

Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269



Scaled data based on original data using  
LM-79-2024 Approved Method: Electrical and Photometric Measurements of Solid-  
State Lighting Products

Test Report Prepared for  
Cooper Lighting Solutions

Brand: NEO-RAY

Report Number: P242349

Luminaire Tested: S122DRP-S485D940-X4F0-XX-UDD-D-W

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-2024  
Report Number: P242349  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-14)  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: S122DRP-S485D940-X4F0-XX-UDD-D-W  
Description: DEFINE 2 DIRECT RECESSED WITH SATIN DROP DIFFUSER  
STANDARD LIGHT ENGINE  
Light Source: (92) 4000K CCT, 90 CRI LEDS  
Ballast/Driver: -

**Summary**

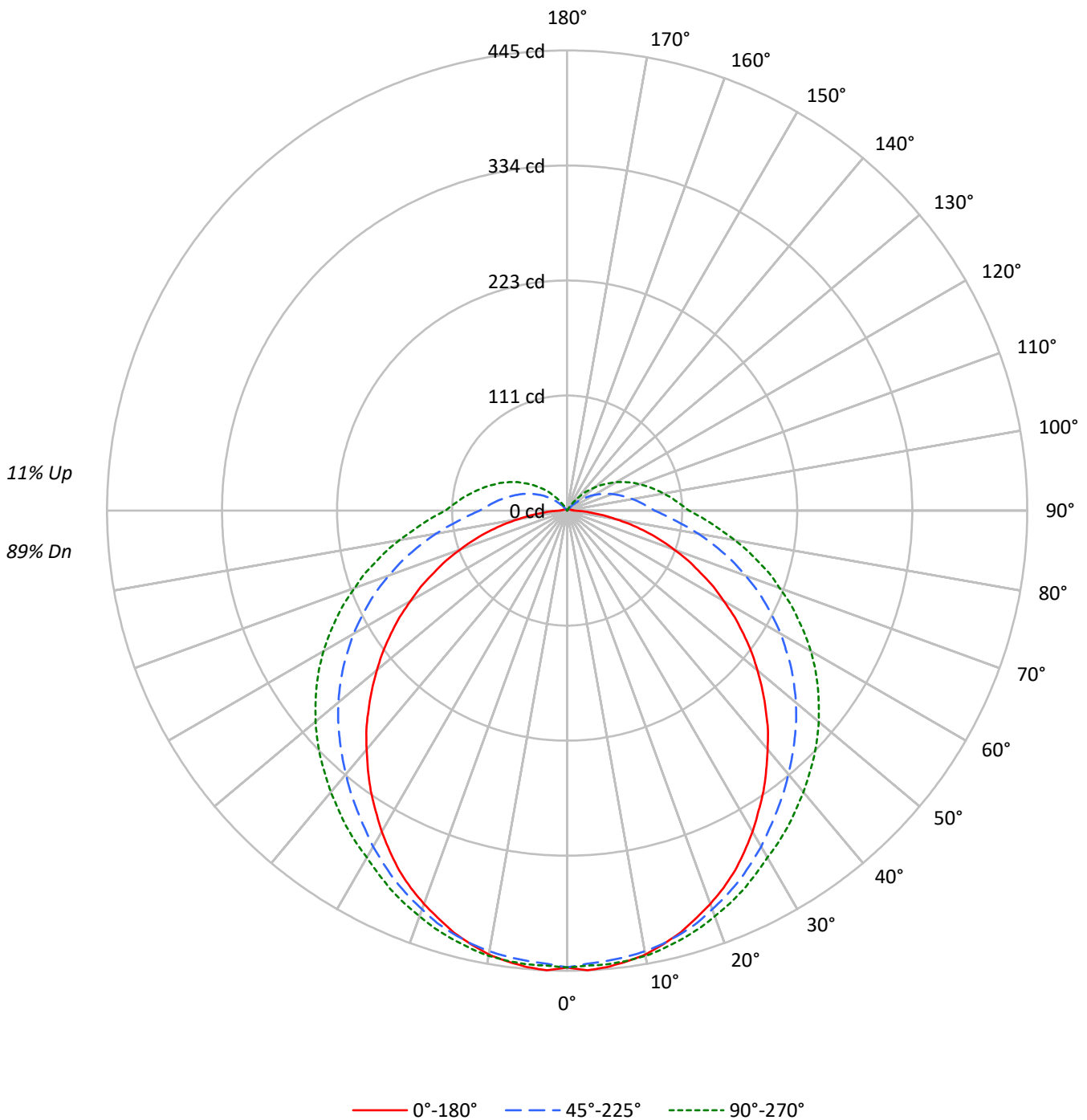
Lumens per Lamp: N/A  
Luminaire Lumens: 1685.7 lumens  
Efficiency: N/A  
Efficacy: 89.7 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.31 / 1.42  
Luminous Opening: Rectangular w/ Sides (W: 0.15' x L: 3.88' x H: 0.08')  
CIE Type: Semi-Direct

Input Watts (W): 18.8  
Input Voltage (V): 120  
Input Current (Ain): 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: 24 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	105	105	105	98	98	98	92	92	92	89
1	104	98	93	88	100	95	90	86	88	85	81	82	79	77	77	75	72	69
2	94	84	77	70	90	81	74	68	76	70	65	71	66	62	66	62	59	56
3	85	73	64	57	81	71	63	56	66	59	54	62	56	51	58	53	49	46
4	77	64	55	48	74	62	54	47	58	51	45	55	48	43	51	46	42	39
5	71	57	48	41	68	56	47	40	52	44	39	49	42	37	46	40	36	33
6	65	51	42	35	63	50	41	35	47	39	34	44	37	32	42	36	31	29
7	60	46	37	31	58	45	37	31	43	35	30	40	34	29	38	32	28	25
8	56	42	34	28	54	41	33	27	39	32	26	37	30	25	35	29	25	23
9	52	39	30	25	50	38	30	24	36	29	24	34	27	23	32	26	22	20
10	49	36	28	22	47	35	27	22	33	26	21	31	25	21	30	24	20	18

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

	0°	45°	90°
0°	8415	8415	8415
5°	8456	8066	8022
10°	8401	7795	7684
15°	8286	7515	7336
20°	8140	7218	7006
25°	7994	6934	6704
30°	7790	6644	6407
35°	7583	6365	6188
40°	7366	6123	5973
45°	7160	5907	5784
50°	6937	5707	5599
55°	6705	5492	5409
60°	6420	5270	5210
65°	6122	5015	4980
70°	5790	4739	4731
75°	5368	4465	4497
80°	4693	4180	4255
85°	4035	3913	4051

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 7160 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	41.9	2.5
10°-20°	120.1	7.1
20°-30°	182.0	10.8
30°-40°	221.6	13.1
40°-50°	238.5	14.1
50°-60°	231.6	13.7
60°-70°	202.2	12.0
70°-80°	155.6	9.2
80°-90°	104.2	6.2
90°-100°	71.9	4.3
100°-110°	52.5	3.1
110°-120°	34.7	2.1
120°-130°	19.3	1.1
130°-140°	8.1	0.5
140°-150°	1.4	0.1
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	344.0	20.4
0°-40°	565.6	33.6
0°-60°	1035.7	61.4
0°-90°	1497.8	88.9
90°-120°	159.1	9.4
90°-150°	187.9	11.1
90°-180°	188.0	11.2
0°-180°	1685.7	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	442	442	442	442	442	
5°	443	441	437	441	440	42
15°	423	424	424	430	429	119
25°	384	389	394	402	404	177
35°	331	342	354	368	373	207
45°	272	289	311	331	337	210
55°	208	231	264	288	296	186
65°	142	174	211	238	246	141
75°	79	115	156	183	191	83
85°	23	63	104	131	140	24
90°	6	44	84	110	118	4
95°	5	35	74	98	106	4
105°	3	22	55	78	84	4
115°	3	10	38	58	65	2
125°	1	1	22	39	45	1
135°	1	1	7	20	26	1
145°	0	0	0	4	7	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°	441.8	441.8	441.8	441.8	441.8
2.5°	445.0	443.1	438.6	441.8	440.5
5°	443.1	441.1	437.3	441.1	440.5
7.5°	439.9	438.6	435.4	439.9	439.2
10°	436.0	434.7	432.8	437.9	437.3
12.5°	429.6	430.3	429.0	434.1	433.5
15°	422.6	423.9	423.9	429.6	429.0
17.5°	413.6	416.2	418.1	423.9	423.9
20°	404.7	407.9	410.4	417.5	417.5
22.5°	395.0	398.9	402.7	409.8	411.1
25°	384.2	388.6	394.4	402.1	404.0
27.5°	371.4	378.4	384.8	394.4	395.7
30°	358.6	366.9	375.2	385.4	387.4
32.5°	344.5	354.1	364.3	376.5	380.3
35°	331.0	341.9	354.1	368.2	372.6
37.5°	316.3	328.5	343.8	359.2	363.7
40°	301.6	315.7	332.9	349.6	355.4
42.5°	287.5	301.6	322.1	340.6	346.4
45°	271.5	288.8	311.2	331.0	337.4
47.5°	256.1	274.7	300.3	320.8	327.8
50°	240.1	260.0	288.8	310.5	317.6
52.5°	224.7	245.9	276.6	299.0	306.7
55°	208.1	231.1	264.4	287.5	295.8
57.5°	192.1	217.7	251.0	276.0	284.3
60°	174.8	202.3	238.8	263.2	272.1
62.5°	159.4	188.2	224.7	251.0	259.3
65°	142.1	173.5	211.3	237.5	245.9
67.5°	126.8	159.4	197.8	224.1	233.1
70°	110.1	143.4	183.1	210.6	218.3
72.5°	94.8	129.3	169.7	196.6	206.2
75°	78.8	114.6	155.6	183.1	191.4
77.5°	63.4	100.5	142.1	169.7	178.6
80°	48.0	87.1	128.7	155.6	164.5
82.5°	35.2	73.6	115.9	142.8	151.1
85°	23.0	62.7	103.7	130.6	139.6
87.5°	14.1	52.5	93.5	119.7	128.1
90°	6.4	43.5	84.5	110.1	117.8
92.5°	5.8	39.7	78.8	103.7	111.4
95°	5.1	35.2	73.6	98.0	105.6
97.5°	4.5	32.0	69.1	92.8	100.5
100°	4.5	28.2	64.0	87.7	94.8
102.5°	3.8	25.0	59.5	82.6	89.6
105°	3.2	21.8	55.1	77.5	84.5
107.5°	3.2	18.6	50.6	72.4	79.4
110°	2.6	15.4	46.7	67.2	74.3



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	2.6	12.8	42.3	62.7	69.8
115°	2.6	9.6	38.4	57.6	64.7
117.5°	1.9	7.0	33.9	53.1	59.5
120°	1.9	4.5	30.1	48.0	55.1
122.5°	1.9	2.6	26.3	43.5	49.3
125°	1.3	1.3	21.8	39.1	44.8
127.5°	1.3	0.6	17.9	33.9	39.7
130°	1.3	0.6	14.1	29.5	34.6
132.5°	1.3	0.6	10.2	25.0	30.1
135°	0.6	0.6	7.0	20.5	25.6
137.5°	0.6	0.6	3.8	16.0	20.5
140°	0.6	0.0	1.3	11.5	15.4
142.5°	0.6	0.0	0.0	7.7	10.9
145°	0.0	0.0	0.0	3.8	7.0
147.5°	0.0	0.0	0.0	0.6	2.6
150°	0.0	0.0	0.0	0.0	0.0
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



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**CIE UGR TABLE:**

Reflectances:											
Ceiling		0.7	0.7	0.5	0.5	0.3	0.7	0.7	0.5	0.5	0.3
Wall		0.5	0.3	0.5	0.3	0.3	0.5	0.3	0.5	0.3	0.3
Reference plane		0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Room dimensions		Viewed crosswise					Viewed endwise				
X=2H	Y=2H	15.62	17.10	16.15	17.63	18.21	18.68	20.16	19.21	20.69	21.27
	3H	17.12	18.47	17.66	19.01	19.63	21.31	22.66	21.85	23.20	23.82
	4H	17.62	18.91	18.18	19.46	20.09	22.59	23.88	23.15	24.43	25.06
	6H	17.94	19.13	18.51	19.70	20.34	23.92	25.12	24.49	25.68	26.33
	8H	18.01	19.16	18.59	19.75	20.40	24.60	25.75	25.19	26.34	26.99
	12H	18.05	19.15	18.64	19.73	20.41	25.36	26.46	25.95	27.04	27.72
4H	2H	16.73	18.02	17.29	18.57	19.20	19.07	20.36	19.63	20.91	21.54
	3H	18.49	19.59	19.06	20.18	20.83	21.91	23.01	22.49	23.61	24.26
	4H	19.13	20.14	19.72	20.75	21.43	23.35	24.37	23.95	24.97	25.65
	6H	19.58	20.48	20.19	21.11	21.80	24.86	25.76	25.47	26.38	27.08
	8H	19.71	20.55	20.32	21.18	21.88	25.64	26.48	26.26	27.11	27.82
	12H	19.78	20.55	20.42	21.20	21.91	26.51	27.28	27.15	27.93	28.64
8H	4H	19.97	20.82	20.59	21.44	22.15	23.55	24.39	24.16	25.02	25.72
	6H	20.63	21.35	21.28	22.02	22.73	25.21	25.93	25.86	26.59	27.31
	8H	20.87	21.52	21.52	22.19	22.91	26.12	26.76	26.77	27.44	28.16
	12H	21.03	21.61	21.69	22.27	23.06	27.15	27.73	27.81	28.39	29.18
12H	4H	20.20	20.97	20.84	21.62	22.34	23.56	24.32	24.19	24.97	25.69
	6H	20.98	21.63	21.64	22.30	23.02	25.24	25.89	25.90	26.57	27.29
	8H	21.32	21.89	21.98	22.56	23.34	26.21	26.79	26.87	27.45	28.24