°	5003	4740	4541
15°	4932	4367	3913
20°	4843	3876	3116
25°	4742	3284	2299
30°	4615	2662	1508
35°	4479	2027	826
40°	4334	1401	283
45°	4164	815	164
50°	3997	321	99
55°	3826	202	46
60°	3627	128	22
65°	3378	63	11
70°	3028	32	14
75°	2571	19	19
80°	1916	28	0
85°	733	0	0

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 4164 cd/sqm



TEST NUMBER: P1055743

CATALOG NUMBER: S123R3DR-H340D840-X4F0-XX-UDD-F-B

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	38.8	7.8
10°-20°	98.3	19.9
20°-30°	117.3	23.7
30°-40°	99.5	20.1
40°-50°	67.6	13.7
50°-60°	41.9	8.5
60°-70°	21.2	4.3
70°-80°	8.6	1.7
80°-90°	1.3	0.3
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°	254.4	51.4
0°-40°	353.9	71.6
0°-60°	463.5	93.7
0°-90°	494.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	494.7	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	423	423	423	423	423	
5°	417	420	413	410	411	40
15°	395	385	350	322	314	111
25°	356	323	247	191	173	164
35°	304	244	138	74	56	190
45°	244	160	48	12	10	189
55°	182	81	10	4	2	163
65°	118	20	2	0	0	117
75°	55	4	0	0	0	59
85°	5	0	0	0	0	9
90°	0	0	0	0	0	



TEST NUMBER: P1055743

CATALOG NUMBER: S123R3DR-H340D840-X4F0-XX-UDD-F-B

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	422.7	422.7	422.7	422.7	422.7
2.5°	418.7	424.4	419.6	419.2	419.6
5°	416.6	420.5	412.6	409.5	411.3
7.5°	413.5	415.2	402.1	394.2	394.2
10°	408.7	407.3	387.2	374.0	370.9
12.5°	402.1	396.8	370.5	349.9	344.2
15°	395.1	385.0	349.9	322.3	313.5
17.5°	387.2	371.8	327.5	291.6	278.9
20°	377.5	356.9	302.1	258.3	242.9
22.5°	367.4	340.7	275.4	224.1	207.0
25°	356.5	323.2	246.9	190.7	172.8
27.5°	344.2	304.7	218.8	158.7	139.0
30°	331.5	285.4	191.2	128.0	108.3
32.5°	317.9	265.3	163.6	100.0	81.6
35°	304.3	244.2	137.7	74.1	56.1
37.5°	289.8	223.2	112.7	51.3	35.5
40°	275.4	202.6	89.0	32.4	18.0
42.5°	260.5	181.1	67.5	16.2	12.3
45°	244.2	160.0	47.8	11.8	9.6
47.5°	228.9	139.9	31.6	9.6	7.5
50°	213.1	119.7	17.1	7.0	5.3
52.5°	197.3	100.4	12.3	5.3	3.5
55°	182.0	80.7	9.6	3.5	2.2
57.5°	166.2	63.6	7.5	2.2	1.3
60°	150.4	46.9	5.3	1.3	0.9
62.5°	134.6	32.4	3.5	0.9	0.4
65°	118.4	19.7	2.2	0.4	0.4
67.5°	101.7	13.6	1.3	0.4	0.4
70°	85.9	9.6	0.9	0.4	0.4
72.5°	70.2	6.1	0.4	0.4	0.0
75°	55.2	3.5	0.4	0.4	0.4
77.5°	40.8	1.3	0.4	0.4	0.0
80°	27.6	0.4	0.4	0.4	0.0
82.5°	15.3	0.0	0.4	0.4	0.0
85°	5.3	0.0	0.0	0.4	0.0
87.5°	0.0	0.0	0.0	0.4	0.0
90°	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P1055743
 CATALOG NUMBER: S123R3DR-H340D840-X4F0-XX-UDD-F-B

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	14.71	15.99	15.07	16.30	16.62	0.00	0.00	0.00	0.00	0.00
	3H	16.65	17.79	17.03	18.12	18.48	0.00	0.00	0.00	0.00	0.00
	4H	17.48	18.53	17.88	18.88	19.27	0.00	0.00	0.00	0.00	0.00
	6H	18.03	19.00	18.45	19.37	19.77	0.00	0.00	0.00	0.00	0.00
	8H	18.16	19.07	18.59	19.46	19.87	0.00	0.00	0.00	0.00	0.00
	12H	18.18	19.06	18.61	19.44	19.87	0.00	0.00	0.00	0.00	0.00
4H	2H	14.47	15.53	14.87	15.88	16.26	0.00	0.00	0.00	0.00	0.00
	3H	16.42	17.28	16.84	17.69	18.09	0.00	0.00	0.00	0.00	0.00
	4H	17.24	18.00	17.67	18.42	18.87	0.00	0.00	0.00	0.00	0.00
	6H	17.84	18.50	18.30	18.95	19.41	0.00	0.00	0.00	0.00	0.00
	8H	17.99	18.61	18.46	19.05	19.52	0.00	0.00	0.00	0.00	0.00
	12H	18.03	18.58	18.52	19.06	19.54	0.00	0.00	0.00	0.00	0.00
8H	4H	17.09	17.71	17.56	18.16	18.63	0.00	0.00	0.00	0.00	0.00
	6H	17.67	18.18	18.18	18.67	19.16	0.00	0.00	0.00	0.00	0.00
	8H	17.82	18.27	18.35	18.79	19.28	0.00	0.00	0.00	0.00	0.00
	12H	17.88	18.28	18.40	18.77	19.34	0.00	0.00	0.00	0.00	0.00
12H	4H	17.04	17.59	17.53	18.07	18.55	0.00	0.00	0.00	0.00	0.00
	6H	17.61	18.06	18.13	18.58	19.07	0.00	0.00	0.00	0.00	0.00
	8H	17.78	18.17	18.29	18.67	19.24	0.00	0.00	0.00	0.00	0.00