

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: P242162

Luminaire Tested: **S121DR-S490D840-X4F0-XX-UDD-D-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P242162
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-S490D840-X4F0-XX-UDD-D-W
Description: DEFINE 1 DIRECT RECESSED WITH SATIN DROP DIFFUSER
STANDARD LIGHT ENGINE
Light Source: (92) 4000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1981.4 lumens
Efficiency: N/A
Efficacy: 105.4 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

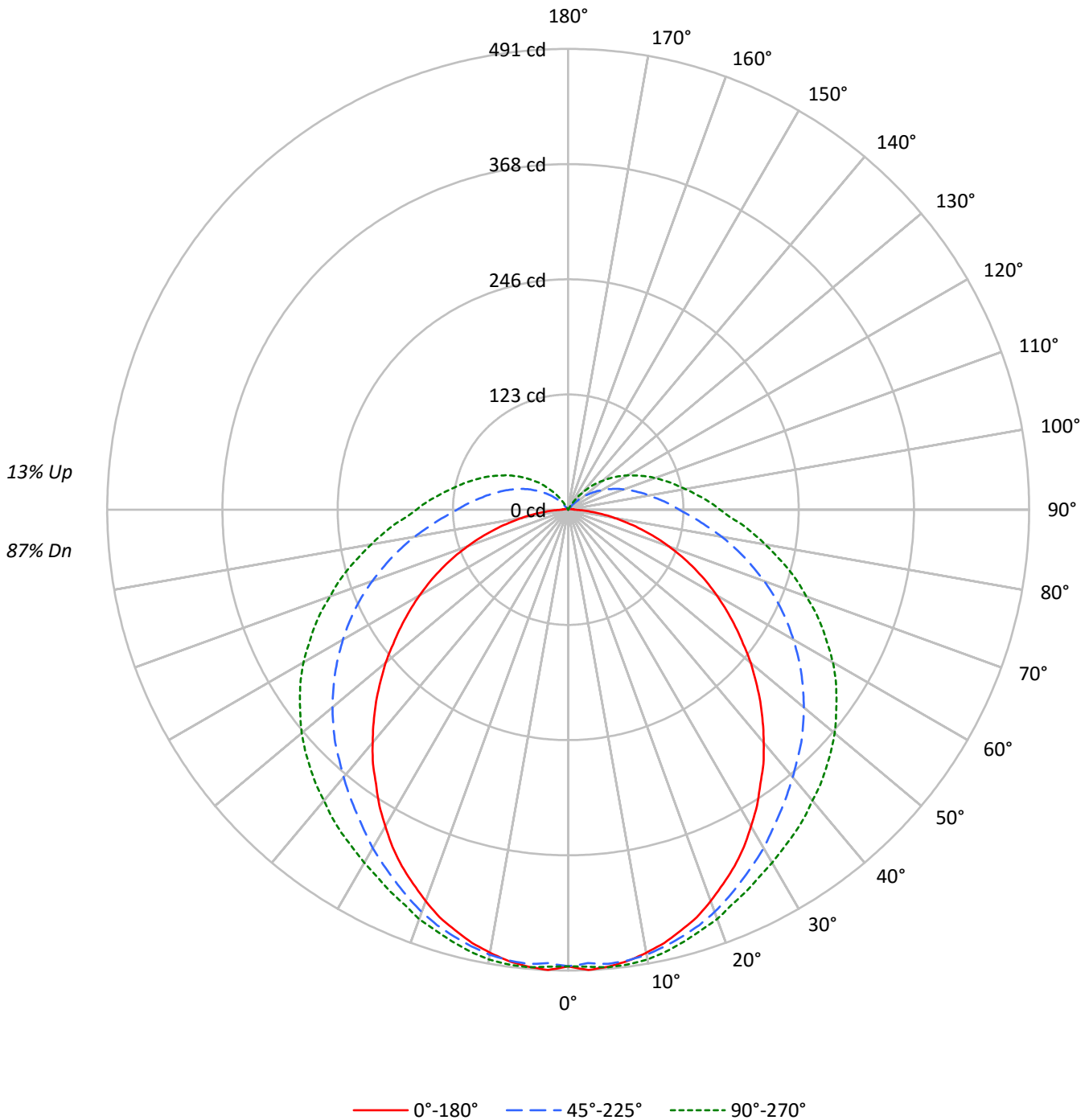
Input Watts (W): 18.8
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P242162

CATALOG NUMBER: S121DR-S490D840-X4F0-XX-UDD-D-W

Luminous Intensity Polar Plot





TEST NUMBER: P242162

CATALOG NUMBER: S121DR-S490D840-X4F0-XX-UDD-D-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	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°	14415	14415	14415
5°	14508	13679	13506
10°	14366	13010	12654
15°	14155	12312	11803
20°	13885	11652	11057
25°	13566	10976	10373
30°	13159	10381	9820
35°	12714	9816	9377
40°	12314	9342	8964
45°	11867	8948	8623
50°	11407	8548	8293
55°	10901	8158	7940
60°	10438	7761	7598
65°	9959	7369	7206
70°	9309	6943	6788
75°	8531	6514	6422
80°	7604	6090	6022
85°	6522	5691	5678



TEST NUMBER: P242162

CATALOG NUMBER: S121DR-S490D840-X4F0-XX-UDD-D-W

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	46.5	2.3
10°-20°	133.2	6.7
20°-30°	201.5	10.2
30°-40°	246.3	12.4
40°-50°	267.4	13.5
50°-60°	263.8	13.3
60°-70°	236.8	12.0
70°-80°	190.6	9.6
80°-90°	137.6	6.9
90°-100°	98.4	5.0
100°-110°	70.4	3.6
110°-120°	47.0	2.4
120°-130°	27.0	1.4
130°-140°	12.2	0.6
140°-150°	2.7	0.1
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	381.1	19.2
0°-40°	627.5	31.7
0°-60°	1158.7	58.5
0°-90°	1723.7	87.0
90°-120°	215.8	10.9
90°-150°	257.7	13.0
90°-180°	258.0	13.0
0°-180°	1981.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	486	486	486	486	486	
5°	489	488	486	490	489	46
15°	464	471	471	477	476	131
25°	419	430	436	447	449	193
35°	357	376	394	413	421	224
45°	289	315	351	379	389	223
55°	218	255	303	338	349	195
65°	149	196	250	287	299	147
75°	80	135	194	231	242	85
85°	24	81	140	176	186	25
90°	6	61	118	152	162	5
95°	5	49	102	135	144	4
105°	3	29	75	104	112	3
115°	2	14	52	78	86	2
125°	2	2	32	54	61	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



TEST NUMBER: P242162

CATALOG NUMBER: S121DR-S490D840-X4F0-XX-UDD-D-W

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	486.5	486.5	486.5	486.5	486.5
2.5°	490.9	488.7	483.6	488.7	487.3
5°	488.7	488.0	485.8	490.2	489.4
7.5°	485.1	486.5	484.4	490.2	488.7
10°	479.3	482.9	481.5	487.3	486.5
12.5°	472.8	477.1	476.4	482.9	482.2
15°	464.1	470.6	470.6	477.1	476.4
17.5°	455.4	461.9	464.1	471.3	469.9
20°	443.8	452.5	456.1	462.6	464.1
22.5°	431.4	442.3	446.7	454.6	455.4
25°	419.1	430.0	436.5	446.7	448.8
27.5°	405.3	417.7	426.4	438.0	440.9
30°	389.4	404.6	416.2	429.3	434.3
32.5°	374.2	390.8	404.6	422.0	427.1
35°	356.8	376.3	393.7	413.3	420.6
37.5°	341.5	361.8	382.9	405.3	413.3
40°	324.1	345.9	372.0	396.6	404.6
42.5°	306.7	331.4	361.1	388.7	397.4
45°	289.3	315.4	351.0	379.2	388.7
47.5°	271.2	300.9	339.4	369.8	380.0
50°	253.8	285.7	327.7	359.7	370.5
52.5°	234.9	270.5	315.4	348.8	359.7
55°	217.5	255.2	303.1	337.9	348.8
57.5°	200.1	240.0	290.0	325.6	337.9
60°	182.7	224.8	277.0	313.2	325.6
62.5°	166.0	210.3	263.9	300.9	311.8
65°	148.6	195.8	250.2	287.1	298.7
67.5°	131.2	180.6	236.4	273.4	285.0
70°	113.8	164.6	221.9	259.6	269.7
72.5°	97.2	150.1	207.4	245.8	256.7
75°	80.5	134.9	193.6	230.6	242.2
77.5°	64.5	120.4	179.8	216.8	227.0
80°	50.0	105.9	166.0	203.0	213.2
82.5°	36.3	93.5	152.3	188.5	199.4
85°	23.9	81.2	139.9	175.5	186.4
87.5°	14.5	70.3	128.3	163.1	171.9
90°	6.5	60.9	118.2	151.5	161.7
92.5°	5.8	54.4	110.2	143.6	153.0
95°	5.1	48.6	102.2	134.9	143.6
97.5°	4.4	42.8	94.3	126.2	134.9
100°	3.6	37.7	87.7	118.2	126.9
102.5°	3.6	33.4	81.2	110.2	118.9
105°	2.9	29.0	74.7	103.7	112.4
107.5°	2.9	25.4	68.9	97.2	105.1
110°	2.9	21.8	63.1	90.6	98.6



TEST NUMBER: P242162

CATALOG NUMBER: S121DR-S490D840-X4F0-XX-UDD-D-W

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	2.2	18.1	58.0	84.1	92.1
115°	2.2	14.5	52.2	77.6	85.6
117.5°	2.2	10.9	47.1	71.8	79.0
120°	1.5	8.0	41.3	66.0	73.2
122.5°	1.5	5.1	37.0	59.5	66.7
125°	1.5	2.2	31.9	53.7	60.9
127.5°	1.5	0.7	26.8	47.9	54.4
130°	0.7	0.7	22.5	42.1	47.9
132.5°	0.7	0.7	17.4	36.3	42.8
135°	0.7	0.7	12.3	30.5	36.3
137.5°	0.7	0.0	8.0	24.7	29.7
140°	0.7	0.0	4.4	19.6	23.9
142.5°	0.7	0.0	0.7	13.8	18.9
145°	0.0	0.0	0.0	8.7	12.3
147.5°	0.0	0.0	0.0	3.6	7.3
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)