

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: P735865

Luminaire Tested: S122DRP-S290D850-X4F0-XX-UDD-W-W

Issue Date: 1/24/2024

**Test Information**

Test Method: LM-79-2024  
Report Number: P735865  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2308-143-1)  
Test Lab: INNOVATION CENTER  
Issue Date: 1/24/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: S122DRP-S290D850-X4F0-XX-UDD-W-W  
Description: DEFINE 2 DIRECT RECESSED WITH WALL WASH OPTIC  
Light Source: 5000K CCT, 80 CRI LEDS  
Ballast/Driver: -

**Summary**

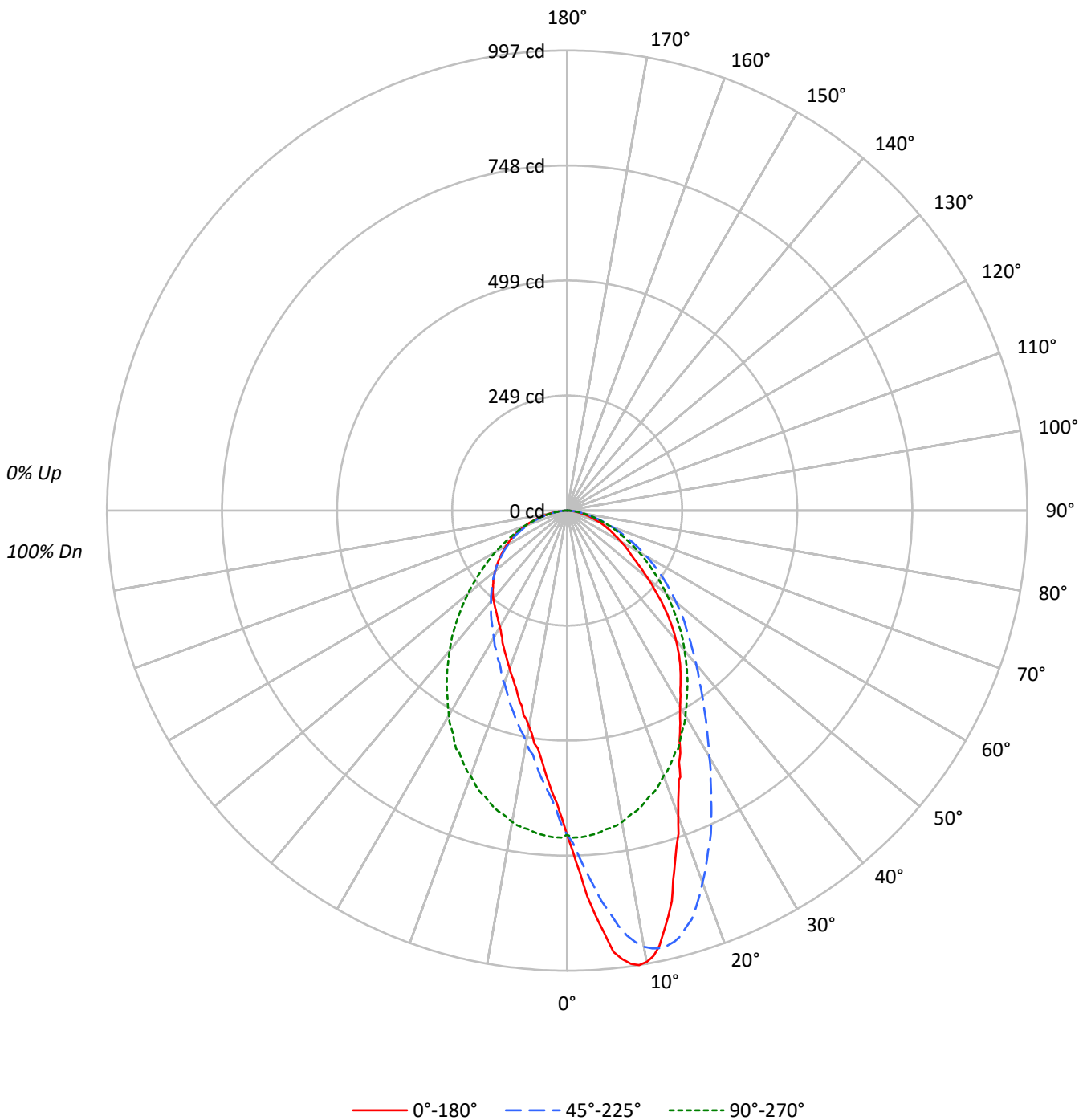
Lumens per Lamp: N/A  
Luminaire Lumens: 1429.0 lumens  
Efficiency: N/A  
Efficacy: 114.3 lumens/watt  
Spacing Criteria (0/90/45): 0.9 / 1.11 / 1.12  
Luminous Opening: Rectangular (W 4' x L: 0.14' x H: 0')  
CIE Type: Direct

Input Watts (W): 12.5  
Input Voltage (V): 120  
Input Current (Ain): 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: P735865

CATALOG NUMBER: S122DRP-S290D850-X4F0-XX-UDD-W-W

### Luminous Intensity Polar Plot



TEST NUMBER: P735865

CATALOG NUMBER: S122DRP-S290D850-X4F0-XX-UDD-W-W

**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	50	30	10	0		
RCR																										
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100					100			
1	110	106	102	98	107	103	100	97	99	96	94	95	93	91	92	90	88					86				
2	101	94	87	82	98	92	86	81	88	83	79	85	81	78	82	79	76					74				
3	93	83	76	70	91	82	75	69	79	73	68	76	71	67	74	69	66					64				
4	86	75	67	60	83	73	66	60	71	64	59	69	63	58	67	62	58					56				
5	79	67	59	53	77	66	58	53	64	57	52	62	56	52	61	55	51					49				
6	74	61	53	47	72	60	52	47	59	52	46	57	51	46	55	50	46					44				
7	69	56	48	42	67	55	47	42	54	47	42	52	46	41	51	45	41					39				
8	64	51	43	38	63	51	43	38	50	43	38	48	42	37	47	41	37					35				
9	60	48	40	35	59	47	40	34	46	39	34	45	39	34	44	38	34					32				
10	57	44	37	32	55	44	36	32	43	36	31	42	36	31	41	35	31					30				

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°	135°	180°
0°	13499	13499	13499	13499	13499
5°	17705	16364	13570	11382	10859
10°	19379	18729	13368	9948	9271
15°	17434	18970	13006	8981	8222
20°	14386	17544	12510	8145	7454
25°	12294	15652	12070	7535	6910
30°	10873	13670	11377	7060	6470
35°	10057	12108	10669	6727	6286
40°	9204	10925	9931	6444	6250
45°	8109	9971	9185	6247	6168
50°	6827	9195	8415	6076	6091
55°	5744	8458	7604	5871	5985
60°	5178	7646	6904	5697	5862
65°	4698	6718	6149	5421	5753
70°	4232	5805	5536	5019	5451
75°	3691	4909	4731	4552	4983
80°	3099	3852	3852	3952	4173
85°	2338	2779	2867	3088	2977

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 14643 cd/sqm



TEST NUMBER: P735865

CATALOG NUMBER: S122DRP-S290D850-X4F0-XX-UDD-W-W

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	69.1	4.8
10°-20°	189.7	13.3
20°-30°	248.8	17.4
30°-40°	262.9	18.4
40°-50°	244.1	17.1
50°-60°	195.4	13.7
60°-70°	133.6	9.4
70°-80°	69.0	4.8
80°-90°	16.4	1.1
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°	507.6	35.5
0°-40°	770.5	53.9
0°-60°	1210.0	84.7
0°-90°	1429.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1429.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	702	702	702	702	702	
5°	918	848	703	590	563	90
15°	876	953	654	451	413	240
25°	580	738	569	355	326	267
35°	429	516	455	287	268	268
45°	298	367	338	230	227	229
55°	171	252	227	175	179	157
65°	103	148	135	119	126	102
75°	50	66	64	61	67	53
85°	11	13	13	14	14	13
90°	0	0	0	0	0	

TEST NUMBER: P735865

CATALOG NUMBER: S122DRP-S290D850-X4F0-XX-UDD-W-W

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°
0°	702.3	702.3	702.3	702.3	702.3	702.3	702.3	702.3	702.3
1°	740.9	737.1	720.2	721.1	708.6	694.6	681.6	673.4	666.6
2°	784.4	776.7	750.1	737.1	708.6	678.7	651.6	644.4	635.2
3°	837.0	818.6	782.0	751.1	707.6	664.2	627.0	614.0	612.5
4°	879.5	863.1	814.3	765.6	705.2	650.2	608.2	594.2	587.4
5°	917.6	907.0	848.1	783.9	703.3	636.7	589.9	570.5	562.8
6°	961.5	939.8	875.1	802.2	699.9	623.6	573.4	550.3	539.7
7°	979.4	965.9	905.5	814.3	695.6	608.7	552.7	527.6	519.9
8°	991.9	986.6	929.7	834.1	693.6	594.7	534.3	518.9	509.7
9°	997.2	992.9	947.0	842.3	690.3	587.4	525.2	499.6	489.5
10°	992.9	994.8	959.6	854.8	684.9	572.5	509.7	487.5	475.0
11°	982.8	987.6	966.4	869.3	678.2	560.4	495.7	473.0	461.0
12°	963.5	974.1	969.2	879.5	671.9	549.8	486.1	464.4	453.7
13°	933.5	957.2	967.3	883.8	668.0	537.7	474.0	448.9	435.4
14°	906.5	931.1	962.0	893.5	661.3	524.2	462.9	437.8	426.2
15°	876.1	904.6	953.3	896.4	653.6	513.1	451.3	423.8	413.2
16°	833.6	871.7	937.4	899.7	644.4	500.6	440.7	414.6	400.6
17°	798.4	839.4	925.3	901.7	639.6	490.9	431.5	400.6	391.5
18°	766.0	812.4	903.6	900.2	631.8	479.8	418.0	390.5	381.8
19°	740.5	778.1	881.9	896.8	621.2	469.2	407.9	383.3	373.1
20°	703.3	746.7	857.7	895.4	611.6	459.5	398.2	373.1	364.4
21°	672.4	716.8	835.5	890.6	604.8	450.4	391.0	363.5	355.7
22.5°	631.8	670.9	798.4	881.4	589.9	434.9	375.1	354.3	343.7
23°	627.0	660.3	788.7	878.5	585.5	431.5	369.7	349.0	340.3
24°	596.6	631.8	766.0	869.3	574.4	420.9	361.1	342.7	332.6
25°	579.7	608.7	738.0	860.6	569.1	411.3	355.3	334.5	325.8
26°	556.1	589.4	712.9	848.1	557.5	402.6	346.1	327.3	319.1
27°	538.7	566.7	686.9	838.9	544.0	393.4	338.9	320.0	309.9
28°	521.8	548.8	661.8	824.0	534.3	383.3	333.5	313.8	304.1
29°	504.4	528.1	641.5	812.4	525.2	374.6	325.3	305.5	296.4
30°	489.9	511.7	615.9	796.9	512.6	364.4	318.1	299.8	291.5
32.5°	456.6	475.0	563.8	760.2	482.7	344.2	300.7	283.8	279.0
35°	428.6	440.7	516.0	719.2	454.7	322.4	286.7	270.3	267.9
37.5°	399.2	410.8	472.6	676.3	425.3	302.6	270.8	260.2	258.2
40°	366.8	382.3	435.4	633.8	395.8	283.3	256.8	248.6	249.1
42.5°	334.5	352.4	399.2	584.1	368.3	265.0	243.3	237.5	238.5
45°	298.3	321.0	366.8	538.7	337.9	247.6	229.8	226.9	226.9
47.5°	260.7	289.6	338.9	491.9	308.9	230.2	216.7	214.8	215.8
50°	228.3	254.4	307.5	446.5	281.4	214.3	203.2	202.7	203.7
52.5°	196.5	222.5	280.0	404.0	253.4	199.8	190.2	190.2	191.1
55°	171.4	191.6	252.4	359.6	226.9	182.9	175.2	176.7	178.6
57.5°	154.0	167.5	225.4	317.1	202.2	166.5	161.7	162.7	165.1
60°	134.7	145.3	198.9	278.0	179.6	150.6	148.2	150.1	152.5
62.5°	117.3	126.5	173.8	242.8	154.9	135.2	134.2	137.1	139.5
65°	103.3	109.6	147.7	207.1	135.2	119.7	119.2	123.6	126.5



TEST NUMBER: P735865

CATALOG NUMBER: S122DRP-S290D850-X4F0-XX-UDD-W-W

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°
67.5°	88.8	93.6	125.0	173.3	115.4	104.3	104.3	109.1	111.5
70°	75.3	79.2	103.3	142.9	98.5	88.8	89.3	95.1	97.0
72.5°	61.3	64.7	84.0	114.9	79.6	74.3	75.8	80.6	82.5
75°	49.7	52.1	66.1	90.7	63.7	59.4	61.3	65.6	67.1
77.5°	38.1	40.1	48.8	66.6	48.8	46.3	48.3	52.1	52.1
80°	28.0	28.5	34.8	46.8	34.8	33.3	35.7	37.7	37.7
82.5°	18.3	19.3	22.7	29.9	23.2	22.7	23.7	25.1	25.1
85°	10.6	11.1	12.6	16.4	13.0	13.0	14.0	14.0	13.5
87.5°	4.3	4.8	5.3	6.3	5.8	6.3	6.3	5.3	5.8
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P735865  
 CATALOG NUMBER: S122DRP-S290D850-X4F0-XX-UDD-W-W

**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	18.26	19.78	18.63	20.10	20.41	17.84	19.36	18.20	19.67	19.99
	3H	19.46	20.83	19.84	21.16	21.52	19.35	20.72	19.73	21.04	21.41
	4H	19.86	21.14	20.26	21.49	21.87	19.88	21.16	20.28	21.51	21.89
	6H	20.11	21.30	20.53	21.66	22.06	20.23	21.41	20.64	21.78	22.17
	8H	20.18	21.30	20.60	21.69	22.09	20.33	21.45	20.75	21.84	22.24
	12H	20.21	21.29	20.64	21.67	22.10	20.38	21.46	20.81	21.84	22.27
4H	2H	19.32	20.60	19.72	20.95	21.33	18.91	20.19	19.31	20.54	20.92
	3H	20.68	21.75	21.09	22.14	22.55	20.53	21.60	20.94	22.00	22.40
	4H	21.14	22.10	21.57	22.52	22.95	21.11	22.07	21.55	22.49	22.93
	6H	21.45	22.29	21.91	22.73	23.19	21.54	22.37	21.99	22.81	23.27
	8H	21.53	22.31	22.00	22.76	23.22	21.65	22.43	22.12	22.88	23.34
	12H	21.58	22.28	22.06	22.76	23.23	21.73	22.42	22.21	22.90	23.37
8H	4H	21.50	22.28	21.96	22.72	23.19	21.46	22.24	21.92	22.68	23.15
	6H	21.90	22.54	22.40	23.04	23.51	21.98	22.62	22.47	23.11	23.59
	8H	22.02	22.60	22.54	23.11	23.60	22.14	22.72	22.66	23.23	23.72
	12H	22.11	22.62	22.62	23.11	23.67	22.27	22.78	22.78	23.27	23.83
12H	4H	21.52	22.22	22.00	22.69	23.17	21.47	22.17	21.95	22.65	23.12
	6H	21.95	22.52	22.46	23.03	23.52	22.02	22.59	22.53	23.10	23.59
	8H	22.11	22.62	22.62	23.12	23.68	22.23	22.74	22.74	23.24	23.80