

Scaled data based on original data using  
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-State  
Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: NEO-RAY

Report Number: G3-1802-639-52

Luminaire Tested: **S121DR-H685D835-X4F0-XX-UDD-D-W**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: G3-1802-639-52  
Test Lab: INNOVATION CENTER(G3)  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S121DR-H685D835-X4F0-XX-UDD-D-W  
Description: DEFINE 1 DIRECT RECESSED WITH SATIN DROP DIFFUSER.  
HIGH PERFORMANCE LIGHT ENGINE  
Light Source: (184) 3500K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2768.2 lumens  
Efficiency: N/A  
Efficacy: 108.1 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.34 / 1.43  
Luminous Opening: Rectangular w/ Sides (W: 0.1' x L: 3.9' x H: 0.08')  
CIE Type: Semi-Direct

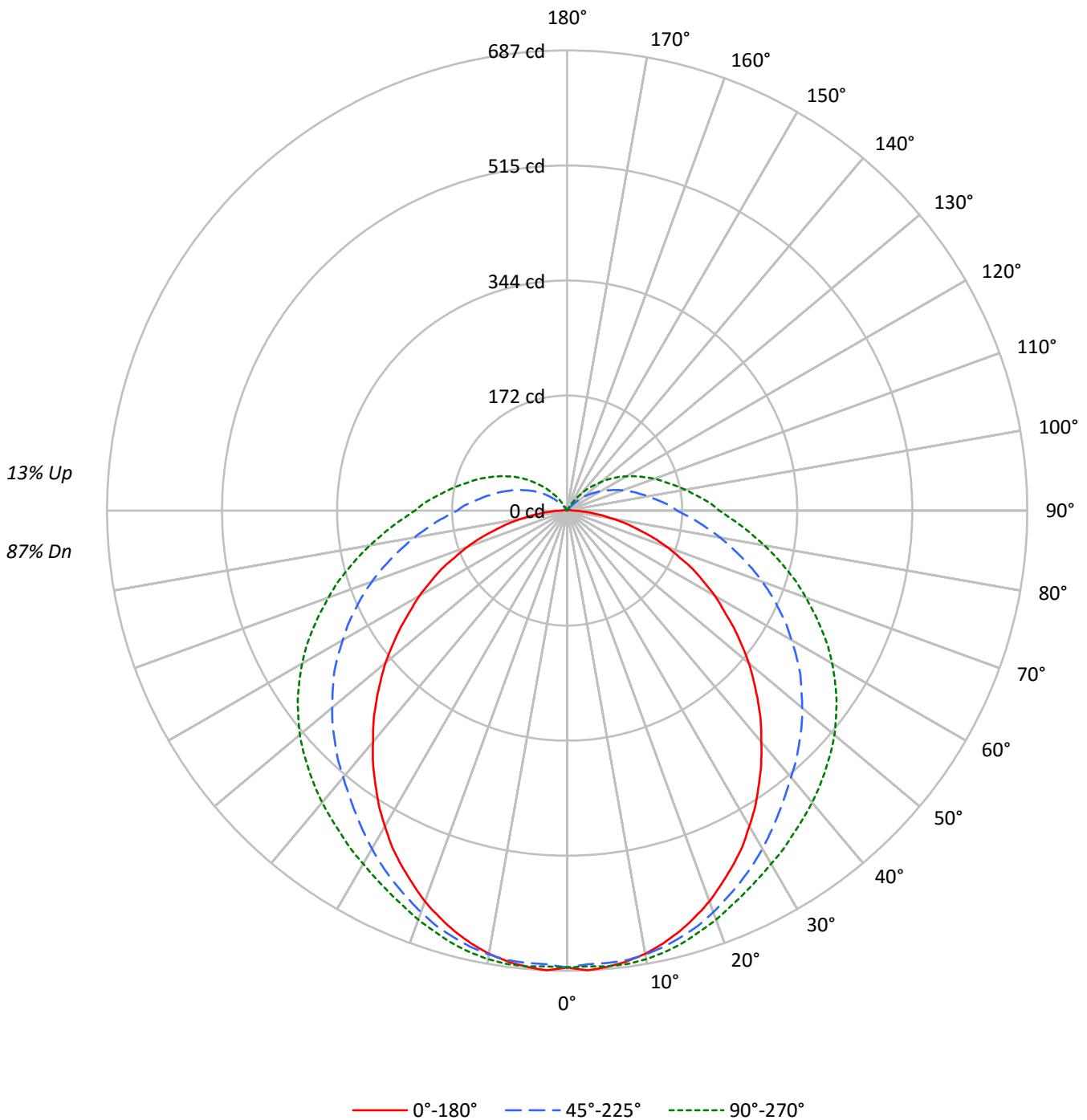
Input Watts (W): 25.6  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR																		
0	116	116	116	116	112	112	112	112	104	104	104	97	97	97	90	90	90	87
1	103	97	92	87	99	94	89	84	87	83	79	81	78	75	75	72	70	67
2	93	83	75	69	89	80	73	67	74	69	63	69	64	60	64	60	57	54
3	84	72	63	56	80	70	61	55	65	58	52	60	54	50	56	51	47	44
4	76	64	54	47	73	61	53	46	57	50	44	53	47	42	49	44	40	37
5	70	56	47	40	67	54	46	39	51	43	37	47	41	36	44	39	34	32
6	65	51	41	34	62	49	40	34	46	38	32	43	36	31	40	34	30	27
7	60	46	37	30	57	44	36	30	41	34	29	39	32	27	36	31	26	24
8	55	42	33	27	53	40	32	26	38	31	25	36	29	24	33	28	23	21
9	52	38	30	24	50	37	29	24	35	28	23	33	26	22	31	25	21	19
10	48	35	27	22	47	34	26	21	32	25	21	30	24	20	29	23	19	17

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

	0°	45°	90°
0°	18089	18089	18089
5°	18178	17179	16996
10°	18031	16442	16051
15°	17747	15659	15105
20°	17393	14866	14210
25°	16952	14094	13407
30°	16458	13372	12759
35°	15919	12683	12224
40°	15340	12105	11788
45°	14800	11627	11378
50°	14244	11169	11006
55°	13596	10743	10598
60°	13044	10234	10162
65°	12422	9754	9684
70°	11573	9262	9191
75°	10534	8735	8717
80°	9263	8253	8249
85°	8070	7809	7831



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	64.9	2.3
10°-20°	186.4	6.7
20°-30°	281.9	10.2
30°-40°	344.6	12.4
40°-50°	374.1	13.5
50°-60°	369.2	13.3
60°-70°	330.7	11.9
70°-80°	266.0	9.6
80°-90°	192.3	6.9
90°-100°	137.7	5.0
100°-110°	98.3	3.6
110°-120°	65.1	2.4
120°-130°	37.0	1.3
130°-140°	16.5	0.6
140°-150°	3.5	0.1
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	533.2	19.3
0°-40°	877.8	31.7
0°-60°	1621.1	58.6
0°-90°	2410.1	87.1
90°-120°	301.1	10.9
90°-150°	358.1	12.9
90°-180°	358.0	12.9
0°-180°	2768.2	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	682	682	682	682	682	
5°	684	682	678	685	683	65
15°	650	657	659	668	668	183
25°	585	600	612	626	629	269
35°	499	525	551	580	589	312
45°	403	441	490	532	546	311
55°	303	354	425	474	491	271
65°	207	271	349	403	419	204
75°	111	187	270	323	339	118
85°	33	112	196	246	261	34
90°	8	84	164	213	227	6
95°	6	67	143	189	203	4
105°	3	40	105	145	157	3
115°	2	19	72	109	120	2
125°	1	2	44	75	85	1
135°	0	0	17	42	50	0
145°	0	0	0	11	18	0
155°	0	0	0	0	0	0
165°	0	0	0	0	0	0
175°	0	0	0	0	0	0
180°	0	0	0	0	0	0



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	682	682	682	682	682
2.5°	687	683	678	683	681
5°	684	682	678	685	683
7.5°	679	679	677	684	683
10°	672	674	673	681	680
12.5°	662	666	667	676	675
15°	650	657	659	668	668
17.5°	636	645	650	659	659
20°	621	631	638	649	650
22.5°	603	617	625	638	639
25°	585	600	612	626	629
27.5°	566	583	598	614	619
30°	544	563	583	602	609
32.5°	523	545	567	591	600
35°	499	525	551	580	589
37.5°	476	504	535	568	579
40°	451	483	520	557	569
42.5°	428	461	506	544	558
45°	403	441	490	532	546
47.5°	378	419	475	518	534
50°	354	397	458	505	521
52.5°	328	377	441	489	506
55°	303	354	425	474	491
57.5°	277	335	406	458	474
60°	255	313	387	440	457
62.5°	230	292	369	421	439
65°	207	271	349	403	419
67.5°	181	250	330	383	399
70°	158	229	310	363	379
72.5°	135	209	290	344	360
75°	111	187	270	323	339
77.5°	90	167	250	303	319
80°	68	147	232	284	299
82.5°	50	129	213	265	279
85°	33	112	196	246	261
87.5°	19	97	179	229	243
90°	8	84	164	213	227
92.5°	6	76	155	202	216
95°	6	67	143	189	203
97.5°	5	59	132	177	190
100°	4	52	123	166	179
102.5°	4	46	113	155	168
105°	3	40	105	145	157
107.5°	3	34	96	136	148
110°	2	29	88	127	139



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	2	24	80	118	129
115°	2	19	72	109	120
117.5°	1	14	65	100	111
120°	1	10	58	91	102
122.5°	1	5	50	83	94
125°	1	2	44	75	85
127.5°	0	0	37	66	76
130°	0	0	30	58	67
132.5°	0	0	24	50	58
135°	0	0	17	42	50
137.5°	0	0	11	34	42
140°	0	0	5	26	33
142.5°	0	0	1	19	25
145°	0	0	0	11	18
147.5°	0	0	0	4	10
150°	0	0	0	0	3
152.5°	0	0	0	0	0
155°	0	0	0	0	0
157.5°	0	0	0	0	0
160°	0	0	0	0	0
162.5°	0	0	0	0	0
165°	0	0	0	0	0
167.5°	0	0	0	0	0
170°	0	0	0	0	0
172.5°	0	0	0	0	0
175°	0	0	0	0	0
177.5°	0	0	0	0	0
180°	0	0	0	0	0

(END OF REPORT)