

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: P646655

Luminaire Tested: S123DR-S775D935-X4F0-XX-UDD-G-W

Issue Date: 3/20/2023

Test Information

Test Method: LM-79-2019
Report Number: P646655
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-S775D935-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: 2981.2 lumens
Efficiency: N/A
Efficacy: 116.0 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

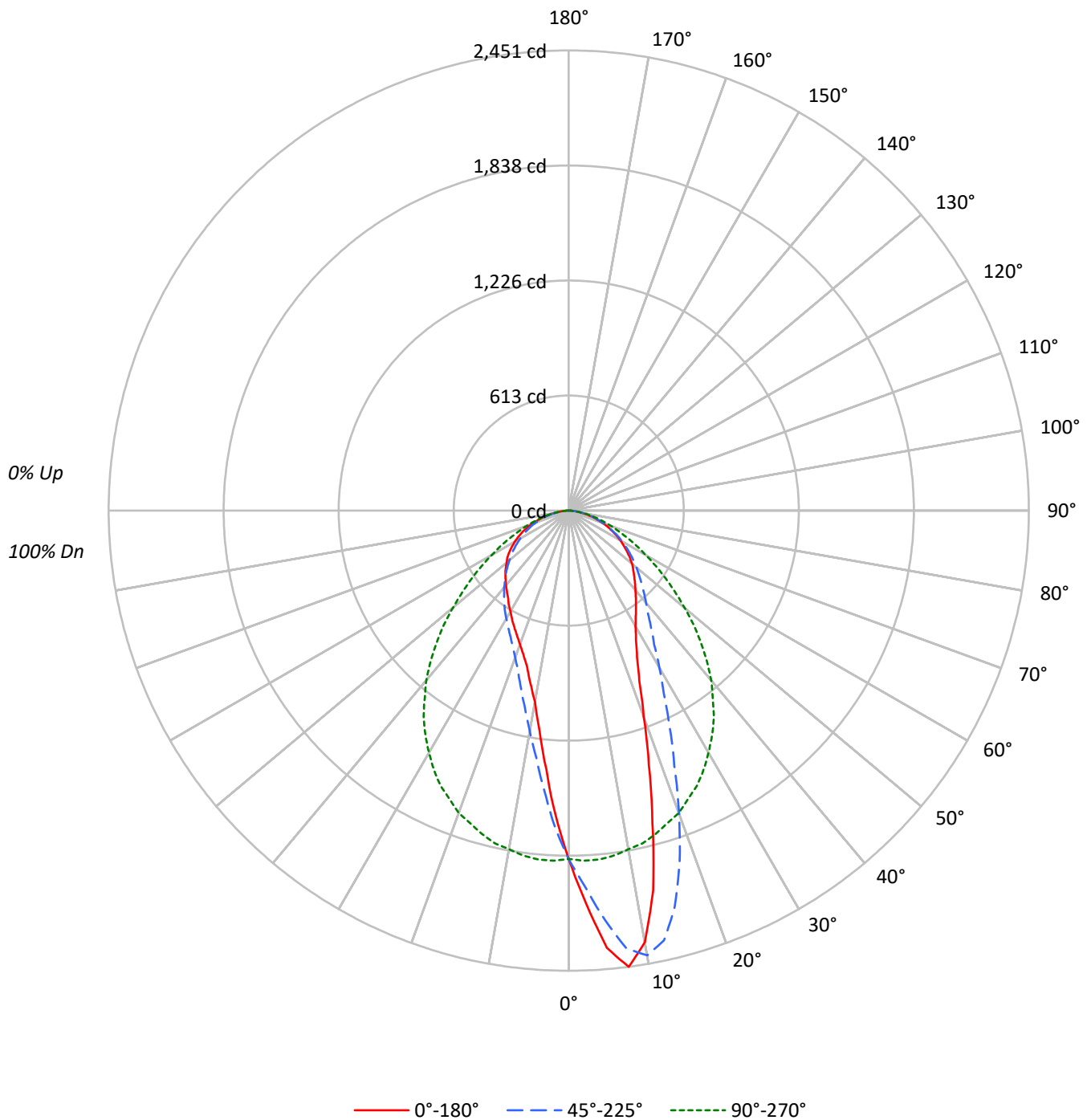
Input Watts (W): 25.7
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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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	50	30	10
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		

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°	135°	180°
0°	22357	22357	22357	22357	22357
5°	28274	26441	22556	18090	16703
10°	28548	29433	22406	14611	12662
15°	21502	27237	22254	12243	10708
20°	14982	22025	21970	10676	9726
25°	11424	16895	21486	9788	9123
30°	9883	13429	20713	9248	8637
35°	9170	11247	19821	8815	8296
40°	8681	10062	18567	8410	8179
45°	8392	9346	16975	8055	8128
50°	8248	8829	15090	7747	8087
55°	7941	8338	13241	7470	8121
60°	7656	7885	11411	7201	7989
65°	7193	7390	9845	6897	7832
70°	6644	6856	8371	6521	7370
75°	6010	6215	7174	5973	6732
80°	4961	5315	5676	5197	5676
85°	3926	4286	4161	4521	4521

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 80°

Vertical Angle: 45°

Luminance: 19381 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	175.4	5.9
10°-20°	436.5	14.6
20°-30°	516.6	17.3
30°-40°	519.2	17.4
40°-50°	476.2	16.0
50°-60°	393.0	13.2
60°-70°	278.1	9.3
70°-80°	148.5	5.0
80°-90°	37.7	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°	1128.5	37.9
0°-40°	1647.7	55.3
0°-60°	2516.9	84.4
0°-90°	2981.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2981.2	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1856	1856	1856	1856	1856	
5°	2338	2186	1865	1496	1381	223
15°	1724	2184	1784	982	858	476
25°	859	1271	1616	736	686	406
35°	623	765	1348	599	564	392
45°	492	548	996	473	477	381
55°	378	397	630	356	387	338
65°	252	259	345	242	275	251
75°	129	134	154	128	145	136
85°	28	31	30	33	33	34
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°	1855.5	1855.5	1855.5	1855.5	1855.5	1855.5	1855.5	1855.5	1855.5	1855.5	1855.5
2.5°	2091.4	2087.1	2065.5	2051.8	2055.2	2024.2	2005.3	1989.8	1979.4	1954.5	1941.6
5°	2337.6	2349.7	2335.9	2329.0	2293.7	2237.7	2186.1	2174.9	2126.7	2067.3	2046.6
7.5°	2451.3	2458.2	2449.5	2449.5	2438.3	2388.4	2352.2	2323.8	2241.2	2164.6	2129.2
10°	2333.3	2348.8	2382.4	2397.9	2420.3	2413.4	2405.6	2394.4	2338.5	2249.8	2209.3
12.5°	2074.1	2093.1	2160.2	2169.7	2246.3	2320.4	2344.5	2372.1	2377.2	2302.3	2258.4
15°	1723.7	1776.2	1837.4	1866.6	1963.9	2119.8	2183.5	2258.4	2347.1	2316.1	2281.6
17.5°	1419.8	1439.6	1505.0	1567.0	1664.3	1844.3	1962.2	2074.1	2264.4	2295.4	2273.9
20°	1168.4	1186.5	1272.6	1268.3	1397.4	1599.7	1717.7	1846.8	2127.5	2228.3	2224.0
22.5°	981.5	1010.0	1058.2	1084.9	1177.8	1357.8	1469.7	1630.7	1971.7	2131.0	2148.2
25°	859.3	879.9	909.2	932.5	1004.8	1152.9	1270.8	1403.4	1775.4	2003.5	2046.6
27.5°	775.8	784.4	813.6	827.4	875.6	1003.1	1094.3	1215.7	1593.7	1860.6	1920.9
30°	710.3	716.4	742.2	746.5	784.4	876.5	965.2	1064.2	1416.3	1713.4	1782.3
32.5°	664.7	669.0	688.8	690.5	718.9	786.1	848.1	941.1	1248.4	1555.8	1641.1
35°	623.4	625.9	640.6	644.9	663.0	713.8	764.6	836.0	1115.0	1413.8	1507.6
37.5°	587.2	590.6	599.3	604.4	619.1	659.5	694.0	753.4	986.7	1265.7	1369.8
40°	551.9	557.9	564.0	564.0	580.3	611.3	639.7	688.8	876.5	1136.5	1228.6
42.5°	521.8	527.8	530.4	531.2	539.8	568.3	592.4	625.9	793.0	1022.0	1112.4
45°	492.5	495.1	497.7	499.4	505.4	530.4	548.5	580.3	713.8	916.1	1003.9
47.5°	465.8	465.8	467.5	470.1	474.4	492.5	508.0	531.2	645.7	821.4	893.7
50°	440.0	440.0	437.4	439.1	441.7	455.5	471.0	489.9	582.0	734.4	799.0
52.5°	409.0	409.0	409.8	407.3	409.8	421.9	433.9	452.9	527.8	654.4	709.5
55°	378.0	381.4	378.8	377.1	380.6	388.3	396.9	413.3	477.0	590.6	634.6
57.5°	347.0	348.7	347.8	350.4	348.7	355.6	363.3	374.5	431.4	519.2	560.5
60°	317.7	317.7	316.0	317.7	317.7	321.2	327.2	338.4	384.9	458.1	492.5
62.5°	285.0	285.9	286.7	285.9	285.0	289.3	294.5	302.2	344.4	398.6	424.5
65°	252.3	253.1	255.7	254.9	254.0	258.3	259.2	267.8	299.6	346.1	365.1
67.5°	223.0	221.3	222.1	223.9	224.7	225.6	227.3	235.9	258.3	296.2	311.7
70°	188.6	190.3	189.4	192.0	190.3	192.9	194.6	200.6	222.1	247.1	257.4
72.5°	157.6	158.4	158.4	161.0	160.1	162.7	164.5	167.0	182.5	204.9	209.2
75°	129.1	129.1	130.9	131.7	131.7	131.7	133.5	135.2	148.1	161.9	166.2
77.5°	98.2	102.5	101.6	102.5	103.3	105.9	104.2	107.6	115.4	123.1	125.7
80°	71.5	71.5	72.3	73.2	74.9	76.6	76.6	80.1	83.5	87.8	90.4
82.5°	45.6	46.5	49.1	49.9	50.8	53.4	53.4	53.4	57.7	59.4	59.4
85°	28.4	26.7	28.4	29.3	30.1	31.0	31.0	32.7	33.6	34.4	34.4
87.5°	13.8	13.8	13.8	13.8	14.6	14.6	14.6	14.6	15.5	15.5	15.5
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):

	80°	90°	100°	110°	112.5°	120°	130°	135°	140°	150°	157.5°
0°	1855.5	1855.5	1855.5	1855.5	1855.5	1855.5	1855.5	1855.5	1855.5	1855.5	1855.5
2.5°	1898.5	1866.6	1819.3	1780.5	1782.3	1747.0	1721.1	1687.6	1677.2	1666.9	1653.1
5°	1938.1	1864.9	1766.8	1688.4	1664.3	1605.8	1531.7	1495.6	1474.0	1436.1	1421.5
7.5°	1987.2	1852.9	1703.1	1580.8	1554.1	1456.8	1369.0	1325.9	1285.5	1258.8	1226.1
10°	2019.0	1831.3	1638.5	1476.6	1450.8	1339.7	1225.2	1194.2	1143.4	1110.7	1079.7
12.5°	2043.2	1815.0	1572.2	1383.6	1341.4	1233.8	1118.4	1076.2	1039.2	991.9	969.5
15°	2064.7	1784.0	1504.2	1286.3	1242.4	1126.2	1019.4	981.5	948.0	906.6	886.8
17.5°	2056.9	1746.1	1429.3	1200.2	1156.3	1041.8	939.3	896.3	873.9	837.8	824.0
20°	2047.5	1713.4	1358.7	1118.4	1070.2	963.5	863.6	832.6	810.2	787.0	774.9
22.5°	2017.3	1661.7	1287.2	1043.5	997.9	891.1	805.9	780.1	762.8	746.5	736.2
25°	1966.5	1616.1	1217.5	968.6	932.5	832.6	760.3	736.2	725.0	708.6	699.1
27.5°	1903.7	1555.8	1147.7	907.5	866.2	777.5	715.5	700.0	687.9	675.0	665.6
30°	1824.5	1488.7	1079.7	848.1	810.2	731.8	678.5	664.7	653.5	640.6	629.4
32.5°	1723.7	1420.6	1016.0	793.0	761.1	693.1	644.0	632.8	623.4	607.9	601.8
35°	1610.9	1347.5	953.1	740.5	710.3	650.9	610.4	599.3	589.8	576.9	571.7
37.5°	1496.4	1260.5	891.1	695.7	669.0	615.6	576.9	565.7	557.1	545.9	543.3
40°	1375.0	1180.4	830.0	650.1	626.8	581.2	543.3	534.7	526.1	519.2	517.5
42.5°	1252.8	1088.3	776.6	612.2	587.2	545.0	510.6	501.1	495.9	492.5	493.4
45°	1137.4	996.2	721.5	568.3	551.0	512.3	480.4	472.7	468.4	465.8	469.2
47.5°	1012.5	902.3	669.9	531.2	514.0	479.6	449.4	442.6	440.8	440.0	446.0
50°	902.3	805.0	613.9	493.4	478.7	443.4	419.3	413.3	411.6	414.1	422.8
52.5°	798.1	714.6	563.1	458.1	443.4	411.6	389.2	384.9	384.0	390.0	398.6
55°	694.8	630.3	508.0	419.3	404.7	377.1	359.9	355.6	354.7	366.8	374.5
57.5°	607.0	548.5	456.3	382.3	371.1	345.3	329.8	326.3	328.9	340.1	347.8
60°	520.9	473.5	409.0	342.7	334.1	311.7	299.6	298.8	301.3	314.3	322.0
62.5°	443.4	407.3	358.2	306.5	300.5	280.7	269.5	271.2	273.8	286.7	293.6
65°	377.1	345.3	308.2	270.4	262.6	248.8	241.1	241.9	247.1	258.3	265.2
67.5°	312.5	286.7	266.0	235.9	229.9	217.8	211.8	215.2	217.8	229.0	235.9
70°	258.3	237.6	222.1	199.8	195.4	185.1	180.8	185.1	187.7	197.2	205.8
72.5°	207.5	194.6	182.5	166.2	161.9	155.0	154.1	155.8	160.1	169.6	173.1
75°	161.0	154.1	143.8	133.5	130.9	127.4	126.6	128.3	132.6	137.8	141.2
77.5°	122.3	116.2	108.5	104.2	100.7	99.0	99.9	102.5	104.2	109.3	111.9
80°	88.7	81.8	80.1	74.0	73.2	72.3	74.0	74.9	77.5	80.9	82.7
82.5°	58.5	53.4	51.7	50.8	49.9	49.1	51.7	52.5	54.2	56.8	57.7
85°	31.9	30.1	30.1	29.3	30.1	31.9	31.9	32.7	32.7	33.6	32.7
87.5°	14.6	12.9	13.8	13.8	13.8	14.6	14.6	15.5	15.5	15.5	14.6
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°	1855.5	1855.5	1855.5
2.5°	1652.3	1646.2	1622.1
5°	1408.6	1387.9	1381.0
7.5°	1222.6	1220.9	1184.7
10°	1065.1	1067.6	1034.9
12.5°	966.0	944.5	941.9
15°	881.7	861.9	858.4
17.5°	818.8	806.8	803.3
20°	771.5	764.6	758.5
22.5°	733.6	725.0	719.8
25°	695.7	687.9	686.2
27.5°	663.0	653.5	653.5
30°	629.4	623.4	620.8
32.5°	599.3	594.1	594.1
35°	570.0	567.4	564.0
37.5°	543.3	543.3	541.6
40°	517.5	520.0	520.0
42.5°	495.1	497.7	497.7
45°	471.0	475.3	477.0
47.5°	446.9	453.7	455.5
50°	425.3	430.5	431.4
52.5°	402.1	408.1	412.4
55°	378.0	384.0	386.6
57.5°	352.1	358.2	359.0
60°	323.7	329.8	331.5
62.5°	297.9	301.3	303.1
65°	266.0	271.2	274.7
67.5°	236.8	241.1	241.1
70°	204.9	206.6	209.2
72.5°	174.8	175.6	175.6
75°	142.1	143.8	144.6
77.5°	111.9	112.8	112.8
80°	82.7	81.8	81.8
82.5°	57.7	55.1	55.1
85°	32.7	31.9	32.7
87.5°	14.6	14.6	14.6
90°	0.0	0.0	0.0

(END OF REPORT)