

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: P646650

Luminaire Tested: S123DRP-S775D835-X4F0-XX-UDD-G-W

Issue Date: 3/20/2023

**Test Information**

Test Method: LM-79-2024  
Report Number: P646650  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 3/20/2023  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: S123DRP-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: -

**Summary**

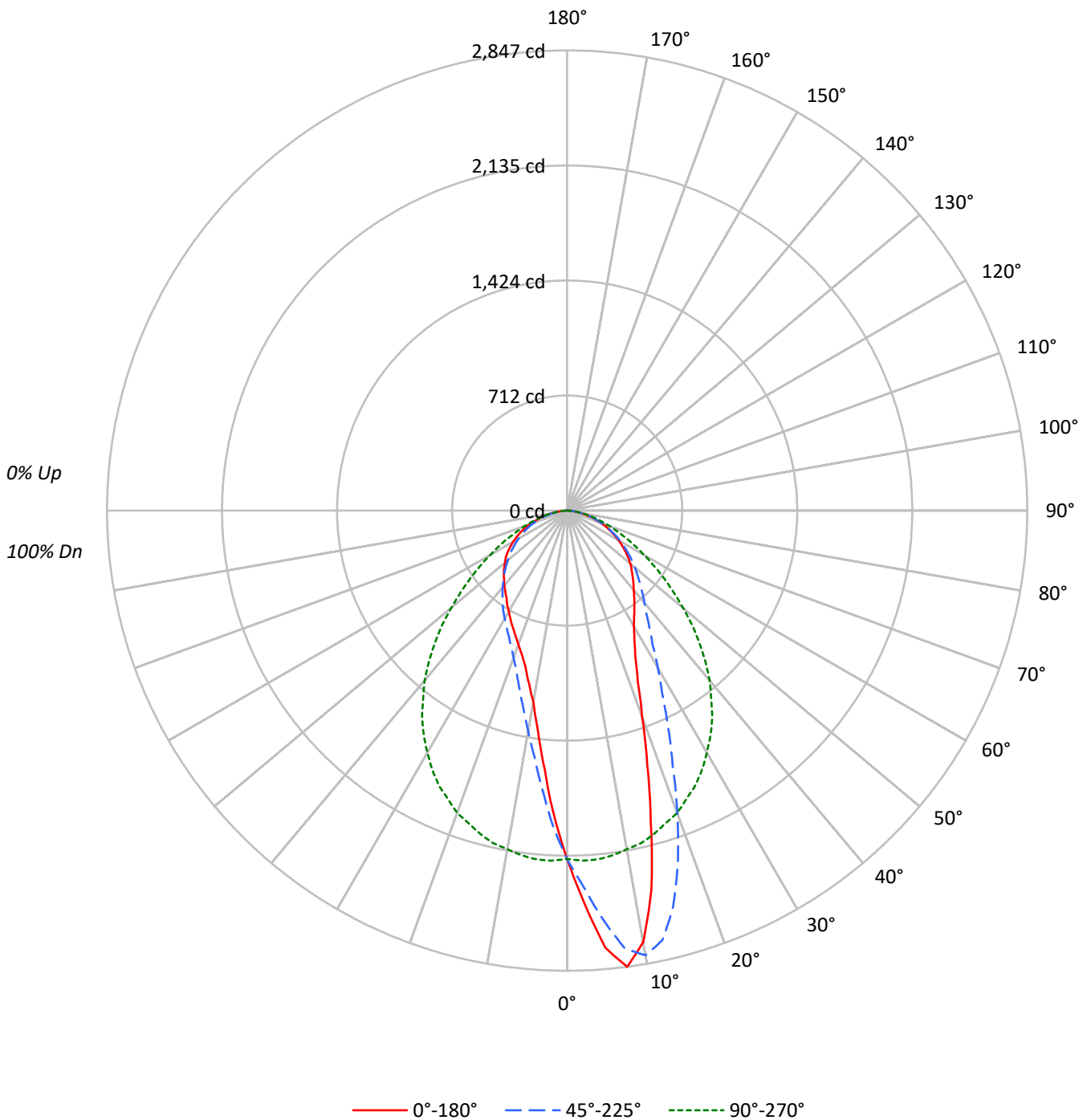
Lumens per Lamp: N/A  
Luminaire Lumens: 3462.5 lumens  
Efficiency: N/A  
Efficacy: 134.7 lumens/watt  
Spacing Criteria (0/90/45): 0.65 / 1.19 / 0.89  
Luminous Opening: Rectangular (W 4' x L: 0.25' x H: 0')  
CIE Type: Direct

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

TEST NUMBER: P646650

CATALOG NUMBER: S123DRP-S775D835-X4F0-XX-UDD-G-W

### Luminous Intensity Polar Plot





TEST NUMBER: P646650

CATALOG NUMBER: S123DRP-S775D835-X4F0-XX-UDD-G-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					86			
2	101	94	88	82	99	92	86	82	88	84	80	85	81	78	82	79	76	74					74			
3	93	84	76	70	91	82	75	70	79	73	69	77	72	67	74	70	66	64					64			
4	86	75	67	61	84	74	67	61	72	65	60	69	64	59	67	62	58	56					56			
5	80	68	60	54	78	67	59	54	65	58	53	63	57	52	61	56	52	50					50			
6	74	62	54	48	73	61	53	48	60	53	47	58	52	47	56	51	47	45					45			
7	70	57	49	43	68	56	49	43	55	48	43	53	47	43	52	47	42	40					40			
8	65	53	45	39	64	52	44	39	51	44	39	49	43	39	48	43	39	37					37			
9	61	49	41	36	60	48	41	36	47	40	36	46	40	36	45	40	35	34					34			
10	58	45	38	33	57	45	38	33	44	37	33	43	37	33	42	37	33	31					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



TEST NUMBER: P646650

CATALOG NUMBER: S123DRP-S775D835-X4F0-XX-UDD-G-W

**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	



TEST NUMBER: P646650

CATALOG NUMBER: S123DRP-S775D835-X4F0-XX-UDD-G-W

**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



TEST NUMBER: P646650

CATALOG NUMBER: S123DRP-S775D835-X4F0-XX-UDD-G-W

**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

TEST NUMBER: P646650

CATALOG NUMBER: S123DRP-S775D835-X4F0-XX-UDD-G-W

**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



TEST NUMBER: P646650  
 CATALOG NUMBER: S123DRP-S775D835-X4F0-XX-UDD-G-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	18.41	19.92	18.78	20.23	20.55	20.87	22.37	21.23	22.69	23.00
	3H	20.10	21.46	20.48	21.79	22.15	22.08	23.43	22.46	23.76	24.12
	4H	20.71	21.98	21.11	22.33	22.71	22.50	23.77	22.90	24.12	24.50
	6H	21.11	22.29	21.52	22.65	23.05	22.77	23.95	23.19	24.31	24.71
	8H	21.21	22.33	21.64	22.72	23.12	22.84	23.96	23.27	24.35	24.75
	12H	21.27	22.34	21.70	22.72	23.15	22.88	23.95	23.31	24.33	24.76
4H	2H	19.06	20.33	19.46	20.68	21.06	21.09	22.36	21.49	22.71	23.09
	3H	20.94	22.00	21.36	22.40	22.80	22.57	23.63	22.98	24.03	24.43
	4H	21.67	22.62	22.10	23.03	23.47	23.13	24.09	23.57	24.50	24.94
	6H	22.18	23.01	22.64	23.45	23.91	23.53	24.36	23.99	24.80	25.26
	8H	22.31	23.09	22.78	23.53	24.00	23.63	24.41	24.10	24.85	25.32
	12H	22.40	23.09	22.88	23.57	24.04	23.70	24.39	24.18	24.87	25.34
8H	4H	21.99	22.77	22.45	23.21	23.68	23.30	24.07	23.76	24.52	24.99
	6H	22.61	23.25	23.10	23.74	24.21	23.79	24.43	24.29	24.92	25.40
	8H	22.80	23.38	23.32	23.89	24.37	23.95	24.53	24.47	25.04	25.53
	12H	22.95	23.45	23.46	23.94	24.51	24.07	24.58	24.58	25.07	25.64
12H	4H	22.02	22.72	22.51	23.19	23.66	23.31	24.00	23.79	24.48	24.95
	6H	22.66	23.23	23.17	23.74	24.23	23.81	24.39	24.32	24.89	25.38
	8H	22.91	23.41	23.42	23.91	24.47	24.02	24.53	24.53	25.02	25.58