

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: P242161

Luminaire Tested: **S121DR-S305D840-X4F0-XX-UDD-D-W**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P242161  
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-S305D840-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: 1204.8 lumens  
Efficiency: N/A  
Efficacy: 103.9 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

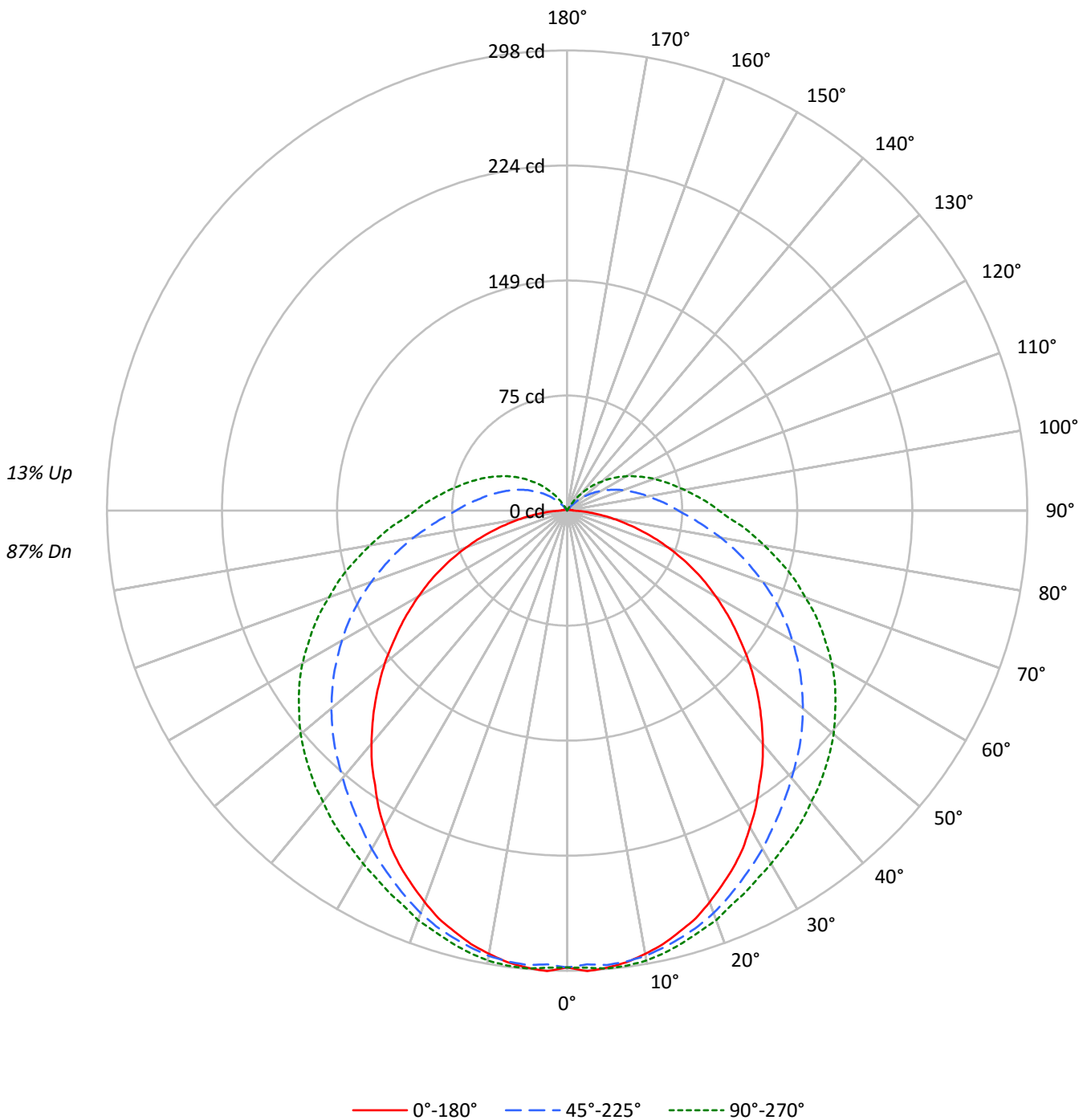
Input Watts (W): 11.6  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	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°	8767	8767	8767
5°	8823	8318	8213
10°	8737	7911	7696
15°	8607	7488	7177
20°	8441	7084	6723
25°	8251	6673	6308
30°	8002	6313	5971
35°	7729	5969	5701
40°	7488	5681	5450
45°	7216	5440	5242
50°	6935	5199	5043
55°	6631	4960	4828
60°	6347	4718	4620
65°	6059	4480	4383
70°	5660	4221	4128
75°	5182	3960	3906
80°	4623	3706	3661
85°	3984	3462	3452



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	28.2	2.3
10°-20°	81.0	6.7
20°-30°	122.5	10.2
30°-40°	149.8	12.4
40°-50°	162.6	13.5
50°-60°	160.4	13.3
60°-70°	144.0	12.0
70°-80°	115.9	9.6
80°-90°	83.7	6.9
90°-100°	59.8	5.0
100°-110°	42.8	3.6
110°-120°	28.6	2.4
120°-130°	16.4	1.4
130°-140°	7.4	0.6
140°-150°	1.6	0.1
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	231.8	19.2
0°-40°	381.5	31.7
0°-60°	704.6	58.5
0°-90°	1048.2	87.0
90°-120°	131.2	10.9
90°-150°	156.7	13.0
90°-180°	157.0	13.0
0°-180°	1204.8	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	296	296	296	296	296	
5°	297	297	295	298	298	28
15°	282	286	286	290	290	80
25°	255	262	265	272	273	117
35°	217	229	239	251	256	136
45°	176	192	213	231	236	136
55°	132	155	184	206	212	118
65°	90	119	152	175	182	89
75°	49	82	118	140	147	52
85°	15	49	85	107	113	15
90°	4	37	72	92	98	3
95°	3	30	62	82	87	2
105°	2	18	45	63	68	2
115°	1	9	32	47	52	1
125°	1	1	19	33	37	1
135°	0	0	8	18	22	0
145°	0	0	0	5	8	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°	295.9	295.9	295.9	295.9	295.9
2.5°	298.5	297.2	294.1	297.2	296.3
5°	297.2	296.7	295.4	298.1	297.6
7.5°	295.0	295.9	294.5	298.1	297.2
10°	291.5	293.7	292.8	296.3	295.9
12.5°	287.5	290.1	289.7	293.7	293.2
15°	282.2	286.2	286.2	290.1	289.7
17.5°	276.9	280.9	282.2	286.6	285.7
20°	269.8	275.1	277.3	281.3	282.2
22.5°	262.4	269.0	271.6	276.5	276.9
25°	254.9	261.5	265.4	271.6	272.9
27.5°	246.5	254.0	259.3	266.3	268.1
30°	236.8	246.0	253.1	261.0	264.1
32.5°	227.5	237.7	246.0	256.6	259.7
35°	216.9	228.8	239.4	251.3	255.7
37.5°	207.7	220.0	232.8	246.5	251.3
40°	197.1	210.3	226.2	241.2	246.0
42.5°	186.5	201.5	219.6	236.3	241.6
45°	175.9	191.8	213.4	230.6	236.3
47.5°	164.9	183.0	206.4	224.9	231.0
50°	154.3	173.7	199.3	218.7	225.3
52.5°	142.9	164.5	191.8	212.1	218.7
55°	132.3	155.2	184.3	205.5	212.1
57.5°	121.7	145.9	176.4	198.0	205.5
60°	111.1	136.7	168.4	190.5	198.0
62.5°	101.0	127.9	160.5	183.0	189.6
65°	90.4	119.1	152.1	174.6	181.7
67.5°	79.8	109.8	143.7	166.2	173.3
70°	69.2	100.1	134.9	157.9	164.0
72.5°	59.1	91.3	126.1	149.5	156.1
75°	48.9	82.0	117.7	140.2	147.3
77.5°	39.2	73.2	109.4	131.8	138.0
80°	30.4	64.4	101.0	123.5	129.6
82.5°	22.0	56.9	92.6	114.6	121.3
85°	14.6	49.4	85.1	106.7	113.3
87.5°	8.8	42.8	78.0	99.2	104.5
90°	4.0	37.0	71.9	92.2	98.3
92.5°	3.5	33.1	67.0	87.3	93.0
95°	3.1	29.5	62.2	82.0	87.3
97.5°	2.6	26.0	57.3	76.7	82.0
100°	2.2	22.9	53.4	71.9	77.2
102.5°	2.2	20.3	49.4	67.0	72.3
105°	1.8	17.6	45.4	63.1	68.3
107.5°	1.8	15.4	41.9	59.1	63.9
110°	1.8	13.2	38.4	55.1	60.0



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	1.3	11.0	35.3	51.1	56.0
115°	1.3	8.8	31.7	47.2	52.0
117.5°	1.3	6.6	28.7	43.7	48.1
120°	0.9	4.9	25.1	40.1	44.5
122.5°	0.9	3.1	22.5	36.2	40.6
125°	0.9	1.3	19.4	32.6	37.0
127.5°	0.9	0.4	16.3	29.1	33.1
130°	0.4	0.4	13.7	25.6	29.1
132.5°	0.4	0.4	10.6	22.0	26.0
135°	0.4	0.4	7.5	18.5	22.0
137.5°	0.4	0.0	4.9	15.0	18.1
140°	0.4	0.0	2.6	11.9	14.6
142.5°	0.4	0.0	0.4	8.4	11.5
145°	0.0	0.0	0.0	5.3	7.5
147.5°	0.0	0.0	0.0	2.2	4.4
150°	0.0	0.0	0.0	0.0	1.3
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)