

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: P646695

Luminaire Tested: S123RDRP-S775D835-X4F0-XX-UDD-G-W

Issue Date: 3/20/2023

**Test Information**

Test Method: LM-79-2024  
Report Number: P646695  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 3/20/2023  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: S123RDRP-S775D835-X4F0-XX-UDD-G-W  
Description: DEFINE 3 REGRESSED DIRECT RECESSED WITH WALL GRAZE FLUSH OPTIC  
STANDARD LIGHT ENGINE  
Light Source: 3500K CCT, 80 CRI LEDS  
Ballast/Driver: -

**Summary**

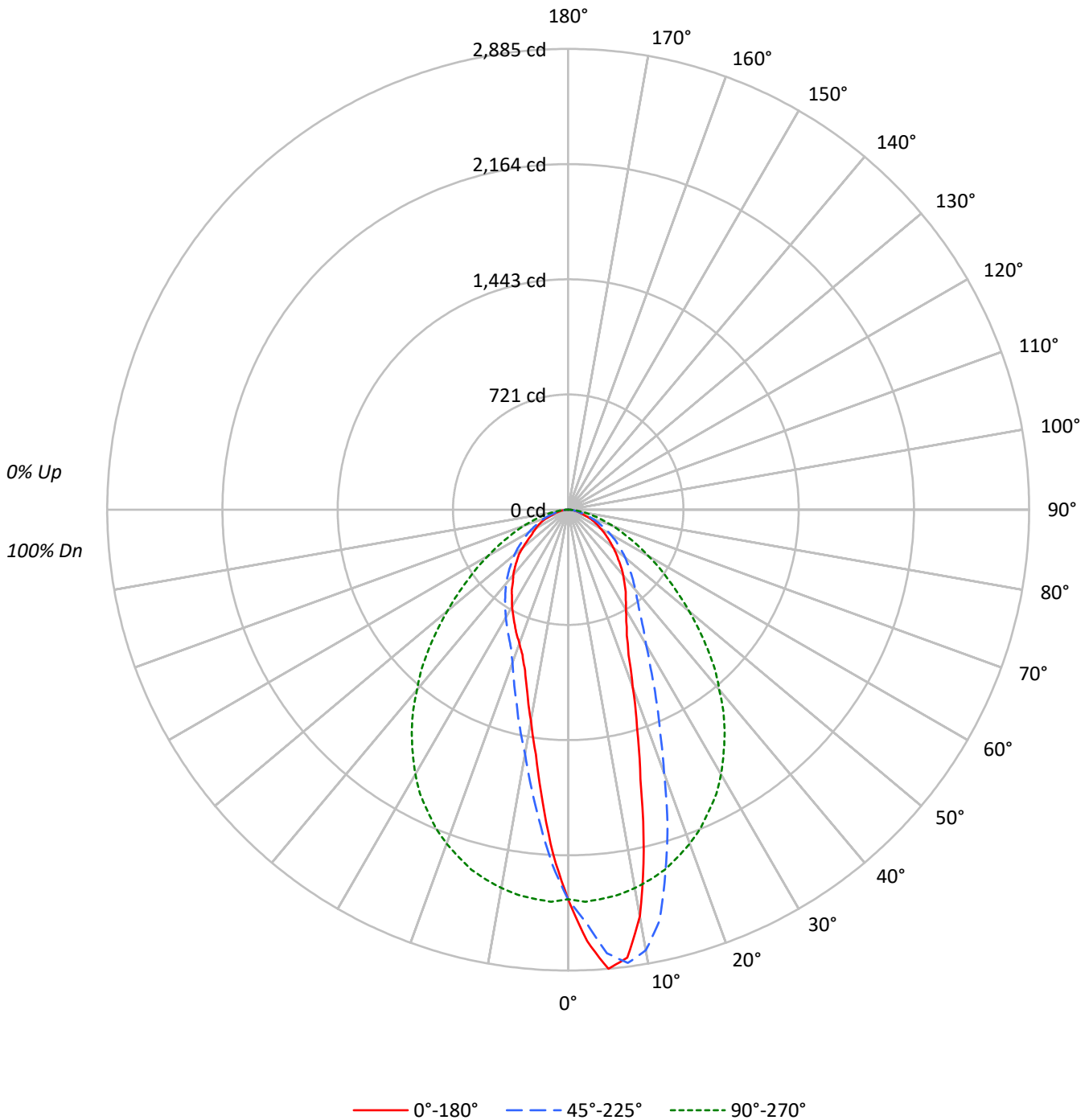
Lumens per Lamp: N/A  
Luminaire Lumens: 3231.3 lumens  
Efficiency: N/A  
Efficacy: 124.3 lumens/watt  
Spacing Criteria (0/90/45): 0.55 / 1.17 / 0.79  
Luminous Opening: Rectangular (W 4' x L: 0.25' x H: 0')  
CIE Type: Direct

Input Watts (W): 26  
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: P646695

CATALOG NUMBER: S123RDRP-S775D835-X4F0-XX-UDD-G-W

### Luminous Intensity Polar Plot



TEST NUMBER: P646695

CATALOG NUMBER: S123RDRP-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	111	107	103	100	108	104	101	98	100	97	95	96	94	92	93	91	89					87				
2	102	95	89	84	100	93	88	83	90	85	81	87	83	80	84	81	78					76				
3	94	85	78	73	92	84	77	72	81	75	71	78	74	70	76	72	69					67				
4	88	77	69	64	85	76	69	63	73	67	62	71	66	62	69	65	61					59				
5	82	70	62	56	80	69	62	56	67	61	56	65	60	55	63	58	54					53				
6	76	64	56	51	74	63	56	50	62	55	50	60	54	50	59	53	49					47				
7	71	59	51	46	70	58	51	46	57	50	45	56	50	45	54	49	45					43				
8	67	55	47	42	65	54	47	42	53	46	41	52	46	41	51	45	41					39				
9	63	51	43	38	62	50	43	38	49	43	38	48	42	38	47	42	38					36				
10	60	47	40	36	58	47	40	35	46	40	35	45	39	35	44	39	35					33				

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°	135°	180°
0°	26253	26253	26253	26253	26253
5°	31173	30114	26418	21426	19827
10°	28243	30604	26287	16963	14679
15°	19446	26210	26009	13930	11612
20°	13528	20103	25487	11672	10206
25°	10309	15428	24727	10428	9406
30°	8974	12131	23777	9695	8713
35°	8239	10210	22431	9041	8081
40°	7517	9161	20669	8487	7503
45°	6789	8388	18769	7885	6926
50°	6162	7787	16528	7335	6213
55°	5574	7150	14375	6700	5330
60°	4994	6501	12486	6135	5038
65°	4610	5782	10748	5450	4763
70°	3745	4941	9379	4941	3871
75°	3285	3993	7943	4117	3410
80°	2975	3347	6509	3471	3223
85°	2717	2841	4940	3088	2964

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 80°  
 Vertical Angle: 45°  
 Luminance: 19804 cd/sqm



TEST NUMBER: P646695

CATALOG NUMBER: S123RDRP-S775D835-X4F0-XX-UDD-G-W

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	222.3	6.9
10°-20°	514.3	15.9
20°-30°	590.0	18.3
30°-40°	581.2	18.0
40°-50°	512.3	15.9
50°-60°	394.3	12.2
60°-70°	259.3	8.0
70°-80°	125.9	3.9
80°-90°	31.7	1.0
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°	1326.6	41.1
0°-40°	1907.9	59.0
0°-60°	2814.4	87.1
0°-90°	3231.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3231.3	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	2439	2439	2439	2439	2439	
5°	2885	2787	2445	1983	1835	264
15°	1745	2352	2334	1250	1042	493
25°	868	1299	2082	878	792	410
35°	627	777	1707	688	615	391
45°	446	551	1233	518	455	346
55°	297	381	766	357	284	266
65°	181	227	422	214	187	177
75°	79	96	191	99	82	85
85°	22	23	40	25	24	25
90°	0	0	0	0	0	



TEST NUMBER: P646695

CATALOG NUMBER: S123RDRP-S775D835-X4F0-XX-UDD-G-W

**CANDELA DISTRIBUTION (FULL):**

	0°	10°	20°	22.5°	30°	40°	45°	50°	60°	67.5°	70°
0°	2439	2439	2439	2439	2439	2439	2439	2439	2439	2439	2439
2.5°	2703	2686	2681	2675	2665	2629	2588	2592	2587	2556	2539
5°	2885	2887	2882	2878	2861	2817	2787	2769	2731	2673	2655
7.5°	2829	2861	2867	2874	2883	2873	2862	2855	2824	2761	2732
10°	2584	2582	2618	2647	2725	2780	2800	2829	2855	2811	2779
12.5°	2184	2187	2305	2305	2406	2546	2636	2697	2809	2812	2793
15°	1745	1794	1899	1921	2051	2239	2352	2478	2695	2763	2759
17.5°	1433	1454	1555	1584	1699	1912	2068	2220	2524	2667	2693
20°	1181	1200	1273	1295	1411	1614	1755	1919	2317	2536	2582
22.5°	986	1023	1072	1106	1172	1379	1500	1657	2077	2389	2443
25°	868	885	927	943	1023	1160	1299	1437	1864	2205	2300
27.5°	788	793	824	838	886	1013	1113	1241	1647	2016	2127
30°	722	731	755	758	800	890	976	1094	1457	1833	1947
32.5°	671	676	696	702	729	800	870	956	1281	1642	1773
35°	627	628	643	651	675	734	777	849	1140	1484	1599
37.5°	577	584	595	602	623	671	710	766	1010	1334	1441
40°	535	541	554	557	576	620	652	702	898	1190	1299
42.5°	493	497	510	516	537	572	601	640	809	1062	1169
45°	446	456	470	473	493	529	551	587	729	951	1046
47.5°	407	412	424	429	452	484	507	538	660	850	943
50°	368	370	381	388	406	443	465	493	597	768	833
52.5°	331	336	347	352	364	402	422	451	537	684	749
55°	297	300	308	314	328	361	381	406	485	607	664
57.5°	265	269	275	280	293	322	342	367	436	537	581
60°	232	237	244	246	258	284	302	324	386	472	511
62.5°	208	209	215	218	225	246	265	286	341	409	441
65°	181	184	187	189	195	213	227	243	297	356	378
67.5°	153	156	161	163	168	180	192	208	253	303	323
70°	119	119	127	131	139	148	157	171	210	253	268
72.5°	97	98	99	99	106	121	126	135	166	207	220
75°	79	80	81	82	83	88	96	104	127	157	169
77.5°	63	64	65	65	67	69	71	75	91	113	123
80°	48	49	50	50	51	53	54	56	61	76	81
82.5°	35	35	35	36	37	37	39	39	42	46	49
85°	22	22	23	23	23	24	23	24	25	26	28
87.5°	10	9	10	10	10	11	11	11	11	12	12
90°	0	0	0	0	0	0	0	0	0	0	0



TEST NUMBER: P646695

CATALOG NUMBER: S123RDRP-S775D835-X4F0-XX-UDD-G-W

**CANDELA DISTRIBUTION (continued):**

	80°	90°	100°	110°	112.5°	120°	130°	135°	140°	150°	157.5°
0°	2439	2439	2439	2439	2439	2439	2439	2439	2439	2439	2439
2.5°	2492	2457	2398	2361	2347	2304	2263	2229	2212	2210	2179
5°	2541	2445	2323	2221	2197	2122	2025	1983	1928	1906	1880
7.5°	2581	2431	2251	2097	2052	1939	1815	1760	1718	1652	1613
10°	2609	2405	2163	1964	1900	1768	1618	1552	1513	1437	1406
12.5°	2620	2372	2075	1826	1770	1613	1466	1398	1340	1271	1241
15°	2616	2334	1985	1699	1629	1470	1314	1250	1196	1127	1088
17.5°	2589	2280	1887	1576	1509	1345	1187	1128	1080	1013	983
20°	2544	2225	1801	1464	1388	1231	1082	1019	977	941	919
22.5°	2482	2160	1696	1353	1287	1129	986	935	910	881	865
25°	2388	2082	1601	1260	1194	1037	912	878	853	834	817
27.5°	2287	2007	1506	1166	1104	954	854	828	806	782	767
30°	2170	1913	1416	1083	1023	887	804	780	762	736	721
32.5°	2032	1810	1332	1003	947	829	758	732	717	692	677
35°	1889	1707	1240	929	878	778	713	688	672	647	632
37.5°	1749	1597	1158	864	818	727	666	645	630	604	586
40°	1601	1471	1078	803	760	682	623	604	584	561	543
42.5°	1446	1360	1004	749	709	638	580	560	543	516	508
45°	1301	1233	926	692	660	594	538	518	499	476	468
47.5°	1172	1109	855	642	610	551	496	475	461	443	431
50°	1039	987	777	593	563	505	452	438	422	400	391
52.5°	915	875	713	546	518	466	412	398	383	364	351
55°	806	766	640	493	472	423	375	357	345	323	307
57.5°	694	675	570	449	429	380	337	323	308	284	268
60°	602	580	505	401	382	341	299	285	271	248	241
62.5°	515	499	442	356	340	300	263	250	236	221	216
65°	436	422	379	310	297	262	228	214	205	198	193
67.5°	362	354	321	267	257	226	196	185	180	172	168
70°	295	298	268	228	217	192	166	157	151	144	136
72.5°	241	240	222	186	178	158	138	132	125	111	102
75°	187	191	174	154	146	126	107	99	92	87	84
77.5°	143	145	137	118	111	94	79	75	72	69	68
80°	102	105	97	85	79	65	57	56	55	53	52
82.5°	66	70	66	53	50	43	41	41	40	39	38
85°	36	40	38	31	29	27	26	25	25	25	25
87.5°	14	19	16	13	13	13	13	13	13	13	13
90°	0	0	0	0	0	0	0	0	0	0	0



TEST NUMBER: P646695

CATALOG NUMBER: S123RDRP-S775D835-X4F0-XX-UDD-G-W

**CANDELA DISTRIBUTION (continued):**

	160°	170°	180°
0°	2439	2439	2439
2.5°	2172	2162	2158
5°	1873	1842	1835
7.5°	1601	1588	1545
10°	1401	1361	1343
12.5°	1221	1184	1178
15°	1077	1051	1042
17.5°	982	964	953
20°	912	899	891
22.5°	859	849	843
25°	812	797	792
27.5°	764	751	746
30°	719	708	701
32.5°	672	659	655
35°	627	619	615
37.5°	583	573	567
40°	542	537	534
42.5°	505	496	495
45°	466	457	455
47.5°	429	421	420
50°	390	379	371
52.5°	343	333	326
55°	301	290	284
57.5°	266	261	258
60°	239	236	234
62.5°	215	212	212
65°	193	190	187
67.5°	166	160	159
70°	133	124	123
72.5°	101	100	98
75°	84	82	82
77.5°	68	66	66
80°	52	51	52
82.5°	38	38	37
85°	25	24	24
87.5°	12	12	12
90°	0	0	0



TEST NUMBER: P646695  
 CATALOG NUMBER: S123RDRP-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	16.05	17.51	16.42	17.82	18.14	21.15	22.60	21.51	22.92	23.23
	3H	17.39	18.69	17.77	19.02	19.38	22.43	23.73	22.80	24.06	24.42
	4H	17.78	19.00	18.19	19.35	19.73	22.87	24.09	23.27	24.44	24.82
	6H	18.09	19.22	18.50	19.58	19.98	23.16	24.29	23.58	24.66	25.05
	8H	18.19	19.26	18.62	19.65	20.05	23.24	24.31	23.67	24.70	25.10
	12H	18.26	19.28	18.69	19.67	20.10	23.28	24.30	23.71	24.69	25.12
4H	2H	16.90	18.12	17.30	18.47	18.85	21.19	22.41	21.59	22.76	23.14
	3H	18.38	19.39	18.79	19.79	20.19	22.68	23.69	23.09	24.09	24.49
	4H	18.84	19.75	19.27	20.16	20.60	23.23	24.14	23.67	24.56	25.00
	6H	19.23	20.01	19.69	20.46	20.92	23.67	24.46	24.13	24.90	25.36
	8H	19.36	20.09	19.82	20.54	21.01	23.79	24.53	24.26	24.97	25.44
	12H	19.46	20.11	19.94	20.59	21.06	23.87	24.52	24.35	25.00	25.47
8H	4H	19.23	19.96	19.69	20.41	20.88	23.24	23.97	23.70	24.42	24.89
	6H	19.70	20.30	20.20	20.79	21.27	23.73	24.33	24.23	24.82	25.30
	8H	19.88	20.42	20.40	20.93	21.42	23.89	24.43	24.41	24.94	25.43
	12H	20.04	20.52	20.55	21.01	21.58	24.02	24.50	24.53	24.99	25.56
12H	4H	19.27	19.93	19.76	20.41	20.88	23.22	23.87	23.70	24.35	24.82
	6H	19.76	20.30	20.28	20.82	21.31	23.70	24.24	24.22	24.75	25.24
	8H	20.00	20.47	20.51	20.97	21.53	23.90	24.37	24.41	24.87	25.43