

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: P242167

Luminaire Tested: **S121DR-S490D930-X4F0-XX-UDD-D-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P242167
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-S490D930-X4F0-XX-UDD-D-W
Description: DEFINE 1 DIRECT RECESSED WITH SATIN DROP DIFFUSER
STANDARD LIGHT ENGINE
Light Source: (92) 3000K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1599.6 lumens
Efficiency: N/A
Efficacy: 85.1 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

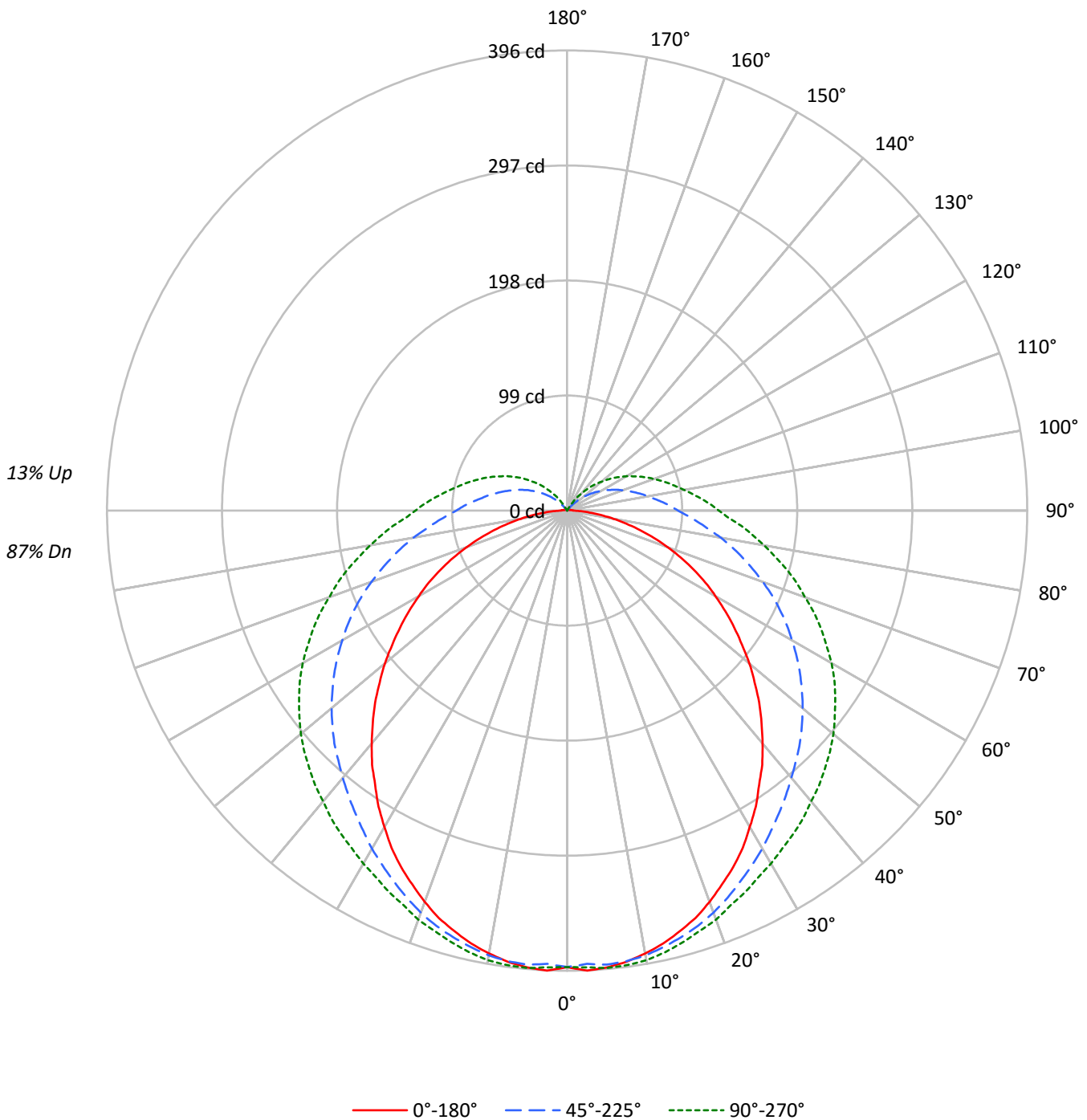
Input Watts (W): 18.8
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	11639	11639	11639
5°	11715	11043	10904
10°	11600	10503	10217
15°	11428	9939	9528
20°	11210	9406	8927
25°	10953	8861	8376
30°	10625	8381	7929
35°	10263	7926	7569
40°	9943	7542	7238
45°	9582	7222	6961
50°	9209	6902	6695
55°	8801	6586	6410
60°	8427	6265	6132
65°	8042	5949	5819
70°	7517	5604	5482
75°	6888	5259	5184
80°	6144	4920	4861
85°	5267	4596	4582



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	37.5	2.3
10°-20°	107.6	6.7
20°-30°	162.6	10.2
30°-40°	198.9	12.4
40°-50°	215.9	13.5
50°-60°	213.0	13.3
60°-70°	191.2	12.0
70°-80°	153.9	9.6
80°-90°	111.1	6.9
90°-100°	79.4	5.0
100°-110°	56.9	3.6
110°-120°	37.9	2.4
120°-130°	21.8	1.4
130°-140°	9.8	0.6
140°-150°	2.1	0.1
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	307.7	19.2
0°-40°	506.6	31.7
0°-60°	935.5	58.5
0°-90°	1391.6	87.0
90°-120°	174.2	10.9
90°-150°	208.0	13.0
90°-180°	208.0	13.0
0°-180°	1599.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	393	393	393	393	393	
5°	395	394	392	396	395	37
15°	375	380	380	385	385	106
25°	338	347	352	361	362	156
35°	288	304	318	334	340	181
45°	234	255	283	306	314	180
55°	176	206	245	273	282	157
65°	120	158	202	232	241	119
75°	65	109	156	186	196	69
85°	19	66	113	142	150	20
90°	5	49	95	122	130	4
95°	4	39	82	109	116	3
105°	2	23	60	84	91	3
115°	2	12	42	63	69	2
125°	1	2	26	43	49	1
135°	1	1	10	25	29	0
145°	0	0	0	7	10	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°	392.8	392.8	392.8	392.8	392.8
2.5°	396.3	394.6	390.5	394.6	393.4
5°	394.6	394.0	392.2	395.7	395.1
7.5°	391.6	392.8	391.1	395.7	394.6
10°	387.0	389.9	388.7	393.4	392.8
12.5°	381.7	385.2	384.6	389.9	389.3
15°	374.7	379.9	379.9	385.2	384.6
17.5°	367.6	372.9	374.7	380.5	379.3
20°	358.3	365.3	368.2	373.5	374.7
22.5°	348.3	357.1	360.6	367.0	367.6
25°	338.4	347.1	352.4	360.6	362.4
27.5°	327.2	337.2	344.2	353.6	355.9
30°	314.4	326.7	336.0	346.6	350.7
32.5°	302.1	315.5	326.7	340.7	344.8
35°	288.0	303.8	317.9	333.7	339.5
37.5°	275.7	292.1	309.1	327.2	333.7
40°	261.7	279.2	300.3	320.2	326.7
42.5°	247.6	267.5	291.5	313.8	320.8
45°	233.6	254.7	283.3	306.2	313.8
47.5°	218.9	242.9	274.0	298.6	306.8
50°	204.9	230.6	264.6	290.4	299.1
52.5°	189.7	218.4	254.7	281.6	290.4
55°	175.6	206.1	244.7	272.8	281.6
57.5°	161.6	193.8	234.2	262.8	272.8
60°	147.5	181.5	223.6	252.9	262.8
62.5°	134.1	169.8	213.1	242.9	251.7
65°	120.0	158.1	202.0	231.8	241.2
67.5°	106.0	145.8	190.8	220.7	230.1
70°	91.9	132.9	179.1	209.6	217.8
72.5°	78.4	121.2	167.4	198.5	207.2
75°	65.0	108.9	156.3	186.2	195.5
77.5°	52.1	97.2	145.2	175.0	183.2
80°	40.4	85.5	134.1	163.9	172.1
82.5°	29.3	75.5	122.9	152.2	161.0
85°	19.3	65.6	113.0	141.7	150.4
87.5°	11.7	56.8	103.6	131.7	138.7
90°	5.3	49.2	95.4	122.3	130.5
92.5°	4.7	43.9	89.0	115.9	123.5
95°	4.1	39.2	82.5	108.9	115.9
97.5°	3.5	34.5	76.1	101.9	108.9
100°	2.9	30.4	70.8	95.4	102.4
102.5°	2.9	26.9	65.6	89.0	96.0
105°	2.3	23.4	60.3	83.7	90.7
107.5°	2.3	20.5	55.6	78.4	84.9
110°	2.3	17.6	50.9	73.2	79.6



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1.8	14.6	46.8	67.9	74.3
115°	1.8	11.7	42.1	62.6	69.1
117.5°	1.8	8.8	38.1	58.0	63.8
120°	1.2	6.4	33.4	53.3	59.1
122.5°	1.2	4.1	29.9	48.0	53.9
125°	1.2	1.8	25.8	43.3	49.2
127.5°	1.2	0.6	21.7	38.6	43.9
130°	0.6	0.6	18.1	34.0	38.6
132.5°	0.6	0.6	14.0	29.3	34.5
135°	0.6	0.6	10.0	24.6	29.3
137.5°	0.6	0.0	6.4	19.9	24.0
140°	0.6	0.0	3.5	15.8	19.3
142.5°	0.6	0.0	0.6	11.1	15.2
145°	0.0	0.0	0.0	7.0	10.0
147.5°	0.0	0.0	0.0	2.9	5.9
150°	0.0	0.0	0.0	0.0	1.8
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)