

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: P646646

Luminaire Tested: S123DR-S560D935-X4F0-XX-UDD-G-W

Issue Date: 3/20/2023

Test Information

Test Method: LM-79-2019
Report Number: P646646
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2301-905-1)
Test Lab: INNOVATION CENTER
Issue Date: 3/20/2023
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: S123DR-S560D935-X4F0-XX-UDD-G-W
Description: DEFINE 3 DIRECT RECESSED WITH WALL GRAZE FLUSH OPTIC
STANDARD LIGHT ENGINE
Light Source: 3500K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2140.6 lumens
Efficiency: N/A
Efficacy: 115.1 lumens/watt
Spacing Criteria (0/90/45): 0.65 / 1.19 / 0.89
Luminous Opening: Rectangular (W 4' x L: 0.22' x H: 0')
CIE Type: Direct

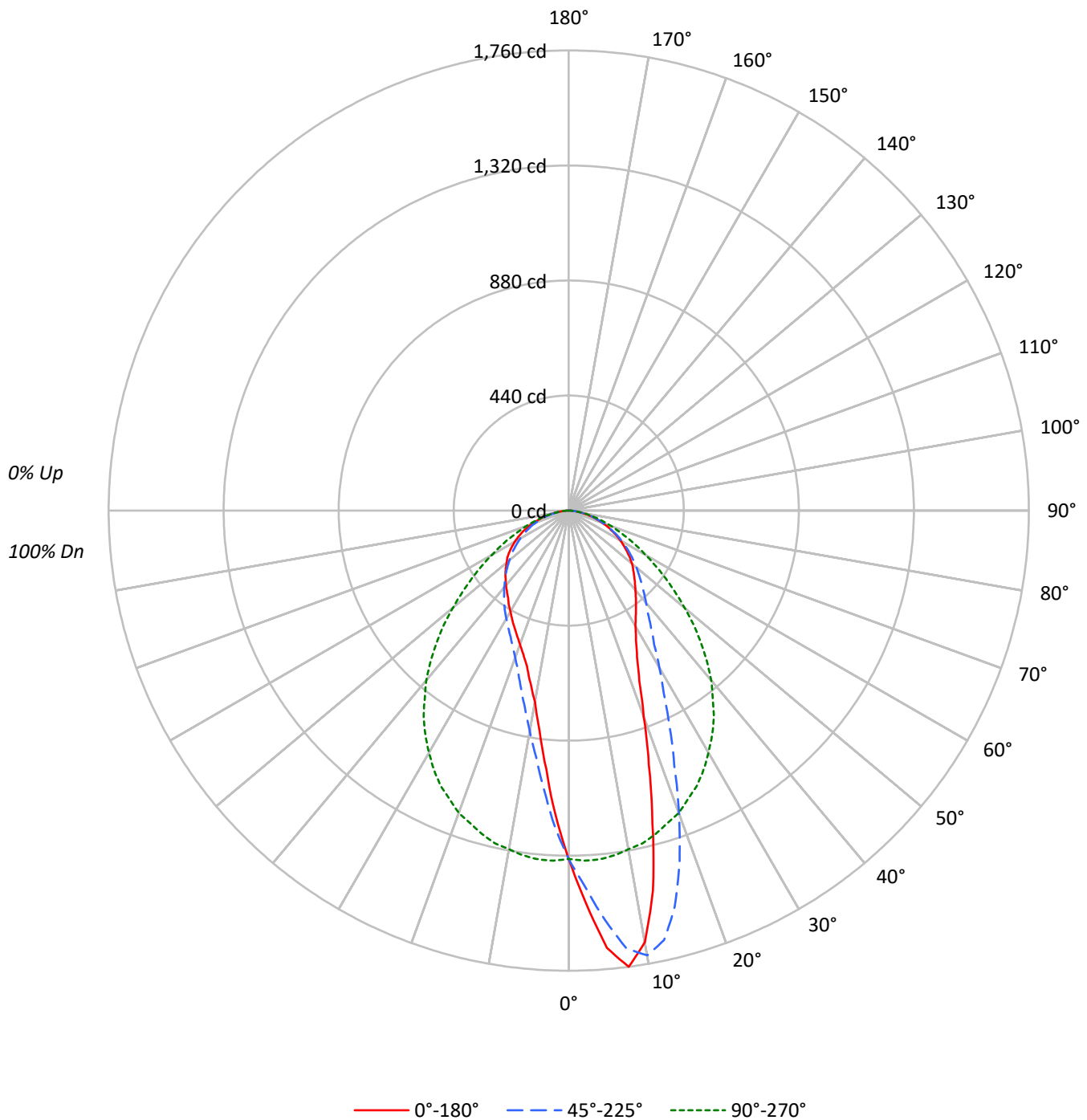
Input Watts (W): 18.6
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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Luminous Intensity Polar Plot



CATALOG NUMBER: S123DR-S560D935-X4F0-XX-UDD-G-W

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	100						
1	110	106	102	98	107	103	100	97	99	96	94	95	93	91	92	90	88	86						
2	101	94	88	82	99	92	86	82	88	84	80	85	81	78	82	79	76	74						
3	93	84	76	70	91	82	75	70	79	73	69	77	72	67	74	70	66	64						
4	86	75	67	61	84	74	67	61	72	65	60	69	64	59	67	62	58	56						
5	80	68	60	54	78	67	59	54	65	58	53	63	57	52	61	56	52	50						
6	74	62	54	48	73	61	53	48	60	53	47	58	52	47	56	51	47	45						
7	70	57	49	43	68	56	49	43	55	48	43	53	47	43	52	47	42	40						
8	65	53	45	39	64	52	44	39	51	44	39	49	43	39	48	43	39	37						
9	61	49	41	36	60	48	41	36	47	40	36	46	40	36	45	40	35	34						
10	58	45	38	33	57	45	38	33	44	37	33	43	37	33	42	37	33	31						

	0°	45°	90°	135°	180°
0°	16053	16053	16053	16053	16053
5°	20302	18986	16197	12988	11994
10°	20499	21134	16089	10492	9092
15°	15439	19557	15979	8792	7689
20°	10757	15814	15775	7665	6984
25°	8203	12132	15427	7028	6550
30°	7096	9642	14872	6641	6201
35°	6584	8075	14231	6329	5956
40°	6233	7224	13332	6038	5873
45°	6025	6710	12189	5783	5836
50°	5922	6340	10835	5562	5805
55°	5701	5987	9506	5363	5832
60°	5497	5661	8193	5169	5735
65°	5163	5306	7068	4952	5622
70°	4770	4922	6010	4682	5291
75°	4316	4460	5154	4288	4837
80°	3560	3816	4073	3733	4073
85°	2820	3083	2986	3249	3249

Horizontal Angle: 80°
Vertical Angle: 45°
Luminance: 13917 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	126.0	5.9
10°-20°	313.4	14.6
20°-30°	371.0	17.3
30°-40°	372.8	17.4
40°-50°	341.9	16.0
50°-60°	282.2	13.2
60°-70°	199.7	9.3
70°-80°	106.6	5.0
80°-90°	27.1	1.3
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°	810.3	37.9
0°-40°	1183.1	55.3
0°-60°	1807.2	84.4
0°-90°	2140.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2140.6	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1332	1332	1332	1332	1332	
5°	1678	1570	1339	1074	992	160
15°	1238	1568	1281	705	616	342
25°	617	912	1160	529	493	291
35°	448	549	968	430	405	281
45°	354	394	715	339	342	274
55°	271	285	452	255	278	243
65°	181	186	248	174	197	180
75°	93	96	111	92	104	97
85°	20	22	22	24	24	24
90°	0	0	0	0	0	

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CANDELA DISTRIBUTION (FULL):

	0°	10°	20°	22.5°	30°	40°	45°	50°	60°	67.5°	70°
0°	1332.3	1332.3	1332.3	1332.3	1332.3	1332.3	1332.3	1332.3	1332.3	1332.3	1332.3
2.5°	1501.7	1498.6	1483.1	1473.2	1475.7	1453.4	1439.8	1428.7	1421.3	1403.4	1394.1
5°	1678.5	1687.1	1677.2	1672.3	1646.9	1606.8	1569.7	1561.6	1527.0	1484.3	1469.5
7.5°	1760.1	1765.0	1758.8	1758.8	1750.8	1714.9	1689.0	1668.6	1609.2	1554.2	1528.9
10°	1675.4	1686.5	1710.6	1721.7	1737.8	1732.9	1727.3	1719.3	1679.1	1615.4	1586.4
12.5°	1489.3	1502.9	1551.1	1557.9	1612.9	1666.1	1683.4	1703.2	1706.9	1653.1	1621.6
15°	1237.7	1275.4	1319.3	1340.3	1410.2	1522.1	1567.8	1621.6	1685.3	1663.0	1638.3
17.5°	1019.4	1033.7	1080.6	1125.2	1195.0	1324.2	1408.9	1489.3	1625.9	1648.2	1632.7
20°	838.9	851.9	913.7	910.6	1003.4	1148.7	1233.3	1326.1	1527.6	1600.0	1596.9
22.5°	704.8	725.2	759.8	779.0	845.7	974.9	1055.3	1170.9	1415.7	1530.1	1542.5
25°	617.0	631.8	652.8	669.5	721.5	827.8	912.5	1007.7	1274.8	1438.6	1469.5
27.5°	557.0	563.2	584.2	594.1	628.7	720.2	785.8	872.9	1144.3	1336.0	1379.2
30°	510.0	514.4	532.9	536.0	563.2	629.3	693.0	764.1	1017.0	1230.3	1279.7
32.5°	477.3	480.4	494.6	495.8	516.2	564.4	608.9	675.7	896.4	1117.1	1178.3
35°	447.6	449.4	460.0	463.0	476.0	512.5	549.0	600.3	800.6	1015.1	1082.5
37.5°	421.6	424.1	430.3	434.0	444.5	473.6	498.3	540.9	708.5	908.8	983.6
40°	396.3	400.6	404.9	404.9	416.7	438.9	459.3	494.6	629.3	816.0	882.2
42.5°	374.6	379.0	380.8	381.4	387.6	408.0	425.3	449.4	569.4	733.8	798.7
45°	353.6	355.5	357.3	358.6	362.9	380.8	393.8	416.7	512.5	657.8	720.8
47.5°	334.5	334.5	335.7	337.5	340.6	353.6	364.7	381.4	463.7	589.8	641.7
50°	315.9	315.9	314.1	315.3	317.1	327.0	338.2	351.8	417.9	527.3	573.7
52.5°	293.7	293.7	294.3	292.4	294.3	302.9	311.6	325.2	379.0	469.8	509.4
55°	271.4	273.9	272.0	270.8	273.3	278.8	285.0	296.7	342.5	424.1	455.6
57.5°	249.1	250.4	249.8	251.6	250.4	255.3	260.9	268.9	309.7	372.8	402.5
60°	228.1	228.1	226.9	228.1	228.1	230.6	234.9	243.0	276.3	328.9	353.6
62.5°	204.6	205.2	205.9	205.2	204.6	207.7	211.4	217.0	247.3	286.2	304.8
65°	181.1	181.8	183.6	183.0	182.4	185.5	186.1	192.3	215.1	248.5	262.1
67.5°	160.1	158.9	159.5	160.7	161.4	162.0	163.2	169.4	185.5	212.7	223.8
70°	135.4	136.6	136.0	137.9	136.6	138.5	139.7	144.0	159.5	177.4	184.8
72.5°	113.1	113.8	113.8	115.6	115.0	116.8	118.1	119.9	131.1	147.1	150.2
75°	92.7	92.7	94.0	94.6	94.6	94.6	95.8	97.1	106.3	116.2	119.3
77.5°	70.5	73.6	72.9	73.6	74.2	76.0	74.8	77.3	82.8	88.4	90.3
80°	51.3	51.3	51.9	52.5	53.8	55.0	55.0	57.5	60.0	63.1	64.9
82.5°	32.8	33.4	35.2	35.9	36.5	38.3	38.3	38.3	41.4	42.7	42.7
85°	20.4	19.2	20.4	21.0	21.6	22.3	22.3	23.5	24.1	24.7	24.7
87.5°	9.9	9.9	9.9	9.9	10.5	10.5	10.5	10.5	11.1	11.1	11.1
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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CANDELA DISTRIBUTION (continued):

	80°	90°	100°	110°	112.5°	120°	130°	135°	140°	150°	157.5°
0°	1332.3	1332.3	1332.3	1332.3	1332.3	1332.3	1332.3	1332.3	1332.3	1332.3	1332.3
2.5°	1363.2	1340.3	1306.3	1278.5	1279.7	1254.4	1235.8	1211.7	1204.3	1196.9	1187.0
5°	1391.6	1339.1	1268.6	1212.3	1195.0	1153.0	1099.8	1073.8	1058.4	1031.2	1020.7
7.5°	1426.9	1330.4	1222.8	1135.1	1115.9	1046.0	983.0	952.1	923.0	903.8	880.3
10°	1449.7	1315.0	1176.5	1060.2	1041.7	961.9	879.7	857.5	821.0	797.5	775.2
12.5°	1467.0	1303.2	1128.9	993.5	963.2	885.9	803.1	772.8	746.2	712.2	696.1
15°	1482.5	1281.0	1080.0	923.6	892.1	808.6	732.0	704.8	680.7	651.0	636.8
17.5°	1476.9	1253.7	1026.2	861.8	830.3	748.0	674.5	643.6	627.5	601.5	591.6
20°	1470.1	1230.3	975.6	803.1	768.4	691.8	620.1	597.8	581.7	565.1	556.4
22.5°	1448.5	1193.2	924.2	749.3	716.5	639.9	578.7	560.1	547.7	536.0	528.6
25°	1412.0	1160.4	874.2	695.5	669.5	597.8	545.9	528.6	520.5	508.8	502.0
27.5°	1366.9	1117.1	824.1	651.6	621.9	558.3	513.7	502.6	494.0	484.7	477.9
30°	1310.0	1068.9	775.2	608.9	581.7	525.5	487.2	477.3	469.2	460.0	451.9
32.5°	1237.7	1020.1	729.5	569.4	546.5	497.7	462.4	454.4	447.6	436.5	432.1
35°	1156.7	967.5	684.4	531.7	510.0	467.4	438.3	430.3	423.5	414.2	410.5
37.5°	1074.5	905.1	639.9	499.5	480.4	442.0	414.2	406.2	400.0	392.0	390.1
40°	987.3	847.6	596.0	466.8	450.1	417.3	390.1	383.9	377.7	372.8	371.5
42.5°	899.5	781.4	557.6	439.6	421.6	391.3	366.6	359.8	356.1	353.6	354.2
45°	816.7	715.3	518.1	408.0	395.7	367.8	345.0	339.4	336.3	334.5	336.9
47.5°	727.0	647.9	481.0	381.4	369.1	344.3	322.7	317.8	316.5	315.9	320.2
50°	647.9	578.0	440.8	354.2	343.7	318.4	301.1	296.7	295.5	297.4	303.5
52.5°	573.1	513.1	404.3	328.9	318.4	295.5	279.4	276.3	275.7	280.1	286.2
55°	498.9	452.5	364.7	301.1	290.6	270.8	258.4	255.3	254.7	263.4	268.9
57.5°	435.8	393.8	327.7	274.5	266.5	247.9	236.8	234.3	236.2	244.2	249.8
60°	374.0	340.0	293.7	246.1	239.9	223.8	215.1	214.5	216.4	225.7	231.2
62.5°	318.4	292.4	257.2	220.1	215.8	201.5	193.5	194.7	196.6	205.9	210.8
65°	270.8	247.9	221.3	194.1	188.6	178.7	173.1	173.7	177.4	185.5	190.4
67.5°	224.4	205.9	191.0	169.4	165.1	156.4	152.1	154.6	156.4	164.4	169.4
70°	185.5	170.6	159.5	143.4	140.3	132.9	129.8	132.9	134.8	141.6	147.8
72.5°	149.0	139.7	131.1	119.3	116.2	111.3	110.7	111.9	115.0	121.8	124.3
75°	115.6	110.7	103.2	95.8	94.0	91.5	90.9	92.1	95.2	98.9	101.4
77.5°	87.8	83.5	77.9	74.8	72.3	71.1	71.7	73.6	74.8	78.5	80.4
80°	63.7	58.7	57.5	53.2	52.5	51.9	53.2	53.8	55.6	58.1	59.3
82.5°	42.0	38.3	37.1	36.5	35.9	35.2	37.1	37.7	38.9	40.8	41.4
85°	22.9	21.6	21.6	21.0	21.6	22.9	22.9	23.5	23.5	24.1	23.5
87.5°	10.5	9.3	9.9	9.9	9.9	10.5	10.5	11.1	11.1	11.1	10.5
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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CANDELA DISTRIBUTION (continued):

	160°	170°	180°
0°	1332.3	1332.3	1332.3
2.5°	1186.4	1182.0	1164.7
5°	1011.4	996.6	991.6
7.5°	877.9	876.6	850.7
10°	764.7	766.6	743.1
12.5°	693.6	678.2	676.3
15°	633.1	618.8	616.4
17.5°	587.9	579.3	576.8
20°	553.9	549.0	544.7
22.5°	526.7	520.5	516.8
25°	499.5	494.0	492.7
27.5°	476.0	469.2	469.2
30°	451.9	447.6	445.7
32.5°	430.3	426.6	426.6
35°	409.3	407.4	404.9
37.5°	390.1	390.1	388.9
40°	371.5	373.4	373.4
42.5°	355.5	357.3	357.3
45°	338.2	341.3	342.5
47.5°	320.9	325.8	327.0
50°	305.4	309.1	309.7
52.5°	288.7	293.0	296.1
55°	271.4	275.7	277.6
57.5°	252.9	257.2	257.8
60°	232.5	236.8	238.0
62.5°	213.9	216.4	217.6
65°	191.0	194.7	197.2
67.5°	170.0	173.1	173.1
70°	147.1	148.4	150.2
72.5°	125.5	126.1	126.1
75°	102.0	103.2	103.9
77.5°	80.4	81.0	81.0
80°	59.3	58.7	58.7
82.5°	41.4	39.6	39.6
85°	23.5	22.9	23.5
87.5°	10.5	10.5	10.5
90°	0.0	0.0	0.0

(END OF REPORT)