

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: P242158

Luminaire Tested: **S121DR-S490D835-X4F0-XX-UDD-D-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P242158
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-13)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S121DR-S490D835-X4F0-XX-UDD-D-W
Description: DEFINE 1 DIRECT RECESSED WITH SATIN DROP DIFFUSER
STANDARD LIGHT ENGINE
Light Source: (92) 3500K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1962.0 lumens
Efficiency: N/A
Efficacy: 104.4 lumens/watt
Spacing Criteria (0/90/45): 1.19 / 1.34 / 1.44
Luminous Opening: Rectangular w/ Sides (W: 0.09' x L: 3.88' x H: 0.08')
CIE Type: Semi-Direct

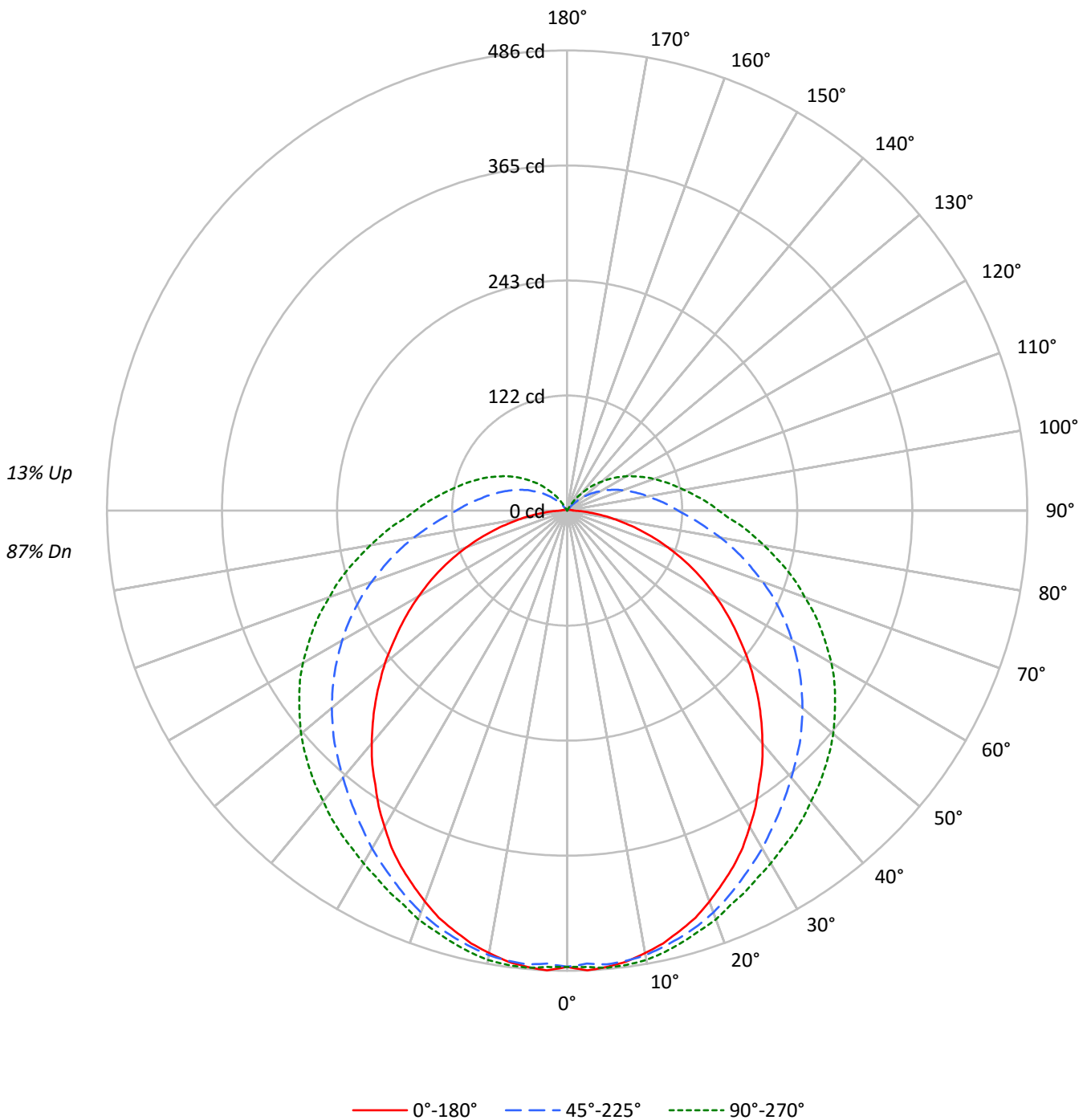
Input Watts (W): 18.8
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	77	75	75	72	70	67
2	93	83	75	69	89	80	73	67	74	68	63	69	64	60	64	60	57	54
3	84	72	63	56	80	70	61	55	65	58	52	60	54	49	56	51	47	44
4	76	63	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	28	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	23	35	28	23	33	26	22	31	25	21	19
10	48	35	27	22	47	34	26	21	32	25	20	30	24	20	29	23	19	17

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	14276	14276	14276
5°	14366	13546	13376
10°	14225	12883	12532
15°	14014	12192	11686
20°	13747	11537	10947
25°	13433	10870	10274
30°	13031	10279	9725
35°	12590	9721	9286
40°	12196	9249	8877
45°	11752	8859	8539
50°	11294	8464	8213
55°	10796	8077	7862
60°	10335	7686	7523
65°	9865	7295	7136
70°	9219	6875	6722
75°	8446	6450	6359
80°	7528	6032	5963
85°	6467	5638	5621



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	46.0	2.3
10°-20°	131.9	6.7
20°-30°	199.5	10.2
30°-40°	243.9	12.4
40°-50°	264.8	13.5
50°-60°	261.2	13.3
60°-70°	234.5	12.0
70°-80°	188.7	9.6
80°-90°	136.3	6.9
90°-100°	97.4	5.0
100°-110°	69.7	3.6
110°-120°	46.5	2.4
120°-130°	26.7	1.4
130°-140°	12.1	0.6
140°-150°	2.6	0.1
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	377.4	19.2
0°-40°	621.3	31.7
0°-60°	1147.4	58.5
0°-90°	1706.9	87.0
90°-120°	213.7	10.9
90°-150°	255.1	13.0
90°-180°	255.0	13.0
0°-180°	1962.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	482	482	482	482	482	
5°	484	483	481	485	485	46
15°	460	466	466	472	472	130
25°	415	426	432	442	444	191
35°	353	373	390	409	416	221
45°	286	312	348	376	385	221
55°	215	253	300	335	345	193
65°	147	194	248	284	296	146
75°	80	134	192	228	240	85
85°	24	80	139	174	184	25
90°	6	60	117	150	160	5
95°	5	48	101	134	142	4
105°	3	29	74	103	111	3
115°	2	14	52	77	85	2
125°	1	2	32	53	60	1
135°	1	1	12	30	36	1
145°	0	0	0	9	12	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°	481.8	481.8	481.8	481.8	481.8
2.5°	486.1	483.9	478.9	483.9	482.5
5°	483.9	483.2	481.1	485.4	484.7
7.5°	480.4	481.8	479.6	485.4	483.9
10°	474.6	478.2	476.8	482.5	481.8
12.5°	468.2	472.5	471.7	478.2	477.5
15°	459.5	466.0	466.0	472.5	471.7
17.5°	450.9	457.4	459.5	466.7	465.3
20°	439.4	448.0	451.6	458.1	459.5
22.5°	427.2	438.0	442.3	450.2	450.9
25°	415.0	425.8	432.3	442.3	444.5
27.5°	401.4	413.6	422.2	433.7	436.6
30°	385.6	400.7	412.1	425.1	430.1
32.5°	370.5	387.0	400.7	417.9	422.9
35°	353.3	372.7	389.9	409.3	416.5
37.5°	338.2	358.3	379.1	401.4	409.3
40°	321.0	342.5	368.3	392.8	400.7
42.5°	303.7	328.1	357.6	384.9	393.5
45°	286.5	312.3	347.5	375.5	384.9
47.5°	268.5	298.0	336.0	366.2	376.2
50°	251.3	282.9	324.5	356.1	366.9
52.5°	232.6	267.8	312.3	345.4	356.1
55°	215.4	252.7	300.1	334.6	345.4
57.5°	198.2	237.7	287.2	322.4	334.6
60°	180.9	222.6	274.3	310.2	322.4
62.5°	164.4	208.2	261.4	298.0	308.8
65°	147.2	193.9	247.7	284.3	295.8
67.5°	130.0	178.8	234.1	270.7	282.2
70°	112.7	163.0	219.7	257.1	267.1
72.5°	96.2	148.6	205.4	243.4	254.2
75°	79.7	133.6	191.7	228.3	239.8
77.5°	63.9	119.2	178.1	214.7	224.7
80°	49.5	104.8	164.4	201.0	211.1
82.5°	35.9	92.6	150.8	186.7	197.5
85°	23.7	80.4	138.6	173.8	184.5
87.5°	14.4	69.6	127.1	161.6	170.2
90°	6.5	60.3	117.0	150.1	160.1
92.5°	5.7	53.9	109.1	142.2	151.5
95°	5.0	48.1	101.2	133.6	142.2
97.5°	4.3	42.4	93.3	124.9	133.6
100°	3.6	37.3	86.9	117.0	125.7
102.5°	3.6	33.0	80.4	109.1	117.8
105°	2.9	28.7	74.0	102.7	111.3
107.5°	2.9	25.1	68.2	96.2	104.1
110°	2.9	21.5	62.5	89.8	97.7



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	2.2	18.0	57.4	83.3	91.2
115°	2.2	14.4	51.7	76.8	84.7
117.5°	2.2	10.8	46.7	71.1	78.3
120°	1.4	7.9	40.9	65.3	72.5
122.5°	1.4	5.0	36.6	58.9	66.1
125°	1.4	2.2	31.6	53.1	60.3
127.5°	1.4	0.7	26.6	47.4	53.9
130°	0.7	0.7	22.3	41.6	47.4
132.5°	0.7	0.7	17.2	35.9	42.4
135°	0.7	0.7	12.2	30.2	35.9
137.5°	0.7	0.0	7.9	24.4	29.4
140°	0.7	0.0	4.3	19.4	23.7
142.5°	0.7	0.0	0.7	13.6	18.7
145°	0.0	0.0	0.0	8.6	12.2
147.5°	0.0	0.0	0.0	3.6	7.2
150°	0.0	0.0	0.0	0.0	2.2
152.5°	0.0	0.0	0.0	0.0	0.0
155°	0.0	0.0	0.0	0.0	0.0
157.5°	0.0	0.0	0.0	0.0	0.0
160°	0.0	0.0	0.0	0.0	0.0
162.5°	0.0	0.0	0.0	0.0	0.0
165°	0.0	0.0	0.0	0.0	0.0
167.5°	0.0	0.0	0.0	0.0	0.0
170°	0.0	0.0	0.0	0.0	0.0
172.5°	0.0	0.0	0.0	0.0	0.0
175°	0.0	0.0	0.0	0.0	0.0
177.5°	0.0	0.0	0.0	0.0	0.0
180°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)