

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: P646650

Luminaire Tested: S123DR-S775D835-X4F0-XX-UDD-G-W

Issue Date: 3/20/2023

Test Information

Test Method: LM-79-2019
Report Number: P646650
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 3/20/2023
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: S123DR-S775D835-X4F0-XX-UDD-G-W
Description: DEFINE 3 DIRECT RECESSED WITH WALL GRAZE FLUSH OPTIC
STANDARD LIGHT ENGINE
Light Source: 3500K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3462.5 lumens
Efficiency: N/A
Efficacy: 134.7 lumens/watt
Spacing Criteria (0/90/45): 0.65 / 1.19 / 0.89
Luminous Opening: Rectangular (W 4' x L: 0.25' x H: 0')
CIE Type: Direct

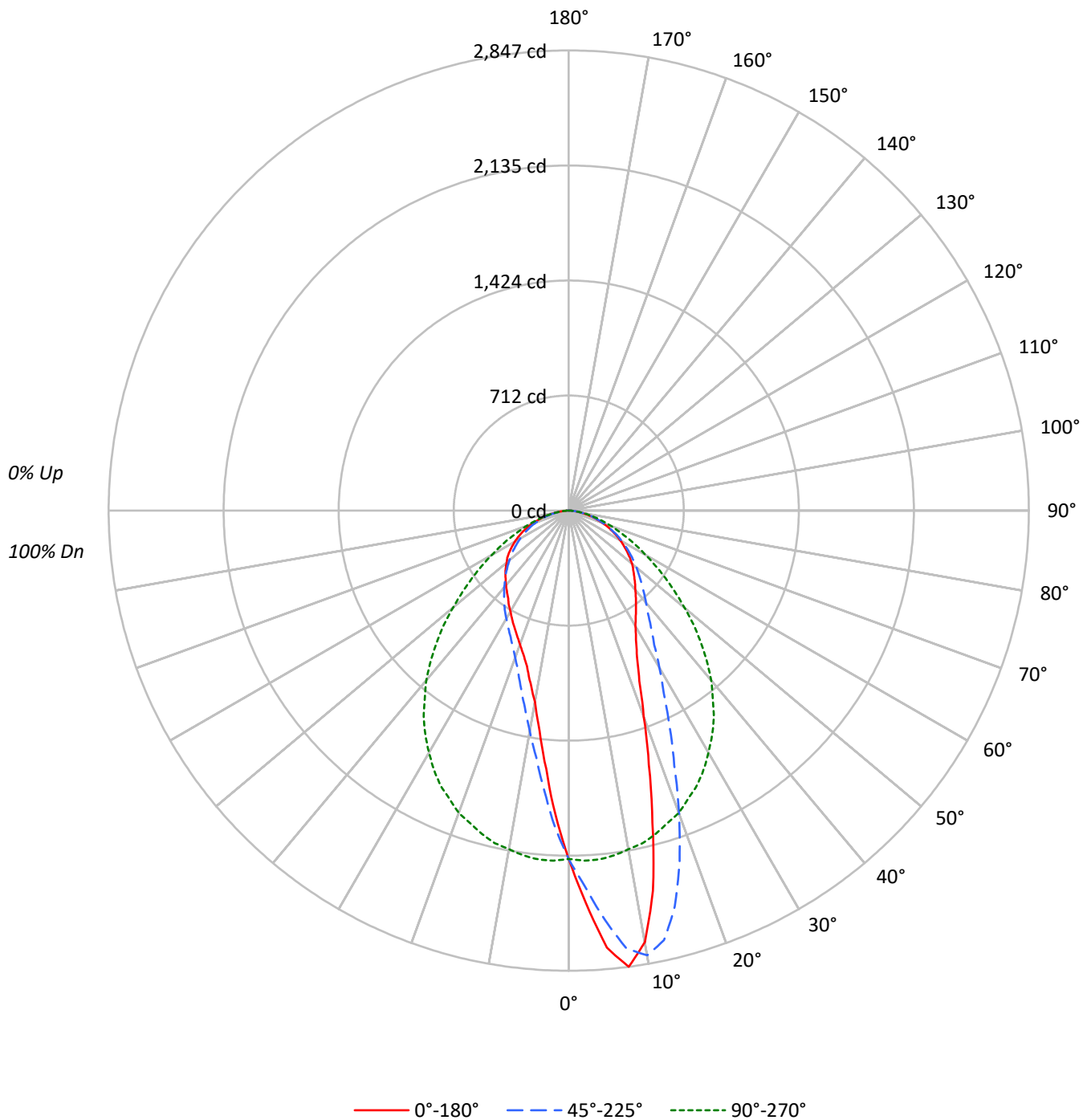
Input Watts (W): 25.7
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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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°	23196	23196	23196	23196	23196
5°	29336	27434	23404	18768	17331
10°	29620	30538	23248	15160	13138
15°	22310	28260	23090	12704	11110
20°	15544	22852	22795	11077	10092
25°	11853	17530	22293	10155	9466
30°	10254	13933	21490	9595	8961
35°	9514	11669	20565	9146	8607
40°	9007	10440	19264	8726	8487
45°	8707	9697	17612	8357	8433
50°	8557	9160	15657	8038	8390
55°	8238	8651	13737	7750	8426
60°	7944	8181	11840	7470	8288
65°	7463	7666	10213	7157	8125
70°	6892	7113	8686	6766	7648
75°	6238	6446	7444	6197	6987
80°	5145	5517	5889	5393	5889
85°	4076	4446	4323	4693	4693

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 80°

Vertical Angle: 45°

Luminance: 20109 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	203.7	5.9
10°-20°	506.9	14.6
20°-30°	600.0	17.3
30°-40°	603.0	17.4
40°-50°	553.0	16.0
50°-60°	456.5	13.2
60°-70°	323.0	9.3
70°-80°	172.5	5.0
80°-90°	43.8	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°	1310.7	37.9
0°-40°	1913.7	55.3
0°-60°	2923.2	84.4
0°-90°	3462.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3462.5	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	2155	2155	2155	2155	2155	
5°	2715	2539	2166	1737	1604	259
15°	2002	2536	2072	1140	997	553
25°	998	1476	1877	855	797	471
35°	724	888	1565	696	655	455
45°	572	637	1157	549	554	443
55°	439	461	732	413	449	393
65°	293	301	401	281	319	291
75°	150	155	179	149	168	158
85°	33	36	35	38	38	39
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°	2155	2155	2155	2155	2155	2155	2155	2155	2155	2155	2155
2.5°	2429	2424	2399	2383	2387	2351	2329	2311	2299	2270	2255
5°	2715	2729	2713	2705	2664	2599	2539	2526	2470	2401	2377
7.5°	2847	2855	2845	2845	2832	2774	2732	2699	2603	2514	2473
10°	2710	2728	2767	2785	2811	2803	2794	2781	2716	2613	2566
12.5°	2409	2431	2509	2520	2609	2695	2723	2755	2761	2674	2623
15°	2002	2063	2134	2168	2281	2462	2536	2623	2726	2690	2650
17.5°	1649	1672	1748	1820	1933	2142	2279	2409	2630	2666	2641
20°	1357	1378	1478	1473	1623	1858	1995	2145	2471	2588	2583
22.5°	1140	1173	1229	1260	1368	1577	1707	1894	2290	2475	2495
25°	998	1022	1056	1083	1167	1339	1476	1630	2062	2327	2377
27.5°	901	911	945	961	1017	1165	1271	1412	1851	2161	2231
30°	825	832	862	867	911	1018	1121	1236	1645	1990	2070
32.5°	772	777	800	802	835	913	985	1093	1450	1807	1906
35°	724	727	744	749	770	829	888	971	1295	1642	1751
37.5°	682	686	696	702	719	766	806	875	1146	1470	1591
40°	641	648	655	655	674	710	743	800	1018	1320	1427
42.5°	606	613	616	617	627	660	688	727	921	1187	1292
45°	572	575	578	580	587	616	637	674	829	1064	1166
47.5°	541	541	543	546	551	572	590	617	750	954	1038
50°	511	511	508	510	513	529	547	569	676	853	928
52.5°	475	475	476	473	476	490	504	526	613	760	824
55°	439	443	440	438	442	451	461	480	554	686	737
57.5°	403	405	404	407	405	413	422	435	501	603	651
60°	369	369	367	369	369	373	380	393	447	532	572
62.5°	331	332	333	332	331	336	342	351	400	463	493
65°	293	294	297	296	295	300	301	311	348	402	424
67.5°	259	257	258	260	261	262	264	274	300	344	362
70°	219	221	220	223	221	224	226	233	258	287	299
72.5°	183	184	184	187	186	189	191	194	212	238	243
75°	150	150	152	153	153	153	155	157	172	188	193
77.5°	114	119	118	119	120	123	121	125	134	143	146
80°	83	83	84	85	87	89	89	93	97	102	105
82.5°	53	54	57	58	59	62	62	62	67	69	69
85°	33	31	33	34	35	36	36	38	39	40	40
87.5°	16	16	16	16	17	17	17	17	18	18	18
90°	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°	2155	2155	2155	2155	2155	2155	2155	2155	2155	2155	2155
2.5°	2205	2168	2113	2068	2070	2029	1999	1960	1948	1936	1920
5°	2251	2166	2052	1961	1933	1865	1779	1737	1712	1668	1651
7.5°	2308	2152	1978	1836	1805	1692	1590	1540	1493	1462	1424
10°	2345	2127	1903	1715	1685	1556	1423	1387	1328	1290	1254
12.5°	2373	2108	1826	1607	1558	1433	1299	1250	1207	1152	1126
15°	2398	2072	1747	1494	1443	1308	1184	1140	1101	1053	1030
17.5°	2389	2028	1660	1394	1343	1210	1091	1041	1015	973	957
20°	2378	1990	1578	1299	1243	1119	1003	967	941	914	900
22.5°	2343	1930	1495	1212	1159	1035	936	906	886	867	855
25°	2284	1877	1414	1125	1083	967	883	855	842	823	812
27.5°	2211	1807	1333	1054	1006	903	831	813	799	784	773
30°	2119	1729	1254	985	941	850	788	772	759	744	731
32.5°	2002	1650	1180	921	884	805	748	735	724	706	699
35°	1871	1565	1107	860	825	756	709	696	685	670	664
37.5°	1738	1464	1035	808	777	715	670	657	647	634	631
40°	1597	1371	964	755	728	675	631	621	611	603	601
42.5°	1455	1264	902	711	682	633	593	582	576	572	573
45°	1321	1157	838	660	640	595	558	549	544	541	545
47.5°	1176	1048	778	617	597	557	522	514	512	511	518
50°	1048	935	713	573	556	515	487	480	478	481	491
52.5°	927	830	654	532	515	478	452	447	446	453	463
55°	807	732	590	487	470	438	418	413	412	426	435
57.5°	705	637	530	444	431	401	383	379	382	395	404
60°	605	550	475	398	388	362	348	347	350	365	374
62.5°	515	473	416	356	349	326	313	315	318	333	341
65°	438	401	358	314	305	289	280	281	287	300	308
67.5°	363	333	309	274	267	253	246	250	253	266	274
70°	300	276	258	232	227	215	210	215	218	229	239
72.5°	241	226	212	193	188	180	179	181	186	197	201
75°	187	179	167	155	152	148	147	149	154	160	164
77.5°	142	135	126	121	117	115	116	119	121	127	130
80°	103	95	93	86	85	84	86	87	90	94	96
82.5°	68	62	60	59	58	57	60	61	63	66	67
85°	37	35	35	34	35	37	37	38	38	39	38
87.5°	17	15	16	16	16	17	17	18	18	18	17
90°	0	0	0	0	0	0	0	0	0	0	0



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CANDELA DISTRIBUTION (continued):

	160°	170°	180°
0°	2155	2155	2155
2.5°	1919	1912	1884
5°	1636	1612	1604
7.5°	1420	1418	1376
10°	1237	1240	1202
12.5°	1122	1097	1094
15°	1024	1001	997
17.5°	951	937	933
20°	896	888	881
22.5°	852	842	836
25°	808	799	797
27.5°	770	759	759
30°	731	724	721
32.5°	696	690	690
35°	662	659	655
37.5°	631	631	629
40°	601	604	604
42.5°	575	578	578
45°	547	552	554
47.5°	519	527	529
50°	494	500	501
52.5°	467	474	479
55°	439	446	449
57.5°	409	416	417
60°	376	383	385
62.5°	346	350	352
65°	309	315	319
67.5°	275	280	280
70°	238	240	243
72.5°	203	204	204
75°	165	167	168
77.5°	130	131	131
80°	96	95	95
82.5°	67	64	64
85°	38	37	38
87.5°	17	17	17
90°	0	0	0

(END OF REPORT)