

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: P243396

Luminaire Tested: S123RDRP-H560D835-X4F0-XX-UDD-F-W

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-2024
Report Number: P243396
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-64)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: S123RDRP-H560D835-X4F0-XX-UDD-F-W
Description: DEFINE 3 REGRESSED DIRECT RECESSED WITH SATIN FLUSH DIFFUSER.
HIGH PERFORMANCE LIGHT ENGINE
Light Source: (184) 3500K CCT, 80 CRI LEDS
Ballast/Driver: -

Summary

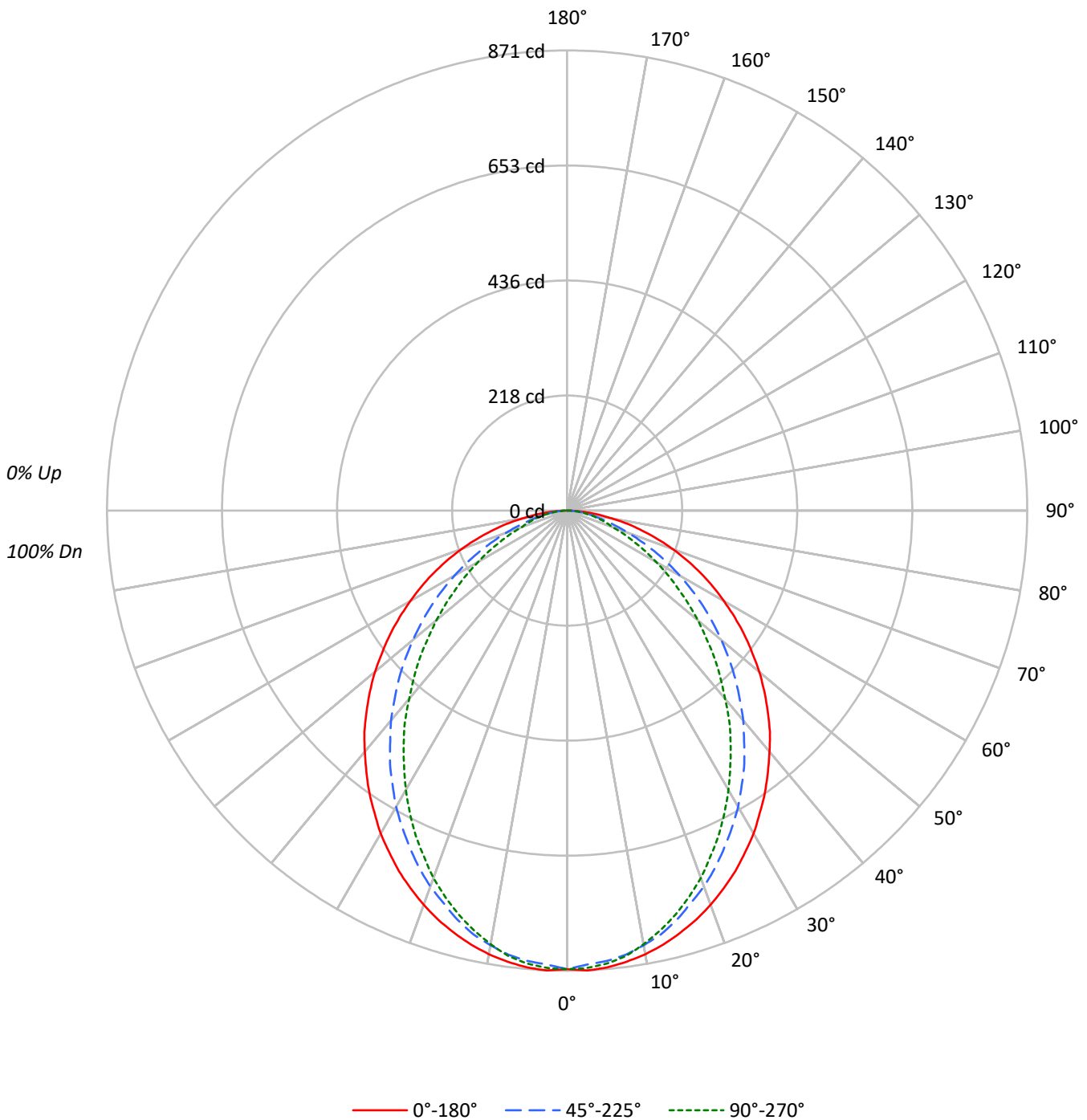
Lumens per Lamp: N/A
Luminaire Lumens: 1959.8 lumens
Efficiency: N/A
Efficacy: 113.9 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 1.07 / 1.22
Luminous Opening: Rectangular (W 0.23' x L: 3.88' x H: 0')
CIE Type: Direct

Input Watts (W): 17.2
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	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	110	105	101	98	107	103	99	96	99	96	93	95	93	90	91	89	88	86
2	101	93	87	81	98	91	85	80	87	83	78	84	80	77	81	78	75	73
3	92	82	75	69	90	81	74	68	78	72	67	75	70	66	73	68	65	62
4	85	73	65	59	83	72	64	58	70	63	58	67	62	57	65	60	56	54
5	78	66	58	51	76	65	57	51	63	56	50	61	55	50	59	54	49	47
6	73	60	51	45	71	59	51	45	57	50	45	56	49	44	54	48	44	42
7	67	55	46	40	66	54	46	40	52	45	40	51	44	40	49	44	39	37
8	63	50	42	36	61	49	41	36	48	41	36	47	40	36	46	40	35	34
9	59	46	38	33	58	45	38	33	44	37	32	43	37	32	42	36	32	30
10	55	43	35	30	54	42	35	30	41	34	30	40	34	30	39	34	29	28

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	10521	10521	10521
5°	10561	10415	10473
10°	10495	10282	10258
15°	10383	10064	9939
20°	10242	9769	9545
25°	10075	9416	9077
30°	9881	9060	8548
35°	9658	8652	7980
40°	9431	8207	7353
45°	9200	7714	6766
50°	8952	7179	6085
55°	8650	6621	5395
60°	8308	5964	4703
65°	7973	5220	4015
70°	7513	4370	3214
75°	6931	3466	3058
80°	6052	3071	2792
85°	5104	2684	2601

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 9200 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	81.7	4.2
10°-20°	227.3	11.6
20°-30°	327.3	16.7
30°-40°	368.6	18.8
40°-50°	352.2	18.0
50°-60°	288.0	14.7
60°-70°	193.4	9.9
70°-80°	96.4	4.9
80°-90°	24.9	1.3
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	636.3	32.5
0°-40°	1004.9	51.3
0°-60°	1645.0	83.9
0°-90°	1959.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1959.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	868	868	868	868	868	
5°	868	865	856	863	861	82
15°	827	821	802	797	792	233
25°	753	737	704	689	679	347
35°	653	627	585	552	539	408
45°	537	505	450	411	395	414
55°	409	373	313	270	255	366
65°	278	239	182	149	140	275
75°	148	113	74	67	65	157
85°	37	21	19	18	19	43
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	868.0	868.0	868.0	868.0	868.0	868.0	868.0	868.0	868.0	868.0	868.0
2.5°	871.4	869.4	866.7	867.4	868.0	868.7	868.7	868.0	866.0	863.4	860.0
5°	868.0	866.0	863.4	863.4	864.7	864.7	864.7	864.0	862.0	859.4	856.0
7.5°	861.4	860.0	856.7	857.4	858.0	858.0	858.0	857.4	854.7	851.4	848.0
10°	852.7	850.7	848.0	848.0	848.7	848.7	848.7	847.4	844.0	840.0	835.4
12.5°	841.4	839.4	836.7	836.7	836.7	836.7	836.7	834.7	829.4	825.4	821.4
15°	827.4	825.4	822.7	822.7	822.0	821.4	820.0	816.7	812.0	807.3	802.0
17.5°	812.0	809.3	806.0	805.3	804.7	804.0	802.0	800.0	793.3	786.7	778.7
20°	794.0	791.3	788.0	787.3	785.3	783.3	782.0	778.0	770.7	762.7	757.3
22.5°	774.0	771.3	768.0	766.7	762.7	761.3	759.3	753.3	745.3	738.0	732.0
25°	753.3	750.0	746.0	744.0	739.3	736.7	736.0	727.3	719.3	711.3	704.0
27.5°	729.3	726.7	723.3	719.3	714.7	711.3	710.0	702.0	692.0	682.7	676.0
30°	706.0	702.0	698.7	694.0	687.3	684.0	681.3	673.3	664.7	653.3	647.3
32.5°	678.7	676.0	672.0	667.3	660.7	658.0	654.0	644.0	632.7	624.7	615.3
35°	652.7	650.0	644.0	639.3	630.0	627.3	623.3	614.7	602.0	592.7	584.7
37.5°	624.0	620.7	616.0	609.3	601.3	598.0	592.7	584.0	569.3	560.0	550.0
40°	596.0	591.3	586.0	578.7	570.7	567.3	562.7	550.0	538.0	527.3	518.7
42.5°	568.0	562.7	556.0	549.3	540.7	536.0	530.7	518.7	505.3	495.3	483.3
45°	536.7	532.7	526.0	518.0	508.0	504.7	498.7	486.0	472.7	462.0	450.0
47.5°	506.0	501.3	494.7	486.7	476.7	472.0	466.0	453.3	440.0	426.7	416.0
50°	474.7	470.0	462.0	454.0	444.7	438.7	433.3	420.7	406.0	394.0	380.7
52.5°	441.3	437.3	430.7	422.7	410.7	406.0	400.7	386.7	372.7	358.7	346.7
55°	409.3	406.7	398.7	390.7	378.0	372.7	367.3	352.7	338.7	324.7	313.3
57.5°	376.0	374.0	366.0	356.7	345.3	340.0	333.3	318.7	305.3	291.3	279.3
60°	342.7	340.7	332.7	323.3	312.7	306.0	298.7	287.3	272.0	259.3	246.0
62.5°	310.7	308.0	301.3	291.3	279.3	272.7	266.0	252.7	238.7	225.3	213.3
65°	278.0	274.7	266.7	256.7	245.3	239.3	232.7	220.0	206.0	193.3	182.0
67.5°	245.3	242.0	233.3	225.3	212.0	206.0	200.0	187.3	174.0	161.3	150.7
70°	212.0	208.7	202.0	191.3	180.0	174.0	168.0	154.7	142.7	133.3	123.3
72.5°	179.3	176.7	170.0	160.0	149.3	143.3	136.7	125.3	114.7	104.7	97.3
75°	148.0	144.0	138.0	128.7	118.0	112.7	108.0	96.7	86.7	80.0	74.0
77.5°	118.0	113.3	106.7	99.3	89.3	84.0	79.3	70.0	63.3	58.7	57.3
80°	86.7	86.0	79.3	71.3	62.7	58.7	54.0	48.0	46.0	45.3	44.0
82.5°	60.7	58.0	52.7	45.3	38.7	36.0	34.7	33.3	32.0	32.0	30.7
85°	36.7	34.0	29.3	23.3	22.0	21.3	20.7	20.7	20.0	19.3	19.3
87.5°	16.0	13.3	10.0	9.3	8.7	8.7	9.3	9.3	9.3	8.7	8.7
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°
0°	868.0	868.0	868.0	868.0	868.0	868.0	868.0	868.0	868.0	868.0
2.5°	861.4	864.7	866.7	867.4	867.4	867.4	868.0	868.0	867.4	866.7
5°	856.7	860.0	861.4	862.7	862.7	862.7	862.7	862.7	862.0	860.7
7.5°	849.4	851.4	853.4	852.7	852.7	852.0	851.4	852.0	850.7	850.7
10°	836.0	838.0	839.4	837.4	837.4	838.0	838.0	837.4	835.4	833.4
12.5°	820.7	822.7	820.7	821.4	820.0	818.7	818.0	817.4	815.4	814.0
15°	800.7	800.7	799.3	799.3	797.3	794.7	794.0	794.7	792.0	792.0
17.5°	778.7	777.3	775.3	774.0	773.3	773.3	770.7	770.7	767.3	766.7
20°	754.7	753.3	751.3	748.0	746.7	747.3	744.7	742.7	740.7	740.0
22.5°	729.3	726.0	724.0	720.7	718.0	718.0	716.0	712.7	710.7	708.7
25°	700.7	697.3	693.3	690.7	688.7	685.3	684.0	681.3	679.3	678.7
27.5°	671.3	666.0	660.7	658.0	656.7	652.7	650.7	649.3	645.3	644.7
30°	640.0	636.0	629.3	624.7	621.3	622.0	617.3	614.7	612.7	610.7
32.5°	610.0	603.3	596.7	590.7	586.7	586.0	581.3	578.7	576.7	574.7
35°	576.0	569.3	561.3	556.0	552.0	550.0	545.3	544.0	540.7	539.3
37.5°	542.0	534.7	526.7	520.0	517.3	512.7	510.7	507.3	504.7	504.7
40°	508.7	500.0	492.0	484.0	480.7	478.0	472.7	470.0	466.7	464.7
42.5°	474.0	464.0	456.7	449.3	444.7	442.7	436.7	433.3	430.0	429.3
45°	439.3	429.3	420.0	412.7	410.7	406.7	400.7	396.0	395.3	394.7
47.5°	404.0	394.0	385.3	377.3	374.7	370.0	366.0	362.7	358.7	356.7
50°	370.0	360.0	350.7	342.0	338.7	334.7	330.7	326.0	324.7	322.7
52.5°	336.0	324.7	314.7	306.7	304.0	300.7	296.0	292.0	290.0	288.7
55°	301.3	290.0	281.3	273.3	270.0	268.0	262.7	259.3	256.7	255.3
57.5°	267.3	256.0	248.0	242.0	237.3	235.3	230.0	226.7	225.3	224.7
60°	235.3	224.7	216.0	210.0	206.0	204.0	200.0	196.7	194.7	194.0
62.5°	203.3	194.0	186.0	180.0	177.3	174.7	171.3	168.7	166.7	166.7
65°	172.7	163.3	156.0	151.3	148.7	147.3	143.3	142.0	140.0	140.0
67.5°	142.7	136.0	130.7	124.7	122.7	122.7	118.7	117.3	116.0	116.0
70°	116.7	110.7	104.7	101.3	99.3	98.7	95.3	93.3	92.0	90.7
72.5°	91.3	86.0	80.7	80.0	80.0	79.3	79.3	78.0	78.0	78.7
75°	70.0	68.7	67.3	67.3	66.7	66.0	66.0	65.3	65.3	65.3
77.5°	56.0	55.3	54.7	54.0	54.0	53.3	52.7	52.7	52.7	52.7
80°	42.7	42.0	42.0	41.3	40.7	41.3	40.7	40.7	40.0	40.0
82.5°	30.0	30.0	30.0	29.3	29.3	29.3	29.3	28.7	28.7	29.3
85°	18.7	18.7	18.7	18.7	18.0	18.7	18.0	18.0	18.0	18.7
87.5°	8.0	8.7	8.0	8.7	8.7	8.0	8.0	8.0	8.0	8.0
90°	0.0	0.0	0.0	0.0	0.0	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	19.70	21.25	20.07	21.57	21.88	16.89	18.45	17.26	18.76	19.08
	3H	21.53	22.92	21.91	23.25	23.61	17.97	19.36	18.35	19.69	20.05
	4H	22.21	23.52	22.61	23.87	24.25	18.37	19.68	18.76	20.02	20.40
	6H	22.71	23.92	23.12	24.29	24.68	18.69	19.90	19.10	20.27	20.66
	8H	22.87	24.03	23.30	24.41	24.81	18.80	19.95	19.22	20.34	20.74
	12H	22.97	24.07	23.40	24.46	24.89	18.87	19.98	19.30	20.36	20.79
4H	2H	19.94	21.25	20.34	21.60	21.98	17.61	18.92	18.01	19.27	19.65
	3H	21.93	23.02	22.34	23.42	23.82	18.83	19.92	19.24	20.32	20.72
	4H	22.72	23.70	23.15	24.12	24.55	19.32	20.30	19.75	20.72	21.16
	6H	23.34	24.19	23.79	24.63	25.09	19.74	20.60	20.20	21.04	21.50
	8H	23.54	24.34	24.00	24.78	25.25	19.89	20.69	20.35	21.13	21.60
	12H	23.69	24.40	24.17	24.88	25.35	20.00	20.71	20.48	21.19	21.66
8H	4H	22.76	23.56	23.22	24.00	24.47	19.64	20.44	20.10	20.88	21.35
	6H	23.42	24.09	23.92	24.58	25.05	20.15	20.81	20.65	21.30	21.78
	8H	23.67	24.26	24.18	24.77	25.25	20.36	20.95	20.87	21.46	21.95
	12H	23.86	24.38	24.37	24.87	25.44	20.53	21.06	21.04	21.55	22.11
12H	4H	22.75	23.46	23.23	23.94	24.41	19.68	20.39	20.16	20.87	21.34
	6H	23.41	24.00	23.92	24.51	25.00	20.21	20.80	20.72	21.31	21.80
	8H	23.69	24.21	24.19	24.70	25.27	20.47	20.99	20.98	21.48	22.05