

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: P646649

Luminaire Tested: S123DR-S775D830-X4F0-XX-UDD-G-W

Issue Date: 3/20/2023

Test Information

Test Method: LM-79-2019
Report Number: P646649
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-S775D830-X4F0-XX-UDD-G-W
Description: DEFINE 3 DIRECT RECESSED WITH WALL GRAZE FLUSH OPTIC
STANDARD LIGHT ENGINE
Light Source: 3000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3263.5 lumens
Efficiency: N/A
Efficacy: 127.0 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

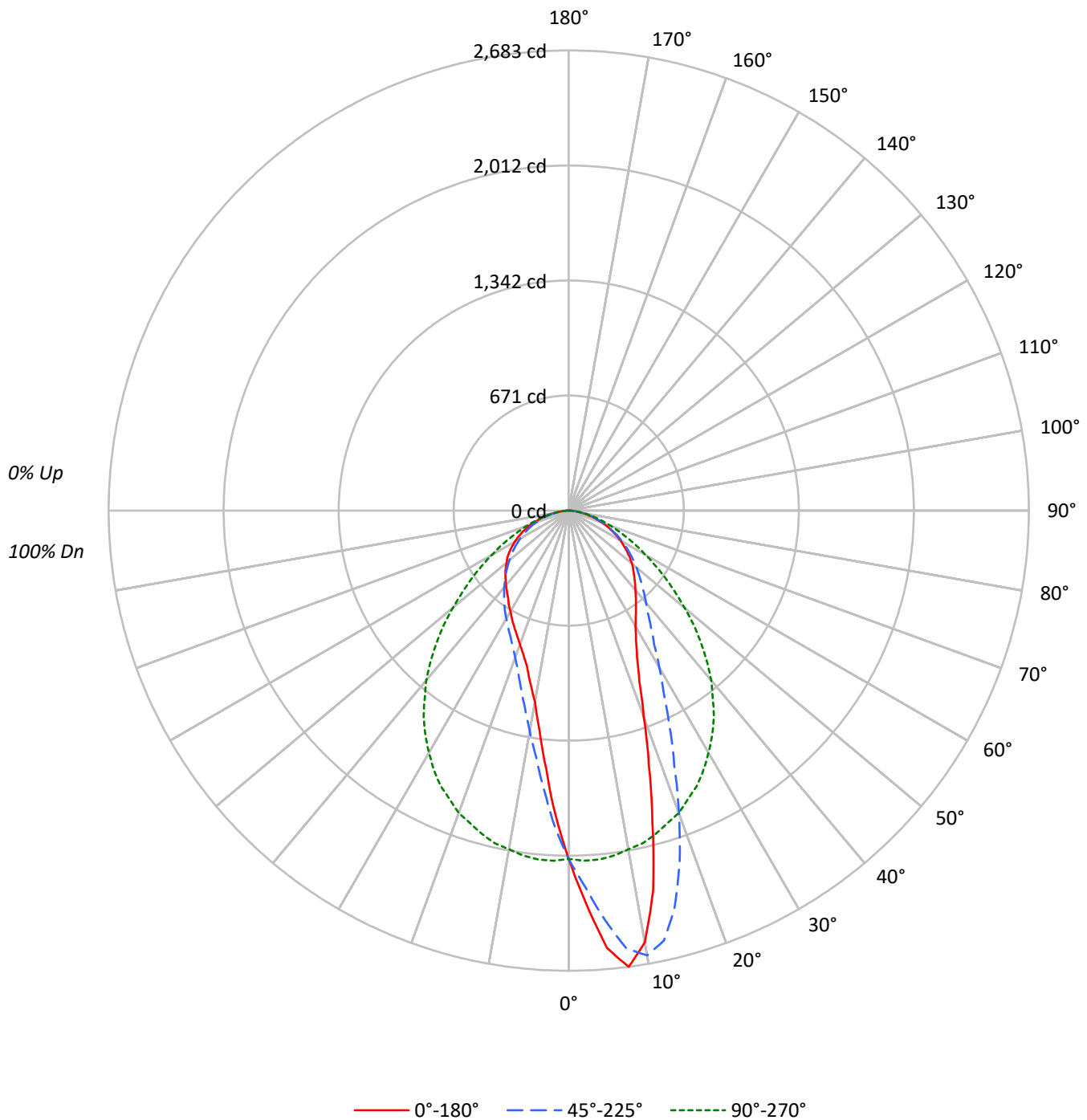
Input Watts (W): 25.7
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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Luminous Intensity Polar Plot



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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	30	10
RCR																					
0	119	119	119	119		116	116	116	116		111	111	111		106	106	106		102	102	102
1	110	106	102	98		107	103	100	97		99	96	94		95	93	91		92	90	88
2	101	94	88	82		99	92	86	82		88	84	80		85	81	78		82	79	76
3	93	84	76	70		91	82	75	70		79	73	69		77	72	67		74	70	66
4	86	75	67	61		84	74	67	61		72	65	60		69	64	59		67	62	58
5	80	68	60	54		78	67	59	54		65	58	53		63	57	52		61	56	52
6	74	62	54	48		73	61	53	48		60	53	47		58	52	47		56	51	47
7	70	57	49	43		68	56	49	43		55	48	43		53	47	43		52	47	42
8	65	53	45	39		64	52	44	39		51	44	39		49	43	39		48	43	39
9	61	49	41	36		60	48	41	36		47	40	36		46	40	36		45	40	35
10	58	45	38	33		57	45	38	33		44	37	33		43	37	33		42	37	33

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°	135°	180°
0°	24474	24474	24474	24474	24474
5°	30952	28945	24692	19802	18286
10°	31252	32221	24529	15995	13861
15°	23539	29817	24361	13404	11722
20°	16400	24111	24051	11686	10648
25°	12506	18496	23521	10714	9987
30°	10819	14701	22674	10123	9455
35°	10038	12312	21698	9649	9082
40°	9504	11015	20325	9206	8955
45°	9186	10231	18582	8818	8898
50°	9028	9665	16520	8480	8851
55°	8693	9128	14493	8178	8890
60°	8381	8632	12493	7883	8745
65°	7875	8089	10777	7553	8573
70°	7271	7504	9163	7137	8068
75°	6583	6802	7854	6536	7370
80°	5426	5822	6210	5690	6210
85°	4300	4687	4562	4949	4949

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 80°

Vertical Angle: 45°

Luminance: 21217 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	192.0	5.9
10°-20°	477.8	14.6
20°-30°	565.6	17.3
30°-40°	568.4	17.4
40°-50°	521.2	16.0
50°-60°	430.2	13.2
60°-70°	304.4	9.3
70°-80°	162.6	5.0
80°-90°	41.3	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°	1235.4	37.9
0°-40°	1803.8	55.3
0°-60°	2755.3	84.4
0°-90°	3263.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3263.5	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	2031	2031	2031	2031	2031	
5°	2559	2393	2042	1637	1512	244
15°	1887	2390	1953	1074	940	521
25°	941	1391	1769	806	751	444
35°	682	837	1475	656	617	429
45°	539	600	1090	518	522	418
55°	414	434	690	389	423	370
65°	276	284	378	265	301	274
75°	141	146	169	140	158	149
85°	31	34	33	36	36	37
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°	2031.2	2031.2	2031.2	2031.2	2031.2	2031.2	2031.2	2031.2	2031.2	2031.2	2031.2
2.5°	2289.4	2284.7	2261.2	2246.1	2249.9	2215.9	2195.2	2178.2	2166.9	2139.6	2125.4
5°	2559.0	2572.2	2557.1	2549.6	2510.9	2449.7	2393.1	2380.9	2328.1	2263.0	2240.4
7.5°	2683.4	2691.0	2681.5	2681.5	2669.3	2614.6	2575.0	2543.9	2453.4	2369.6	2330.9
10°	2554.3	2571.3	2608.0	2625.0	2649.5	2641.9	2633.5	2621.2	2559.9	2462.9	2418.6
12.5°	2270.6	2291.3	2364.8	2375.2	2459.1	2540.2	2566.5	2596.7	2602.4	2520.4	2472.3
15°	1887.0	1944.5	2011.4	2043.4	2149.9	2320.5	2390.3	2472.3	2569.4	2535.4	2497.7
17.5°	1554.3	1575.9	1647.6	1715.4	1821.9	2018.9	2148.1	2270.6	2478.9	2512.8	2489.3
20°	1279.0	1298.8	1393.1	1388.4	1529.7	1751.2	1880.4	2021.8	2329.0	2439.3	2434.6
22.5°	1074.5	1105.6	1158.4	1187.6	1289.4	1486.4	1608.9	1785.2	2158.4	2332.8	2351.6
25°	940.7	963.3	995.3	1020.8	1099.9	1262.1	1391.2	1536.3	1943.5	2193.3	2240.4
27.5°	849.2	858.7	890.7	905.8	958.6	1098.1	1198.0	1330.9	1744.6	2036.8	2102.8
30°	777.6	784.2	812.5	817.2	858.7	959.5	1056.6	1165.0	1550.5	1875.7	1951.1
32.5°	727.6	732.4	754.0	755.9	787.0	860.5	928.4	1030.2	1366.7	1703.2	1796.5
35°	682.4	685.2	701.3	706.0	725.8	781.4	837.0	915.2	1220.6	1547.7	1650.4
37.5°	642.8	646.6	656.0	661.7	677.7	722.0	759.7	824.7	1080.2	1385.5	1499.6
40°	604.2	610.8	617.4	617.4	635.3	669.2	700.3	754.0	959.5	1244.2	1345.0
42.5°	571.2	577.8	580.6	581.5	591.0	622.1	648.5	685.2	868.1	1118.8	1217.8
45°	539.1	542.0	544.8	546.7	553.3	580.6	600.4	635.3	781.4	1002.9	1099.0
47.5°	509.9	509.9	511.8	514.6	519.3	539.1	556.1	581.5	706.9	899.2	978.4
50°	481.6	481.6	478.8	480.7	483.5	498.6	515.6	536.3	637.2	804.0	874.7
52.5°	447.7	447.7	448.7	445.8	448.7	461.8	475.0	495.8	577.8	716.3	776.7
55°	413.8	417.5	414.7	412.8	416.6	425.1	434.5	452.4	522.2	646.6	694.7
57.5°	379.8	381.7	380.8	383.6	381.7	389.3	397.8	410.0	472.2	568.4	613.6
60°	347.8	347.8	345.9	347.8	347.8	351.6	358.2	370.4	421.3	501.4	539.1
62.5°	312.0	312.9	313.9	312.9	312.0	316.7	322.3	330.8	377.0	436.4	464.7
65°	276.2	277.1	279.9	279.0	278.1	282.8	283.7	293.1	328.0	378.9	399.6
67.5°	244.1	242.2	243.2	245.1	246.0	246.9	248.8	258.3	282.8	324.2	341.2
70°	206.4	208.3	207.4	210.2	208.3	211.1	213.0	219.6	243.2	270.5	281.8
72.5°	172.5	173.4	173.4	176.3	175.3	178.1	180.0	182.9	199.8	224.3	229.0
75°	141.4	141.4	143.3	144.2	144.2	144.2	146.1	148.0	162.1	177.2	181.9
77.5°	107.4	112.2	111.2	112.2	113.1	115.9	114.0	117.8	126.3	134.8	137.6
80°	78.2	78.2	79.2	80.1	82.0	83.9	83.9	87.7	91.4	96.1	99.0
82.5°	50.0	50.9	53.7	54.7	55.6	58.4	58.4	58.4	63.2	65.0	65.0
85°	31.1	29.2	31.1	32.0	33.0	33.9	33.9	35.8	36.8	37.7	37.7
87.5°	15.1	15.1	15.1	15.1	16.0	16.0	16.0	16.0	17.0	17.0	17.0
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°	2031.2	2031.2	2031.2	2031.2	2031.2	2031.2	2031.2	2031.2	2031.2	2031.2	2031.2
2.5°	2078.3	2043.4	1991.6	1949.2	1951.1	1912.4	1884.1	1847.4	1836.1	1824.8	1809.7
5°	2121.7	2041.5	1934.1	1848.3	1821.9	1757.8	1676.8	1637.2	1613.6	1572.2	1556.1
7.5°	2175.4	2028.4	1864.4	1730.5	1701.3	1594.8	1498.6	1451.5	1407.2	1378.0	1342.2
10°	2210.3	2004.8	1793.7	1616.5	1588.2	1466.6	1341.2	1307.3	1251.7	1215.9	1181.9
12.5°	2236.7	1986.9	1721.1	1514.7	1468.5	1350.7	1224.4	1178.2	1137.6	1085.8	1061.3
15°	2260.2	1952.9	1646.6	1408.2	1360.1	1232.8	1116.0	1074.5	1037.7	992.5	970.8
17.5°	2251.7	1911.5	1564.6	1313.9	1265.8	1140.5	1028.3	981.2	956.7	917.1	902.0
20°	2241.4	1875.7	1487.3	1224.4	1171.6	1054.7	945.4	911.4	886.9	861.5	848.3
22.5°	2208.4	1819.1	1409.1	1142.4	1092.4	975.5	882.2	853.9	835.1	817.2	805.9
25°	2152.8	1769.2	1332.8	1060.4	1020.8	911.4	832.3	805.9	793.6	775.7	765.3
27.5°	2084.0	1703.2	1256.4	993.4	948.2	851.1	783.3	766.3	753.1	739.0	728.6
30°	1997.2	1629.7	1181.9	928.4	886.9	801.2	742.7	727.6	715.4	701.3	689.0
32.5°	1887.0	1555.2	1112.2	868.1	833.2	758.7	705.0	692.8	682.4	665.4	658.8
35°	1763.5	1475.1	1043.4	810.6	777.6	712.6	668.3	656.0	645.6	631.5	625.8
37.5°	1638.1	1379.9	975.5	761.6	732.4	673.9	631.5	619.3	609.8	597.6	594.7
40°	1505.2	1292.2	908.6	711.6	686.2	636.2	594.7	585.3	575.9	568.4	566.5
42.5°	1371.4	1191.4	850.2	670.1	642.8	596.6	558.9	548.6	542.9	539.1	540.1
45°	1245.1	1090.5	789.9	622.1	603.2	560.8	525.9	517.5	512.7	509.9	513.7
47.5°	1108.4	987.8	733.3	581.5	562.7	525.0	492.0	484.5	482.6	481.6	488.2
50°	987.8	881.3	672.0	540.1	524.1	485.4	459.0	452.4	450.5	453.4	462.8
52.5°	873.7	782.3	616.4	501.4	485.4	450.5	426.0	421.3	420.4	427.0	436.4
55°	760.6	689.9	556.1	459.0	443.0	412.8	394.0	389.3	388.3	401.5	410.0
57.5°	664.5	600.4	499.5	418.5	406.2	378.0	361.0	357.2	360.1	372.3	380.8
60°	570.2	518.4	447.7	375.1	365.7	341.2	328.0	327.1	329.9	344.0	352.5
62.5°	485.4	445.8	392.1	335.5	328.9	307.3	295.0	296.9	299.7	313.9	321.4
65°	412.8	378.0	337.4	296.0	287.5	272.4	263.9	264.9	270.5	282.8	290.3
67.5°	342.1	313.9	291.2	258.3	251.7	238.5	231.9	235.6	238.5	250.7	258.3
70°	282.8	260.1	243.2	218.7	214.0	202.6	197.9	202.6	205.5	215.8	225.3
72.5°	227.2	213.0	199.8	181.9	177.2	169.7	168.7	170.6	175.3	185.7	189.5
75°	176.3	168.7	157.4	146.1	143.3	139.5	138.6	140.4	145.2	150.8	154.6
77.5°	133.8	127.2	118.8	114.0	110.3	108.4	109.3	112.2	114.0	119.7	122.5
80°	97.1	89.5	87.7	81.1	80.1	79.2	81.1	82.0	84.8	88.6	90.5
82.5°	64.1	58.4	56.6	55.6	54.7	53.7	56.6	57.5	59.4	62.2	63.2
85°	34.9	33.0	33.0	32.0	33.0	34.9	34.9	35.8	35.8	36.8	35.8
87.5°	16.0	14.1	15.1	15.1	15.1	16.0	16.0	17.0	17.0	17.0	16.0
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°	2031.2	2031.2	2031.2
2.5°	1808.7	1802.1	1775.8
5°	1542.0	1519.4	1511.8
7.5°	1338.4	1336.5	1296.9
10°	1165.9	1168.8	1132.9
12.5°	1057.5	1034.0	1031.1
15°	965.2	943.5	939.7
17.5°	896.4	883.2	879.4
20°	844.5	837.0	830.4
22.5°	803.0	793.6	788.0
25°	761.6	753.1	751.2
27.5°	725.8	715.4	715.4
30°	689.0	682.4	679.6
32.5°	656.0	650.4	650.4
35°	624.0	621.1	617.4
37.5°	594.7	594.7	592.9
40°	566.5	569.3	569.3
42.5°	542.0	544.8	544.8
45°	515.6	520.3	522.2
47.5°	489.2	496.7	498.6
50°	465.6	471.3	472.2
52.5°	440.2	446.8	451.5
55°	413.8	420.4	423.2
57.5°	385.5	392.1	393.0
60°	354.4	361.0	362.9
62.5°	326.1	329.9	331.8
65°	291.2	296.9	300.7
67.5°	259.2	263.9	263.9
70°	224.3	226.2	229.0
72.5°	191.3	192.3	192.3
75°	155.5	157.4	158.3
77.5°	122.5	123.5	123.5
80°	90.5	89.5	89.5
82.5°	63.2	60.3	60.3
85°	35.8	34.9	35.8
87.5°	16.0	16.0	16.0
90°	0.0	0.0	0.0

(END OF REPORT)