LIGHTOLIER

Downlighting

SlimSurface

S5R, S7R & S10R Round 5", 7" & 10"

SlimSurface is a 5/8" thick LED surface mounted luminaire with the appearance of a recessed downlight. Easy to install into most standard j-boxes, the SlimSurface round apertures are available as a 5" 650lm, 7" 1000lm and 10" 2200lm fixture.

Project:

Location:

Cat.No:

Type:

Lamps: Qty:

Notes:

Ordering guide

example: S5R830K7AL

Series	CRI	CCT	Lumens	Finish	Dimming
S5R SlimSurface 5" Round	**9** 90	**27K** 2700K **30K** 3000K **35K** 3500K **40K** 4000K	**7** 650lm	**—** White **AL** Aluminum **BK** Black	**blank** ELV / Triac (120V)
				W White **AL** Aluminum **BK** Black	**Z10U** 0-10V (120V-277V)
S7R SlimSurface 7" Round	**9** 90	**27K** 2700K **30K** 3000K **35K** 3500K **40K** 4000K	**10** 1000lm	**—** White **AL** Aluminum **BK** Black	**blank** ELV / Triac (120V)
				W White **AL** Aluminum **BK** Black	**Z10U** 0-10V (120V-277V)
S10R SlimSurface 10" Round[2]	**9** 90	**27K** 2700K **30K** 3000K **35K** 3500K **40K** 4000K	**22** 2200lm	**W** White **AL** Aluminum **BK** Black	**blank** ELV / Triac (120V) **Z10U** 0-10V (120V-277V)

IMPORTANT: SlimSurface LED 10" round installs into 4-11/16" J-box (not wet location listed).

White

Aluminum

Black

Features

1. **Flange:** One piece plastic flange. Injection molded white, applied aluminum or black.
2. **Lens:** High transmittance lens allowing for smooth, comfortable light pattern.
3. **Power supply:** Integral class 2 driver. Factory wired electronic LED driver (see Electrical section for specifications)
4. **LED Strip:** Utilizes LEDs.
5. Lifetime: Expected lifetime 50,000 hours and backed by a 5-year warranty*
6. **Compliance:** Non-conductive fixture for shower light application (not applicable to metal trim model).

Dimming

Intended for ELV/Triac (120V) or 0-10V dimming (120V-277V) based on the configuration. Min 90°C supply conductors.

Electrical

Electronic power supply: RoHS compliant. Class 2 power unit. Unit tolerates sustained open and short circuit output conditions without damage.

Labels

cULus listed. ENERGY STAR® certified. All models are damp location rated for walls or ceilings. The 5" & 7" are suitable for ceiling mount wet locations when installed per instructions.

Electrical specifications	Dimming	Input volts	Input frequency	Input current	Input Power	THD Factor	Power Factor	Minimum Operating Temp.
Slim 5" 650lm	Triac	120V	50/60Hz	0.08A	9.5W	<15%	>0.9	-20°C
	0-10V	120V	50/60Hz	0.09A	10.1W	<20%	>0.9	-20°C
		277V	50/60Hz	0.04A	10.2W	<20%	>0.9	-20°C
Slim 7" 1000lm	Triac	120V	50/60Hz	0.13A	14.2W	<15%	>0.9	-20°C
	0-10V	120V	50/60Hz	0.12A	14.4W	<20%	>0.9	-20°C
		277V	50/60Hz	0.06A	14.7W	<20%	>0.9	-20°C
Slim 10" 2200lm	Triac	120V	50/60Hz	0.20A	23.2W	<20%	>0.9	-20°C
	0-10V	120V	50/60Hz	0.20A	23.2W	<10%	>0.95	-20°C
		277V	50/60Hz	0.09A	24.6W	<15%	>0.95	-20°C

Fore more details, please see LED-DIM-DL spec sheet.
* See Philips.com/warranties for warranty details.

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ENERGY STAR

S5R, S7R & S10R SlimSurface LED

Round 5", 7" & 10" apertures

Compatibility (10" Round)

Install into 4-11/16" J-box:

4 11/16" square (metal)

Compatible with S10R only

Compatibility (5" & 7" Round)

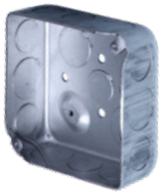
Installs into standard J-box applications for 5" & 7" models:

3½" round (plastic)

4" square (plastic)

Not compatible with S5R

4" octagonal (metal)



4" square (metal)

Not compatible with S5R

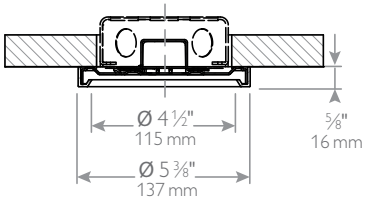
Fire rated J-box

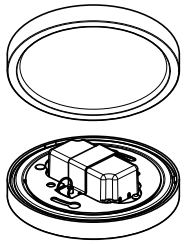
Fire rated classification is per the ceiling and junction box ratings.

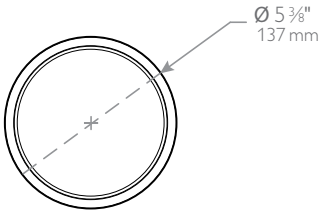
Note: A 2 1/8" deep octagon junction box is recommended for through circuit wiring applications.

Dimensions

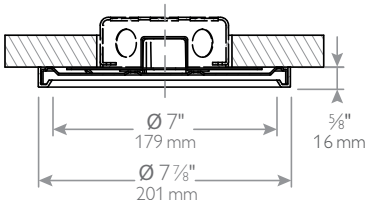
SlimSurface LED 5" downlight

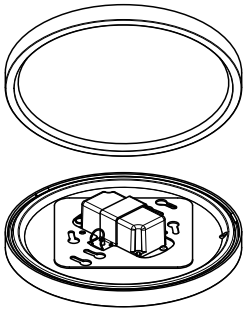


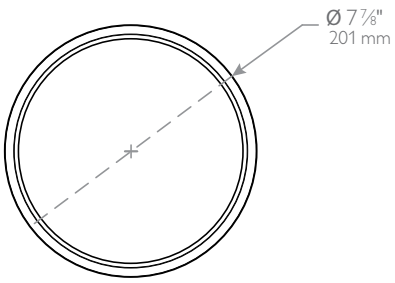




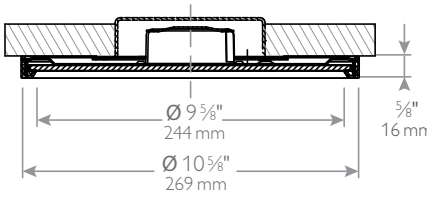
SlimSurface LED 7" downlight

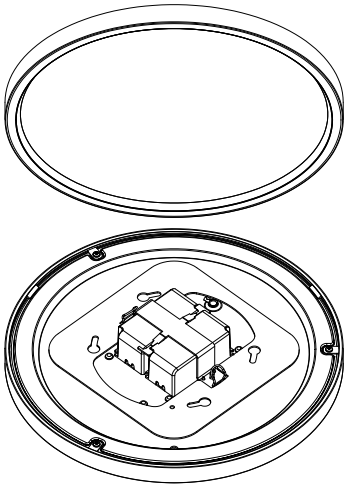


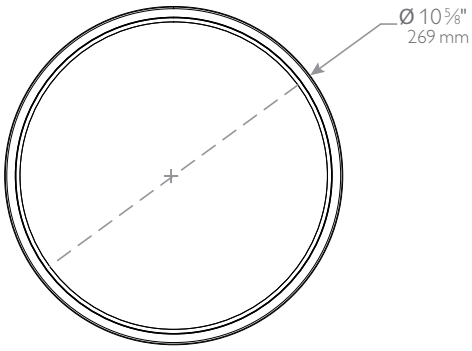




SlimSurface LED 10" downlight





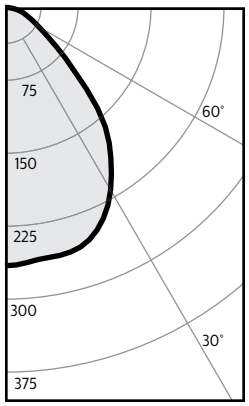


S5R, S7R & S10R SlimSurface LED

Round 5", 7" & 10" apertures

S5R927K7 • 10W LED, 90CRI, 2700K

Candela Curves



Angle	Mean CP	Lumens
0	266	
5	263	25
10	261	
15	260	736
20	254	
25	239	110
30	217	
35	190	118
40	160	
45	118	91
50	81	
55	55	51
60	40	
65	30	31
70	23	
75	18	18
80	11	
85	4	5
90	0	

Report[1]: 1053GFR

Output lumens:	523lms	Efficacy:	57.4lm/w
Spacing Criterion:	1.2	CCT[3]:	2700K
Beam Angle:	87°	CRI:	90min
Input Watts[2]:	9.1W		

Single unit data

Height to Lighted Plane	Initial center beam foot-candles	Beam dia. (ft)*
5'	11	6.0'
6'	7	7.2'
7'	5	8.4'
8'	4	9.6'
9'	3	10.8'

* Beam diameter is where foot-candles drop to 50% of maximum.

Multiple unit data - RCR 2

Spacing on center	Initial center beam foot-candles	Watts per sq.ft.
5'	21.8	0.40
6'	14.2	0.26
7'	10.2	0.19
8'	8.5	0.16
9'	6.8	0.13

38'x38'x10' Room, Workplane 2.5' above floor, 80/50/20% Reflectances

Coefficients of utilization

Ceiling	80%				70%		50%		30%		0%
Wall	70	50	30	10	50	10	50	10	50	10	0
RCR	Zonal cavity method - Effective floor reflectance = 20%										
0	119	119	119	119	116	116	111	111	106	106	100
1	111	107	103	100	105	98	100	95	97	92	88
2	102	96	90	85	94	84	90	82	87	80	77
3	95	86	79	73	84	73	82	72	79	70	67
4	88	78	70	64	76	64	74	63	72	62	60
5	82	71	63	57	70	57	68	56	66	56	53
6	76	64	57	51	64	51	62	50	60	50	48
7	71	59	51	46	58	46	57	45	56	45	43
8	67	54	47	42	54	41	53	41	51	41	39
9	63	50	43	38	50	38	49	38	48	37	36
10	59	47	40	35	46	35	45	34	44	34	33

Room Cavity Ratio

Zonal lumens & percentages

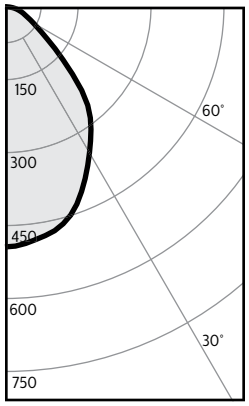
Zone	Lumens	%Luminaire
0-30	208	39.8%
0-40	326	62.5%
0-60	469	89.7%
0-90	522	100.0%

CRI and CCT adjustment factors

90CRI 2700K = 84%

S7R927K10 • 14W LED, 90CRI, 2700K

Candela Curves



Angle	Mean CP	Lumens
0	496	
5	490	46
10	479	
15	464	130
20	433	
25	391	180
30	348	
35	309	193
40	265	
45	197	152
50	135	
55	92	85
60	68	
65	51	52
70	40	
75	30	32
80	21	
85	9	10
90	0	

Report[1]: 962GFR

Output lumens:	880lms	Efficacy:	65.2lm/w
Spacing Criterion:	1.1	CCT[3]:	2700K
Beam Angle:	83°	CRI:	90min
Input Watts[2]:	13.5W		

Single unit data

Height to Lighted Plane	Initial center beam foot-candles	Beam dia. (ft)*
5'	20	5.5'
6'	14	6.6'
7'	10	7.7'
8'	8	8.8'
9'	6	9.9'

* Beam diameter is where foot-candles drop to 50% of maximum.

Multiple unit data - RCR 2

Spacing on center	Initial center beam foot-candles	Watts per sq.ft.
5'	21.8	2.89
6'	14.2	1.90
7'	10.2	1.35
8'	8.5	1.13
9'	6.8	0.90

38'x38'x10' Room, Workplane 2.5' above floor, 80/50/20% Reflectances

Coefficients of utilization

Ceiling	80%				70%		50%		30%		0%
Wall	70	50	30	10	50	10	50	10	50	10	0
RCR	Zonal cavity method - Effective floor reflectance = 20%										
0	119	119	119	119	116	116	111	111	106	106	100
1	111	107	103	100	104	98	100	95	96	92	88
2	102	96	90	85	94	84	90	82	87	80	77
3	95	86	79	74	85	73	82	72	79	71	67
4	88	78	70	65	77	64	74	63	72	62	60
5	82	71	63	57	70	57	68	56	66	56	53
6	76	65	57	51	64	51	62	51	61	50	48
7	71	59	52	46	59	46	57	46	56	45	43
8	67	55	47	42	54	42	53	42	52	41	39
9	63	51	43	38	50	38	49	38	48	38	36
10	59	47	40	35	47	35	46	35	45	35	33

Room Cavity Ratio

Zonal lumens & percentages

Zone	Lumens	%Luminaire
0-30	356	40.5%
0-40	549	62.4%
0-60	786	89.3%
0-90	880	100.0%

CRI and CCT adjustment factors

90CRI 2700K = 84%

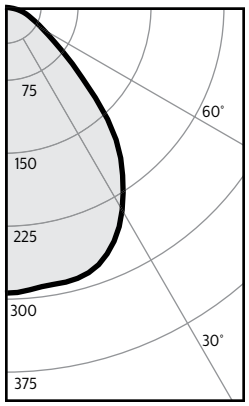
1. Tested using absolute photometry as specified in LM79: IESNA Approved Method for the Electrical and Photometric Measurements of Solid-State Lighting Products.
2. Wattage: controlled to within 5%
3. Correlated Color Temperature: within specs as defined in ANSI_NEMA_ANSLG C78.377-2008: Specifications for the Chromaticity of Solid State Lighting Products.

S5R, S7R & S10R SlimSurface LED

Round 5", 7" & 10" apertures

S5R827K7 • 10W LED, 80CRI, 2700K

Candela Curves



Angle	Mean CP	Lumens
0	294	
5	291	28
10	289	
15	288	81
20	281	
25	265	121
30	241	
35	211	131
40	178	
45	131	102
50	91	
55	62	57
60	45	
65	34	34
70	26	
75	20	21
80	13	
85	4	5
90	0	

Report[1]: 1054GFR

Output lumens:	581lms	Efficacy:	62.5lm/w
Spacing Criterion:	1.2	CCT[3]:	2700K
Beam Angle:	87°	CRI:	80min
Input Watts[2]:	9.3W		

Single unit data

Height to Lighted Plane	Initial center beam foot-candles	Beam dia. (ft)*
5'	12	6.0'
6'	8	7.2'
7'	6	8.4'
8'	5	9.6'
9'	4	10.8'

* Beam diameter is where foot-candles drop to 50% of maximum.

Multiple unit data - RCR 2

Spacing on center	Initial center beam foot-candles	Watts per sq.ft.
5'	24.2	2.77
6'	15.8	1.82
7'	11.3	1.30
8'	9.5	1.08
9'	7.5	0.87

38'x38'x10' Room, Workplane 2.5' above floor, 80/50/20% Reflectances

Coefficients of utilization

Ceiling	80%				70%		50%		30%		0%
Wall	70	50	30	10	50	10	50	10	50	10	0
RCR	Zonal cavity method - Effective floor reflectance = 20%										
0	119	119	119	119	116	116	111	111	106	106	100
1	111	107	103	100	105	105	100	95	97	92	88
2	102	96	90	85	94	94	90	82	87	80	77
3	95	86	79	73	84	84	82	72	79	70	67
4	88	78	70	64	76	76	74	63	72	62	60
5	82	71	63	57	70	70	68	56	66	56	53
6	76	64	57	51	64	64	62	50	60	50	48
7	71	59	51	46	58	58	57	45	56	45	43
8	67	54	47	42	54	54	53	41	51	41	39
9	63	50	43	38	50	50	49	38	48	37	36
10	59	47	40	35	46	46	45	34	44	34	33

Room Cavity Ratio

Zonal lumens & percentages

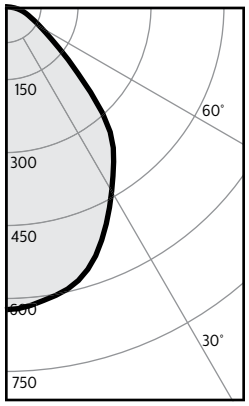
Zone	Lumens	%Luminaire
0-30	231	39.7%
0-40	362	62.3%
0-60	521	89.6%
0-90	581	100.0%

CRI and CCT adjustment factors

90CRI 2700K = 84%

S7R827K10 • 14W LED, 80CRI, 2700K

Candela Curves



Angle	Mean CP	Lumens
0	625	
5	618	59
10	604	
15	584	164
20	546	
25	494	227
30	440	
35	390	244
40	337	
45	250	193
50	170	
55	117	108
60	85	
65	65	65
70	51	
75	39	41
80	27	
85	12	13
90	0	

Report[1]: 964GFR

Output lumens:	1113lms	Efficacy:	83.1lm/w
Spacing Criterion:	1.1	CCT[3]:	2700K
Beam Angle:	83°	CRI:	80min
Input Watts[2]:	13.4W		

Single unit data

Height to Lighted Plane	Initial center beam foot-candles	Beam dia. (ft)*
5'	25	5.5'
6'	17	6.6'
7'	13	7.7'
8'	10	8.8'
9'	8	9.9'

* Beam diameter is where foot-candles drop to 50% of maximum.

Multiple unit data - RCR 2

Spacing on center	Initial center beam foot-candles	Watts per sq.ft.
5'	24.2	3.68
6'	15.8	2.42
7'	11.3	1.73
8'	9.5	1.44
9'	7.5	1.15

38'x38'x10' Room, Workplane 2.5' above floor, 80/50/20% Reflectances

Coefficients of utilization

Ceiling	80%				70%		50%		30%		0%
Wall	70	50	30	10	50	10	50	10	50	10	0
RCR	Zonal cavity method - Effective floor reflectance = 20%										
0	119	119	119	119	116	116	111	111	106	106	100
1	111	107	103	100	104	98	100	95	96	92	88
2	102	96	90	85	94	84	90	82	87	80	77
3	95	86	79	74	85	73	82	72	79	71	67
4	88	78	70	65	77	64	74	63	72	62	60
5	82	71	63	57	70	57	68	56	66	56	53
6	76	65	57	51	64	51	62	51	61	50	48
7	71	59	52	46	59	46	57	46	56	45	43
8	67	55	47	42	54	42	53	42	52	41	39
9	63	51	43	38	50	38	49	38	48	38	36
10	59	47	40	35	47	35	46	35	45	35	33

Room Cavity Ratio

Zonal lumens & percentages

Zone	Lumens	%Luminaire
0-30	449	40.4%
0-40	693	62.3%
0-60	994	89.3%
0-90	1113	100.0%

CRI and CCT adjustment factors

90CRI 2700K = 84%

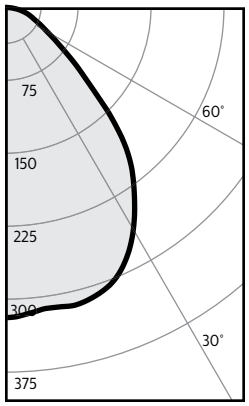
1. Tested using absolute photometry as specified in LM79: IESNA Approved Method for the Electrical and Photometric Measurements of Solid-State Lighting Products.
2. Wattage: controlled to within 5%
3. Correlated Color Temperature: within specs as defined in ANSI_NEMA_ANSLG C78.377-2008: Specifications for the Chromaticity of Solid State Lighting Products.

S5R, S7R & S10R SlimSurface LED

Round 5", 7" & 10" apertures

S5R830K7 • 10W LED, 80CRI, 3000K

Candela Curves



Angle	Mean CP	Lumens
0	319	
5	315	30
10	313	
15	313	88
20	306	
25	290	131
30	264	
35	231	142
40	197	
45	146	109
50	100	
55	69	62
60	50	
65	38	37
70	29	
75	22	22
80	15	
85	6	6
90	0	

Report[1]: 1055GFR

Output lumens:	628lms	Efficacy:	69.0lm/w
Spacing Criterion:	1.2	CCT[3]:	3000K
Beam Angle:	87°	CRI:	80min
Input Watts[2]:	9.1W		

Single unit data

Height to Lighted Plane	Initial center beam foot-candles	Beam dia. (ft)*
5'	13	6.0'
6'	9	7.2'
7'	7	8.4'
8'	5	9.6'
9'	4	10.8'

* Beam diameter is where foot-candles drop to 50% of maximum.

Multiple unit data - RCR 2

Spacing on center	Initial center beam foot-candles	Watts per sq.ft.
5'	26.2	3.06
6'	17.1	2.01
7'	12.2	1.43
8'	10.2	1.19
9'	8.1	0.96

38'x38'x10' Room, Workplane 2.5' above floor, 80/50/20% Reflectances

Coefficients of utilization

Ceiling	80%				70%		50%		30%		0%
Wall	70	50	30	10	50	10	50	10	50	10	0
RCR	Zonal cavity method - Effective floor reflectance = 20%										
0	119	119	119	119	116	116	111	111	106	106	100
1	111	107	103	100	105	98	100	95	97	92	88
2	102	96	90	85	94	84	90	82	87	80	77
3	95	86	79	73	84	73	82	72	79	70	67
4	88	78	70	64	76	64	74	63	72	62	60
5	82	71	63	57	70	57	68	56	66	56	53
6	76	64	57	51	64	51	62	50	60	50	48
7	71	59	51	46	58	46	57	45	56	45	43
8	67	54	47	42	54	41	53	41	51	41	39
9	63	50	43	38	50	38	49	38	48	37	36
10	59	47	40	35	46	35	45	34	44	34	33

Room Cavity Ratio

Zonal lumens & percentages

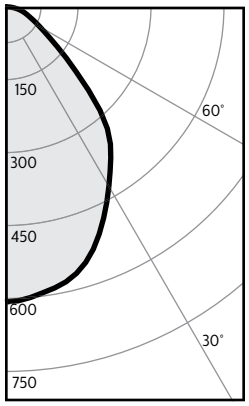
Zone	Lumens	%Luminaire
0-30	249	39.7%
0-40	391	62.3%
0-60	562	89.6%
0-90	628	100.0%

CRI and CCT adjustment factors

90CRI 2700K = 84%

S7R830K10 • 14W LED , 80CRI, 3000K

Candela Curves



Angle	Mean CP	Lumens
0	607	
5	601	57
10	588	
15	568	159
20	531	
25	480	221
30	427	
35	379	237
40	328	
45	243	187
50	165	
55	113	105
60	83	
65	63	63
70	49	
75	37	39
80	26	
85	12	13
90	0	

Report[1]: 961GFR

Output lumens:	1081lms	Efficacy:	80.0lm/w
Spacing Criterion:	1.1	CCT[3]:	3000K
Beam Angle:	83°	CRI:	80min
Input Watts[2]:	13.5W		

Single unit data

Height to Lighted Plane	Initial center beam foot-candles	Beam dia. (ft)*
5'	24	5.5'
6'	17	6.6'
7'	12	7.7'
8'	9	8.8'
9'	7	9.9'

* Beam diameter is where foot-candles drop to 50% of maximum.

Multiple unit data - RCR 2

Spacing on center	Initial center beam foot-candles	Watts per sq.ft.
5'	26.2	3.55
6'	17.1	2.33
7'	12.2	1.66
8'	10.2	1.39
9'	8.1	1.11

38'x38'x10' Room, Workplane 2.5' above floor, 80/50/20% Reflectances

Coefficients of utilization

Ceiling	80%				70%		50%		30%		0%
Wall	70	50	30	10	50	10	50	10	50	10	0
RCR	Zonal cavity method - Effective floor reflectance = 20%										
0	119	119	119	119	116	116	111	111	106	106	100
1	111	107	103	100	104	98	100	95	96	92	88
2	102	96	90	85	94	84	90	82	87	80	77
3	95	86	79	74	85	73	82	72	79	71	67
4	88	78	70	65	77	64	74	63	72	62	60
5	82	71	63	57	70	57	68	56	66	56	53
6	76	65	57	51	64	51	62	51	61	50	48
7	71	59	52	46	59	46	57	46	56	45	43
8	67	55	47	42	54	42	53	42	52	41	39
9	63	51	43	38	50	38	49	38	48	38	36
10	59	47	40	35	47	35	46	35	45	35	33

Room Cavity Ratio

Zonal lumens & percentages

Zone	Lumens	%Luminaire
0-30	437	40.4%
0-40	674	62.3%
0-60	966	89.4%
0-90	1081	100.0%

CRI and CCT adjustment factors

90CRI 2700K = 84%

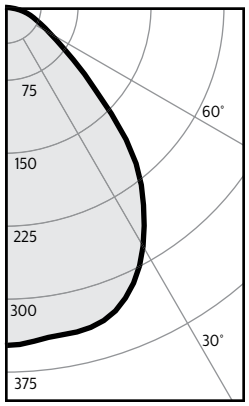
1. Tested using absolute photometry as specified in LM79: IESNA Approved Method for the Electrical and Photometric Measurements of Solid-State Lighting Products.
2. Wattage: controlled to within 5%
3. Correlated Color Temperature: within specs as defined in ANSI_NEMA_ANSLG C78.377-2008: Specifications for the Chromaticity of Solid State Lighting Products.

S5R, S7R & S10R SlimSurface LED

Round 5", 7" & 10" apertures

S5R835K7 • 10W LED, 80CRI, 3500K

Candela Curves



Angle	Mean CP	Lumens
0	347	
5	344	33
10	341	
15	340	96
20	332	
25	312	143
30	283	
35	248	155
40	209	
45	154	119
50	107	
55	74	68
60	53	
65	41	41
70	31	
75	23	25
80	15	
85	5	7
90	0	

Report[1]: 1056GFR

Output lumens:	685lms	Efficacy:	75.3lm/w
Spacing Criterion:	1.2	CCT[3]:	3500K
Beam Angle:	87°	CRI:	80min
Input Watts[2]:	9.1W		

Single unit data

Height to Lighted Plane	Initial center beam foot-candles	Beam dia. (ft)*
5'	14	6.0'
6'	10	7.2'
7'	7	8.4'
8'	5	9.6'
9'	4	10.8'

* Beam diameter is where foot-candles drop to 50% of maximum.

Multiple unit data - RCR 2

Spacing on center	Initial center beam foot-candles	Watts per sq.ft.
5'	28.6	3.34
6'	18.7	2.19
7'	13.3	1.56
8'	11.2	1.30
9'	8.9	1.04

38'x38'x10' Room, Workplane 2.5' above floor, 80/50/20% Reflectances

Coefficients of utilization

Ceiling	80%				70%		50%		30%		0%
Wall	70	50	30	10	50	10	50	10	50	10	0
RCR	Zonal cavity method - Effective floor reflectance = 20%										
0	119	119	119	119	116	116	111	111	111	106	100
1	111	107	103	100	105	98	100	95	95	92	88
2	102	96	90	85	94	84	90	82	82	80	77
3	95	86	79	73	84	73	82	72	72	70	67
4	88	78	70	64	76	64	74	63	63	62	60
5	82	71	63	57	70	57	68	56	56	56	53
6	76	64	57	51	64	51	62	50	50	50	48
7	71	59	51	46	58	46	57	45	45	45	43
8	67	54	47	42	54	41	53	41	41	41	39
9	63	50	43	38	50	38	49	38	38	37	36
10	59	47	40	35	46	35	45	34	34	34	33

Room Cavity Ratio

Zonal lumens & percentages

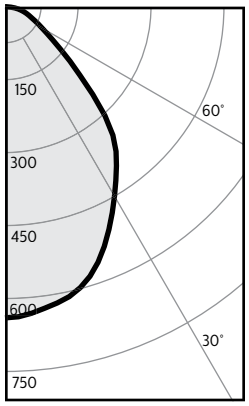
Zone	Lumens	%Luminaire
0-30	272	39.6%
0-40	426	62.2%
0-60	613	89.5%
0-90	685	100.0%

CRI and CCT adjustment factors

90CRI 2700K = 84%

S7R835K10 • 14W LED, 80CRI, 3500K

Candela Curves



Angle	Mean CP	Lumens
0	639	
5	632	60
10	618	
15	597	167
20	558	
25	505	232
30	449	
35	399	249
40	345	
45	255	197
50	174	
55	120	111
60	88	
65	67	67
70	52	
75	40	42
80	28	
85	12	13
90	0	

Report[1]: 965GFR

Output lumens:	1139lms	Efficacy:	84.4lm/w
Spacing Criterion:	1.1	CCT[3]:	3500K
Beam Angle:	83°	CRI:	80min
Input Watts[2]:	13.5W		

Single unit data

Height to Lighted Plane	Initial center beam foot-candles	Beam dia. (ft)*
5'	26	5.5'
6'	18	6.6'
7'	13	7.7'
8'	10	8.8'
9'	8	9.9'

* Beam diameter is where foot-candles drop to 50% of maximum.

Multiple unit data - RCR 2

Spacing on center	Initial center beam foot-candles	Watts per sq.ft.
5'	28.6	3.74
6'	18.7	2.45
7'	13.3	1.75
8'	11.2	1.46
9'	8.9	1.17

38'x38'x10' Room, Workplane 2.5' above floor, 80/50/20% Reflectances

Coefficients of utilization

Ceiling	80%				70%		50%		30%		0%
Wall	70	50	30	10	50	10	50	10	50	10	0
RCR	Zonal cavity method - Effective floor reflectance = 20%										
0	119	119	119	119	116	116	111	111	106	106	100
1	111	107	103	100	104	98	100	95	96	92	88
2	102	96	90	85	94	84	90	82	87	80	77
3	95	86	79	74	85	73	82	72	79	71	67
4	88	78	70	65	77	64	74	63	72	62	60
5	82	71	63	57	70	57	68	56	66	56	53
6	76	65	57	51	64	51	62	51	61	50	48
7	71	59	52	46	59	46	57	46	56	45	43
8	67	55	47	42	54	42	53	42	52	41	39
9	63	51	43	38	50	38	49	38	48	38	36
10	59	47	40	35	47	35	46	35	45	35	33

Room Cavity Ratio

Zonal lumens & percentages

Zone	Lumens	%Luminaire
0-30	459	40.3%
0-40	708	62.2%
0-60	1016	89.2%
0-90	1139	100.0%

CRI and CCT adjustment factors

90CRI 2700K = 84%

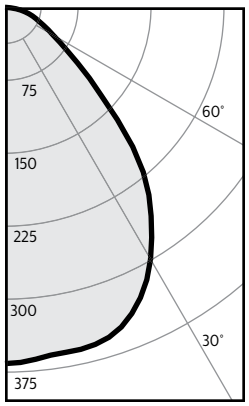
1. Tested using absolute photometry as specified in LM79: IESNA Approved Method for the Electrical and Photometric Measurements of Solid-State Lighting Products.
2. Wattage: controlled to within 5%
3. Correlated Color Temperature: within specs as defined in ANSI_NEMA_ANSLG C78.377-2008: Specifications for the Chromaticity of Solid State Lighting Products.

S5R, S7R & S10R SlimSurface LED

Round 5", 7" & 10" apertures

S5R840K7 • 10W LED, 80CRI, 4000K

Candela Curves



Angle	Mean CP	Lumens
0	366	
5	363	35
10	360	
15	359	101
20	350	
25	329	151
30	299	
35	262	163
40	221	
45	163	126
50	113	
55	79	72
60	57	
65	44	44
70	34	
75	25	27
80	16	
85	6	7
90	0	

Report[1]: 1057GFR

Output lumens:	726lms	Efficacy:	79.8lm/w
Spacing Criterion:	1.2	CCT[3]:	4000K
Beam Angle:	87°	CRI:	80min
Input Watts[2]:	9.1W		

Single unit data

Height to Lighted Plane	Initial center beam foot-candles	Beam dia. (ft)*
5'	15	6.0'
6'	10	7.2'
7'	7	8.4'
8'	6	9.6'
9'	5	10.8'

* Beam diameter is where foot-candles drop to 50% of maximum.

Multiple unit data - RCR 2

Spacing on center	Initial center beam foot-candles	Watts per sq.ft.
5'	30.3	3.54
6'	19.8	2.32
7'	14.1	1.66
8'	11.8	1.38
9'	9.4	1.10

38'x38'x10' Room, Workplane 2.5' above floor, 80/50/20% Reflectances

Coefficients of utilization

Ceiling	80%				70%		50%		30%		0%
Wall	70	50	30	10	50	10	50	10	50	10	0
RCR	Zonal cavity method - Effective floor reflectance = 20%										
0	119	119	119	119	116	116	111	111	106	106	100
1	111	107	103	100	105	98	100	95	97	92	88
2	102	96	90	85	94	84	90	82	87	80	77
3	95	86	79	73	84	73	82	72	79	70	67
4	88	78	70	64	76	64	74	63	72	62	60
5	82	71	63	57	70	57	68	56	66	56	53
6	76	64	57	51	64	51	62	50	60	50	48
7	71	59	51	46	58	46	57	45	56	45	43
8	67	54	47	42	54	41	53	41	51	41	39
9	63	50	43	38	50	38	49	38	48	37	36
10	59	47	40	35	46	35	45	34	44	34	33

Room Cavity Ratio

Zonal lumens & percentages

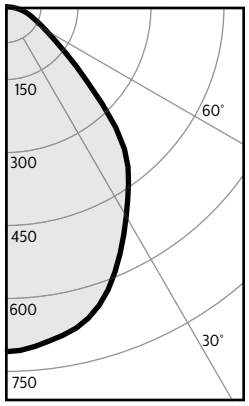
Zone	Lumens	%Luminaire
0-30	286	39.5%
0-40	450	62.0%
0-60	648	89.3%
0-90	726	100.0%

CRI and CCT adjustment factors

90CRI 2700K = 84%

S7R840K10 • 14W LED, 90CRI, 2700K

Candela Curves



Angle	Mean CP	Lumens
0	710	
5	702	66
10	686	
15	663	186
20	620	
25	560	258
30	499	
35	443	276
40	382	
45	283	218
50	193	
55	133	122
60	97	
65	74	74
70	57	
75	44	46
80	30	
85	14	15
90	0	

Report[1]: 963GFR

Output lumens:	1262lms	Efficacy:	94.2lm/w
Spacing Criterion:	1.1	CCT[3]:	4000K
Beam Angle:	83°	CRI:	80min
Input Watts[2]:	13.4W		

Single unit data

Height to Lighted Plane	Initial center beam foot-candles	Beam dia. (ft)*
5'	28	5.5'
6'	20	6.6'
7'	14	7.7'
8'	11	8.8'
9'	9	9.9'

* Beam diameter is where foot-candles drop to 50% of maximum.

Multiple unit data - RCR 2

Spacing on center	Initial center beam foot-candles	Watts per sq.ft.
5'	30.3	4.17
6'	19.8	2.74
7'	14.1	1.96
8'	11.8	1.63
9'	9.4	1.30

38'x38'x10' Room, Workplane 2.5' above floor, 80/50/20% Reflectances

Coefficients of utilization

Ceiling	80%				70%		50%		30%		0%
Wall	70	50	30	10	50	10	50	10	50	10	0
RCR	Zonal cavity method - Effective floor reflectance = 20%										
0	119	119	119	119	116	116	111	111	106	106	100
1	111	107	103	100	104	98	100	95	96	92	88
2	102	96	90	85	94	84	90	82	87	80	77
3	95	86	79	74	85	73	82	72	79	71	67
4	88	78	70	65	77	64	74	63	72	62	60
5	82	71	63	57	70	57	68	56	66	56	53
6	76	65	57	51	64	51	62	51	61	50	48
7	71	59	52	46	59	46	57	46	56	45	43
8	67	55	47	42	54	42	53	42	52	41	39
9	63	51	43	38	50	38	49	38	48	38	36
10	59	47	40	35	47	35	46	35	45	35	33

Room Cavity Ratio

Zonal lumens & percentages

Zone	Lumens	%Luminaire
0-30	510	40.4%
0-40	786	62.3%
0-60	1127	89.3%
0-90	1262	100.0%

CRI and CCT adjustment factors

90CRI 2700K = 84%

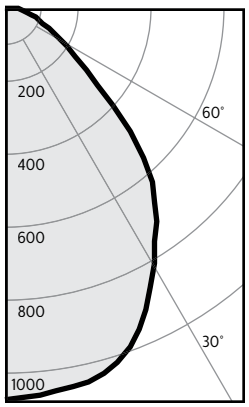
1. Tested using absolute photometry as specified in LM79: IESNA Approved Method for the Electrical and Photometric Measurements of Solid-State Lighting Products.
2. Wattage: controlled to within 5%
3. Correlated Color Temperature: within specs as defined in ANSI_NEMA_ANSLG C78.377-2008: Specifications for the Chromaticity of Solid State Lighting Products.

S5R, S7R & S10R SlimSurface LED

Round 5", 7" & 10" apertures

S10R830K22 • 24W LED, 80CRI, 3000K

Candela Curves



Angle	Mean CP	Lumens
0	1027	
5	1017	97
10	1008	
15	992	279
20	947	
25	871	399
30	776	
35	685	429
40	597	
45	459	351
50	313	
55	223	204
60	161	
65	122	122
70	93	
75	70	74
80	46	
85	20	23
90	0	

Report[1]: S10R927K22BK

Output lumens:	1977lms	Efficacy:	84.1lm/w
Spacing Criterion:	1.1	CCT[3]:	3000K
Beam Angle:	87°	CRI:	80min
Input Watts[2]:	23.5W		

Single unit data

Height to Lighted Plane	Initial center beam foot-candles	Beam dia. (ft)*
5'	41	5.5'
6'	29	6.6'
7'	21	7.7'
8'	16	8.8'
9'	13	9.9'

* Beam diameter is where foot-candles drop to 50% of maximum.

Multiple unit data - RCR 2

Spacing on center	Initial center beam foot-candles	Watts per sq.ft.
5'	83.4	1.04
6'	54.8	0.68
7'	39.1	0.49
8'	32.6	0.41
9'	26.1	0.33

38'x38'x10' Room, Workplane 2.5' above floor, 80/50/20% Reflectances

Coefficients of utilization

Ceiling	80%				70%		50%		30%		0%
Wall	70	50	30	10	50	10	50	10	50	10	0
RCR	Zonal cavity method - Effective floor reflectance = 20%										
0	119	119	119	119	116	116	111	111	106	106	100
1	111	107	103	100	104	98	100	95	96	92	88
2	102	95	90	85	93	84	90	82	87	80	76
3	95	86	79	73	84	72	81	71	79	70	67
4	88	77	70	64	76	63	74	63	71	62	59
5	82	70	62	56	69	56	67	56	65	55	53
6	76	64	56	50	63	50	61	50	60	49	47
7	71	59	51	45	58	45	57	45	55	45	43
8	66	54	46	41	53	41	52	41	51	41	39
9	62	50	43	37	49	37	48	37	47	37	35
10	59	47	39	34	46	34	45	34	44	34	32

Room Cavity Ratio

Zonal lumens & percentages

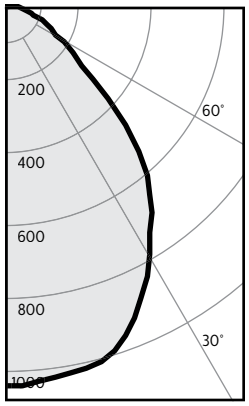
Zone	Lumens	%Luminaire
0-30	775	39.2%
0-40	1203	60.9%
0-60	1758	88.9%
0-90	1977	100.0%

CRI and CCT adjustment factors

90CRI 2700K = 84%

S10R835K22 • 24W LED, 80CRI, 3500K

Candela Curves



Angle	Mean CP	Lumens
0	1000	
5	990	94
10	981	
15	966	271
20	922	
25	847	388
30	754	
35	664	416
40	579	
45	442	339
50	300	
55	212	195
60	153	
65	117	117
70	89	
75	67	71
80	44	
85	20	22
90	0	

Report[1]: 963GFR

Output lumens:	1913lms	Efficacy:	80.0lm/w
Spacing Criterion:	1.1	CCT[3]:	3500K
Beam Angle:	87°	CRI:	80min
Input Watts[2]:	23.9W		

Single unit data

Height to Lighted Plane	Initial center beam foot-candles	Beam dia. (ft)*
5'	40	5.5'
6'	28	6.6'
7'	20	7.7'
8'	16	8.8'
9'	12	9.9'

* Beam diameter is where foot-candles drop to 50% of maximum.

Multiple unit data - RCR 2

Spacing on center	Initial center beam foot-candles	Watts per sq.ft.
5'	80.8	1.06
6'	53.0	0.70
7'	37.9	0.50
8'	31.6	0.41
9'	25.2	0.33

38'x38'x10' Room, Workplane 2.5' above floor, 80/50/20% Reflectances

Coefficients of utilization

Ceiling	80%				70%		50%		30%		0%
Wall	70	50	30	10	50	10	50	10	50	10	0
RCR	Zonal cavity method - Effective floor reflectance = 20%										
0	119	119	119	119	116	116	111	111	106	106	100
1	111	107	103	100	104	98	100	95	96	92	88
2	102	95	90	85	94	84	90	82	87	80	76
3	95	86	79	73	84	72	81	71	79	70	67
4	88	77	70	64	76	64	74	63	72	62	59
5	82	70	62	57	69	56	67	56	65	55	53
6	76	64	56	51	63	50	62	50	60	50	47
7	71	59	51	45	58	45	57	45	55	45	43
8	67	54	47	41	54	41	52	41	51	41	39
9	62	50	43	38	50	38	49	37	48	37	35
10	59	47	39	35	46	34	45	34	44	34	32

Room Cavity Ratio

Zonal lumens & percentages

Zone	Lumens	%Luminaire
0-30	754	39.4%
0-40	1170	61.2%
0-60	1703	89.0%
0-90	1913	100.0%

CRI and CCT adjustment factors

90CRI 2700K = 84%

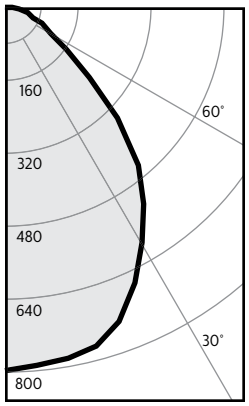
1. Tested using absolute photometry as specified in LM79: IESNA Approved Method for the Electrical and Photometric Measurements of Solid-State Lighting Products.
2. Wattage: controlled to within 5%
3. Correlated Color Temperature: within specs as defined in ANSI_NEMA_ANSLG C78.377-2008: Specifications for the Chromaticity of Solid State Lighting Products.

S5R, S7R & S10R SlimSurface LED

Round 5", 7" & 10" apertures

S10R927K22 • 23W LED, 90CRI, 2700K

Candela Curves



Angle	Mean CP	Lumens
0	794	
5	788	75
10	781	
15	769	216
20	732	
25	669	307
30	595	
35	525	328
40	453	
45	344	265
50	238	
55	162	149
60	116	
65	87	87
70	66	
75	49	52
80	32	
85	13	15
90	0	

Report[1]: S10R927K22BK

Output lumens:	1493lms	Efficacy:	65.5lm/w
Spacing Criterion:	1.1	CCT[3]:	2700K
Beam Angle:	86°	CRI:	90min
Input Watts[2]:	22.8W		

Single unit data

Height to Lighted Plane	Initial center beam foot-candles	Beam dia. (ft)*
5'	32	5.5'
6'	22	6.6'
7'	16	7.7'
8'	12	8.8'
9'	10	9.9'

* Beam diameter is where foot-candles drop to 50% of maximum.

Multiple unit data - RCR 2

Spacing on center	Initial center beam foot-candles	Watts per sq.ft.
5'	63.3	1.01
6'	41.5	0.66
7'	29.7	0.47
8'	24.7	0.39
9'	19.8	0.32

38'x38'x10' Room, Workplane 2.5' above floor, 80/50/20% Reflectances

Coefficients of utilization

Ceiling	80%				70%		50%		30%		0%
Wall	70	50	30	10	50	10	50	10	50	10	0
RCR	Zonal cavity method - Effective floor reflectance = 20%										
0	119	119	119	119	116	116	111	111	106	106	100
1	111	107	103	100	105	98	100	95	97	93	88
2	103	96	90	85	94	84	90	82	87	80	77
3	95	86	79	74	85	73	82	72	79	70	67
4	88	78	70	64	77	64	74	63	72	62	60
5	82	71	63	57	70	57	68	56	66	56	53
6	76	65	57	51	64	51	62	50	60	50	48
7	71	59	51	46	58	46	57	45	56	45	43
8	67	55	47	42	54	42	53	41	52	41	39
9	63	51	43	38	50	38	49	38	48	38	36
10	59	47	40	35	46	35	46	35	45	35	33

Room Cavity Ratio

Zonal lumens & percentages

Zone	Lumens	%Luminaire
0-30	598	40.0%
0-40	925	62.0%
0-60	1339	89.7%
0-90	1493	100.0%

CRI and CCT adjustment factors

90CRI 2700K = 84%

1. Tested using absolute photometry as specified in LM79: IESNA Approved Method for the Electrical and Photometric Measurements of Solid-State Lighting Products.
2. Wattage: controlled to within 5%
3. Correlated Color Temperature: within specs as defined in ANSI_NEMA_ANSLG C78.377-2008: Specifications for the Chromaticity of Solid State Lighting Products.

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