

High Power LEDs

EdiLine III Series Datasheet

The linear structure of EdiLine III Series results in an easier heat dissipation requirement, making versatile fixtures design possible as well as an overall cost saving benefit. The special twin connectors design allows EdiLine to be assembled easily with screws in either serial order as a linear light source or parallel order as a planar light source.

Features :

- Linear Packaging Design
- High Efficiency
- Low Power Consumption
- Long Operating Lifespan
- Easy Installation with Screws

Typical Applications :

- General lighting
- Contour lights
- Ceiling lights
- Decoration lights
- Architectural lighting

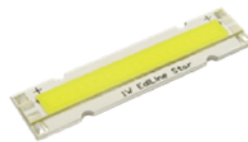


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Lighting Design Manufacturing Service

Product Nomenclature

The following table describes the available color, power, and lens type. For more information on luminous flux and color, please refer to the Bin Group document.

Table 1. EdiLine III series nomenclature

E

N

C

W

-

3

S

B

0

-

B

0

0

X1

X2

X3

X4

X5

X6

X7

X8

X9

X1		X2		X3		X4		X5		X6		X7~X9	
LED Item		Module		Emitting Color		Power		Serial No.		Circuit Type		Serial No.	
Code	Type	Code	Type	Code	Type	Code	Type			Code	Type		
EL	EdLine	B	Type III-1	W	Cool White	1	1W			B	18 Parallel with 3 Serial		
		C	Type III-2	H	Neutral White	2	2W			C	18 Parallel with 1 Serial		
				X	Warm White	3	3W (Type III-1)						
				B	Blue	3	3.5W (Type III-2)						

Product Dimensions

ELCx-3SB0

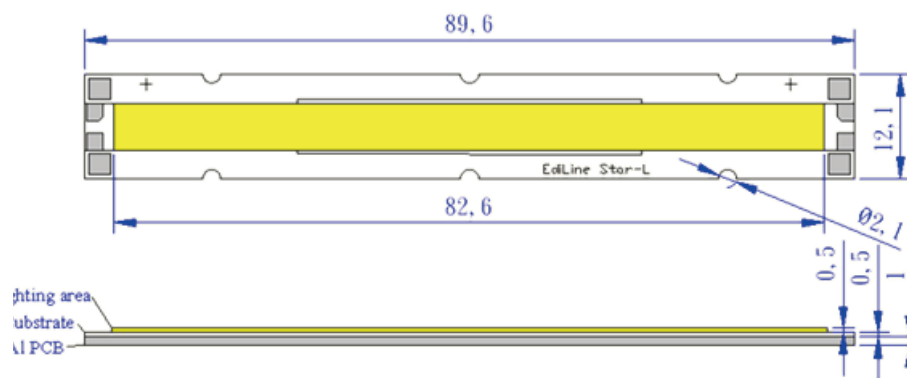


Figure 1. ELCx-3SB0 product dimensions

ELBx-1SC0

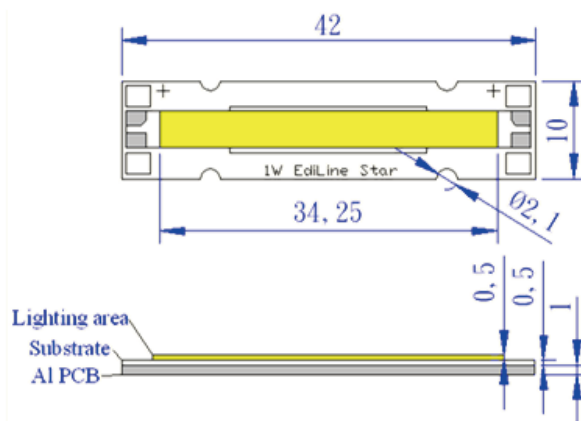


Figure 2. ELBx-1SC0 product dimensions

ELBx-2SC0

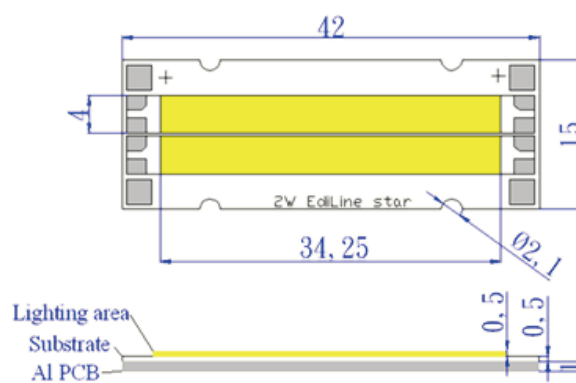


Figure 3. ELBx-2SC0 product dimensions

ELBx-3SC0

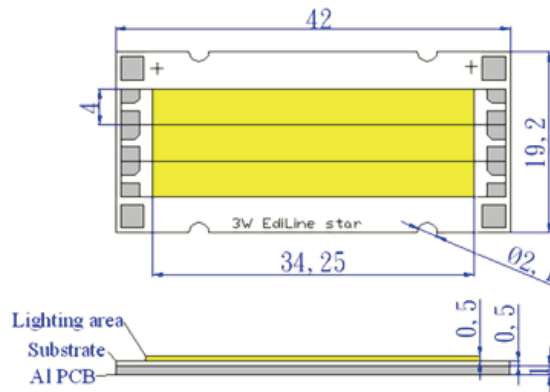


Figure 4. ELBx-3SC0 product dimensions

Notes:

1. All dimensions are in mm.
2. Al Substrate thickness is 1 mm
3. Drawings are not to scale.
4. It is strongly recommended that the temperature of Ts be not higher than 55°C.
(Ts: Substrate Temperature, refer to Substrate Temperature Measurement Point at page 8)
5. General tolerance is 0.2mm.
6. The pads on the emitter to distinguish Positive and Negative are as below:

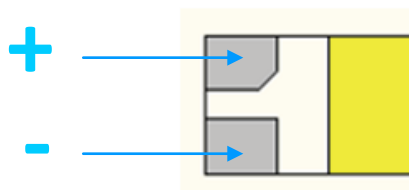


Figure 5. The Positive and Negative of the pads on the emitter

Absolute Maximum Ratings

Table 2. EdiLine III absolute maximum ratings

Parameter	Symbol	Rating	Units
Transient Surge Voltage	V_{TS}	12	V
DC Forward Current ELBx-1SC0 ELCx-3SB0	I_F	350 350	mA
LED Junction Temperature	T_J	80	°C
Operating Temperature	T_{opr}	-40 ~ +50	°C
Storage Temperature	T_{stg}	-40 ~ +120	°C
Allowable Reflow Cycles	N/A	3	cycles

Luminous Flux Characteristics ($T_J=25^{\circ}\text{C}$)

Table 3. EdiLine III Luminous Flux Characteristics ($T_J=25^{\circ}\text{C}$)

Part Name	Color	Test Current	Flux Typ.	Units
ELCW-3SB0	Cool White	350mA	330	lm
ELCH-3SB0	Neutral White	350mA	265	lm
ELCX-3SB0	Warm White	350mA	230	lm
ELBW-1SC0	Cool White	350mA	100	lm
ELBH-1SC0	Neutral White	350mA	80	lm
ELBX-1SC0	Warm White	350mA	70	lm
ELBW-2SC0	Cool White	700mA	200	lm
ELBH-2SC0	Neutral White	700mA	160	lm
ELBX-2SC0	Warm White	700mA	140	lm
ELBW-3SC0	Cool White	1050mA	300	lm
ELBH-3SC0	Neutral White	1050mA	240	lm
ELBX-3SC0	Warm White	1050mA	210	lm
ELBB-1SC0	Blue	350mA	12	lm

Forward Voltage Characteristic ($T_j=25^{\circ}\text{C}$)

Table 4. EdiLine III Forward Voltage Characteristics ($T_j=25^{\circ}\text{C}$)

Part Name	Color	Test Current	V_F Typ.	Units
ELCW-3SB0	Cool White	350mA	10.2	V
ELCH-3SB0	Neutral White	350mA	10.2	V
ELCX-3SB0	Warm White	350mA	10.2	V
ELBW-1SC0	Cool White	350mA	3.4	V
ELBH-1SC0	Neutral White	350mA	3.4	V
ELBX-1SC0	Warm White	350mA	3.4	V
ELBW-2SC0	Cool White	700mA	3.4	V
ELBH-2SC0	Neutral White	700mA	3.4	V
ELBX-2SC0	Warm White	700mA	3.4	V
ELBW-3SC0	Cool White	1050mA	3.4	V
ELBH-3SC0	Neutral White	1050mA	3.4	V
ELBX-3SC0	Warm White	1050mA	3.4	V
ELBB-1SC0	Blue	350mA	3.4	V

Dominant Wavelength or Color Temperature Characteristic ($T_j=25^{\circ}\text{C}$)

Table 5. EdiLine III Dominant Wavelength or Color Temperature Characteristics ($T_j=25^{\circ}\text{C}$)

Part Name	Color	Test Current	λ_d/CCT		Units
			Min.	Max.	
ELCW-3SB0	Cool White	350mA	5,000	10,000	K
ELCH-3SB0	Neutral White	350mA	3,800	5,000	K
ELCX-3SB0	Warm White	350mA	2,670	3,800	K
ELBW-1SC0	Cool White	350mA	5,000	10,000	K
ELBH-1SC0	Neutral White	350mA	3,800	5,000	K
ELBX-1SC0	Warm White	350mA	2,670	3,800	K
ELBW-2SC0	Cool White	700mA	5,000	10,000	K
ELBH-2SC0	Neutral White	700mA	3,800	5,000	K
ELBX-2SC0	Warm White	700mA	2,670	3,800	K
ELBW-3SC0	Cool White	1050mA	5,000	10,000	K
ELBH-3SC0	Neutral White	1050mA	3,800	5,000	K
ELBX-3SC0	Warm White	1050mA	2,670	3,800	K
ELBB-1SC0	Blue	350mA	456.5		nm

Emission Angle Characteristic ($T_j=25^{\circ}\text{C}$)

Table 6. EdiLine III Emission Angle Characteristics ($T_j=25^{\circ}\text{C}$)

Part Name	Color	Test Current	$2\theta_{1/2}(\text{Typ.})$ X direction	$2\theta_{1/2}(\text{Typ.})$ Y direction	Units
ELCW-3SB0	Cool White	350mA	120	140	Degrees
ELCH-3SB0	Neutral White	350mA	120	140	Degrees
ELCX-3SB0	Warm White	350mA	120	140	Degrees
ELBW-1SC0	Cool White	350mA	120	140	Degrees
ELBH-1SC0	Neutral White	350mA	120	140	Degrees
ELBX-1SC0	Warm White	350mA	120	140	Degrees
ELBW-2SC0	Cool White	700mA	120	140	Degrees
ELBH-2SC0	Neutral White	700mA	120	140	Degrees
ELBX-2SC0	Warm White	700mA	120	140	Degrees
ELBW-3SC0	Cool White	1050mA	120	140	Degrees
ELBH-3SC0	Neutral White	1050mA	120	140	Degrees
ELBX-3SC0	Warm White	1050mA	120	140	Degrees
ELBB-1SC0	Blue	350mA	120	140	Degrees

Thermal Resistance – Junction to Thermal Pad

Table 7. EdiLine III Thermal Resistance – Junction to Thermal Pad

Part Name	Thermal Resistance from Junction to Thermal Pad	Units
ELBx-1SB0	20	$^{\circ}\text{C/W}$
ELBx-2SB0	10	$^{\circ}\text{C/W}$
ELCx-3SB0	6	$^{\circ}\text{C/W}$
ELBx-3SC0	5	$^{\circ}\text{C/W}$

Typical Radiation Pattern

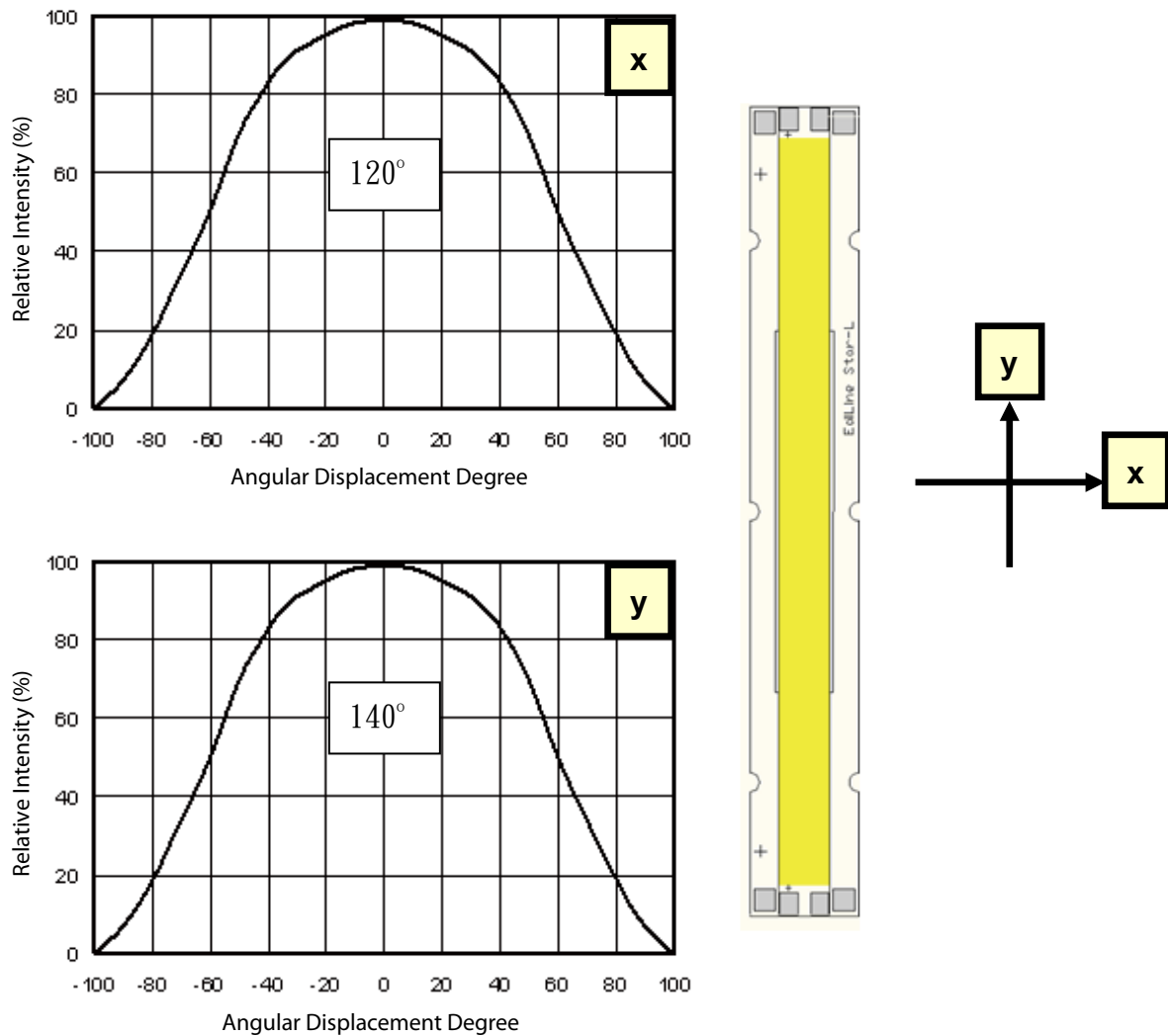


Figure 6. Typical Radiation Pattern

Notes:

1. Flux is measured with an accuracy of $\pm 10\%$.
2. CCT selection acc. to CCT groups and an accuracy of $\pm 300K$
3. Forward Voltage is measured with an accuracy of $\pm 0.2V$
4. Wavelength is measured with an accuracy of $\pm 1nm$
5. Cool White, Neutral White, Warm White emitters are built with InGaN

Operating life, mechanical, and environmental tests performed on EdiLine III package:

Table 8. Operating life, mechanical, and environmental tests performed on EdiLine II

Stress Test	Stress Conditions	Stress Duration	Failure Criteria
Room Temperature Operating Life	25°C, $I_F = \text{max DC}$ (Note 1)	1,000 hours	Note 2
High Temperature High Humidity	85°C / 85%RH	1,000 hours	Note 2
Thermal Shock	-40°C / 120°C, 20 min dwell <10 sec transfer	600 cycles	No catastrophic
Low Temperature Storage Life	-40°C	1,000 hours	Note 2

Notes:

Failure Criteria:

Electrical failures

VF shift $\geq 10\%$

Light Output Degradation

% I_v shift $\geq 30\%$ @1,000hrs

Visual failures

Broken or damaged package

Dimension out of tolerance

Substrate Temperature Measurement Point

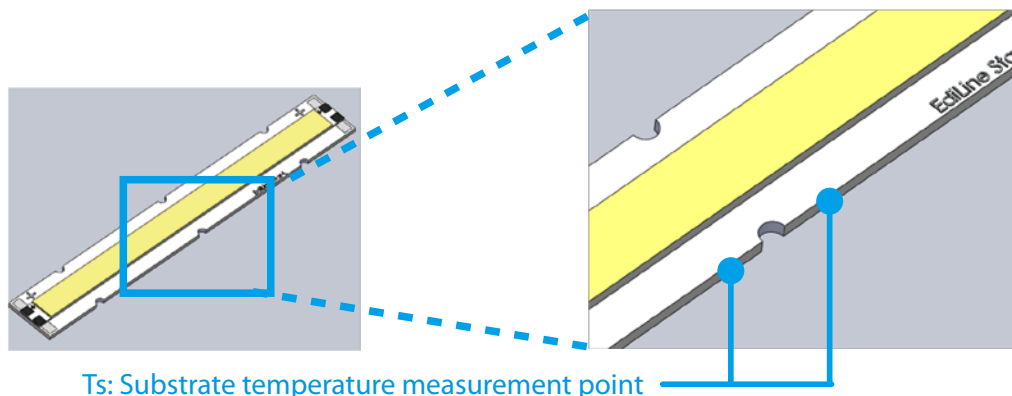


Figure 7. Substrate Temperature Measurement Point

Notes:

1. It strongly recommend to check the temperature of Ts be below 55°C while thermal design.
2. For thermal design advice, please refer to EdiLine III series Lighting Application Guide.

Optical Curves-Spectrum

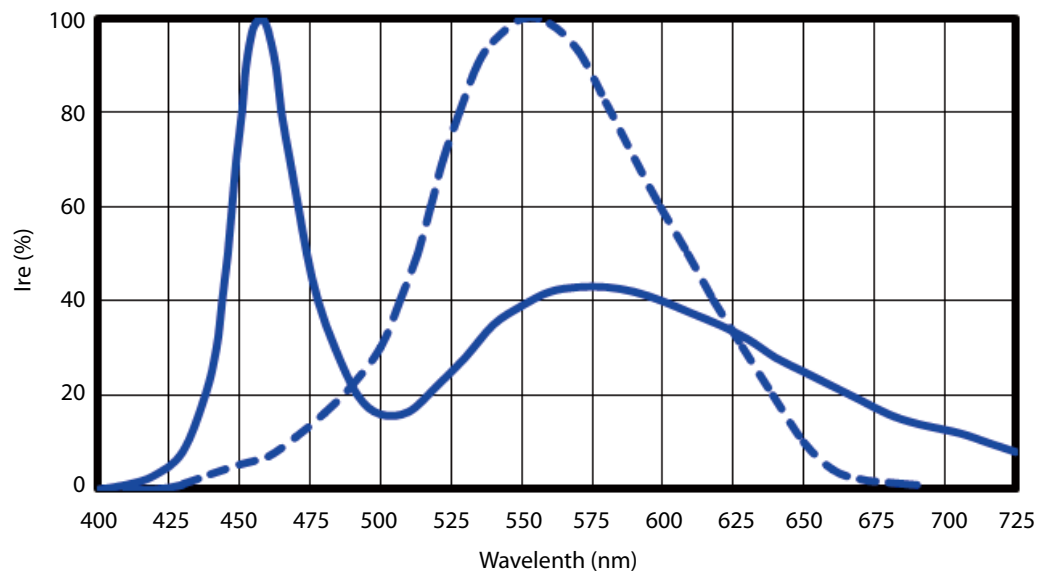


Figure 8. White color spectrum of typical CCT, standard eyes response to dotted curve line and CRI $\approx$ 70 at $T_j=25^\circ\text{C}$.

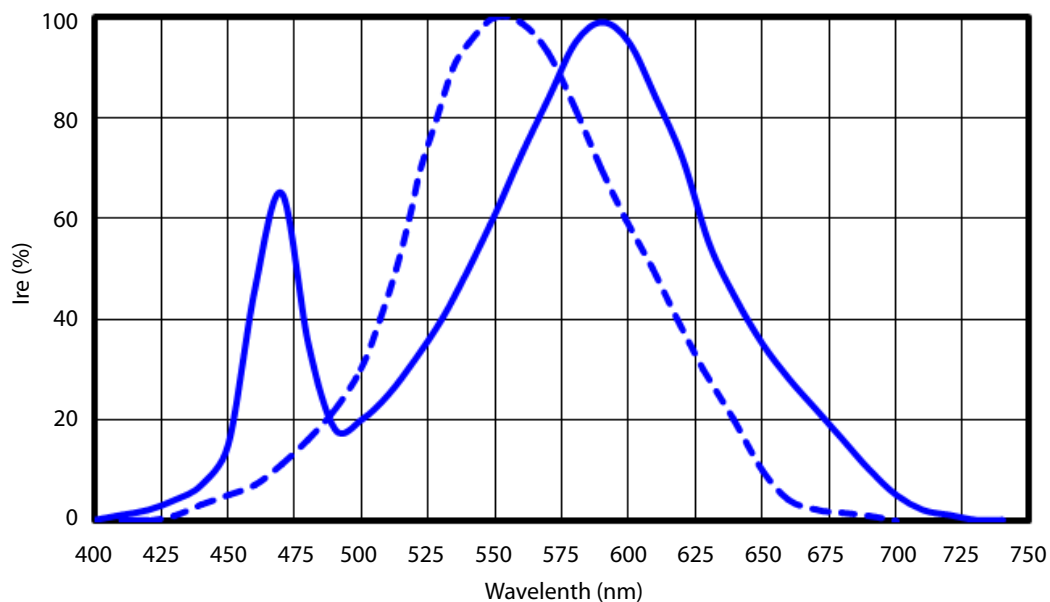


Figure 9. Warm white color spectrum of typical CCT, standard eyes response to dotted curve line and CRI $\approx$ 80 at $T_j=25^\circ\text{C}$.

Product Packaging Information

EdiLine III ELCx-3SB0 and ELBx-1SC0 packaging data:

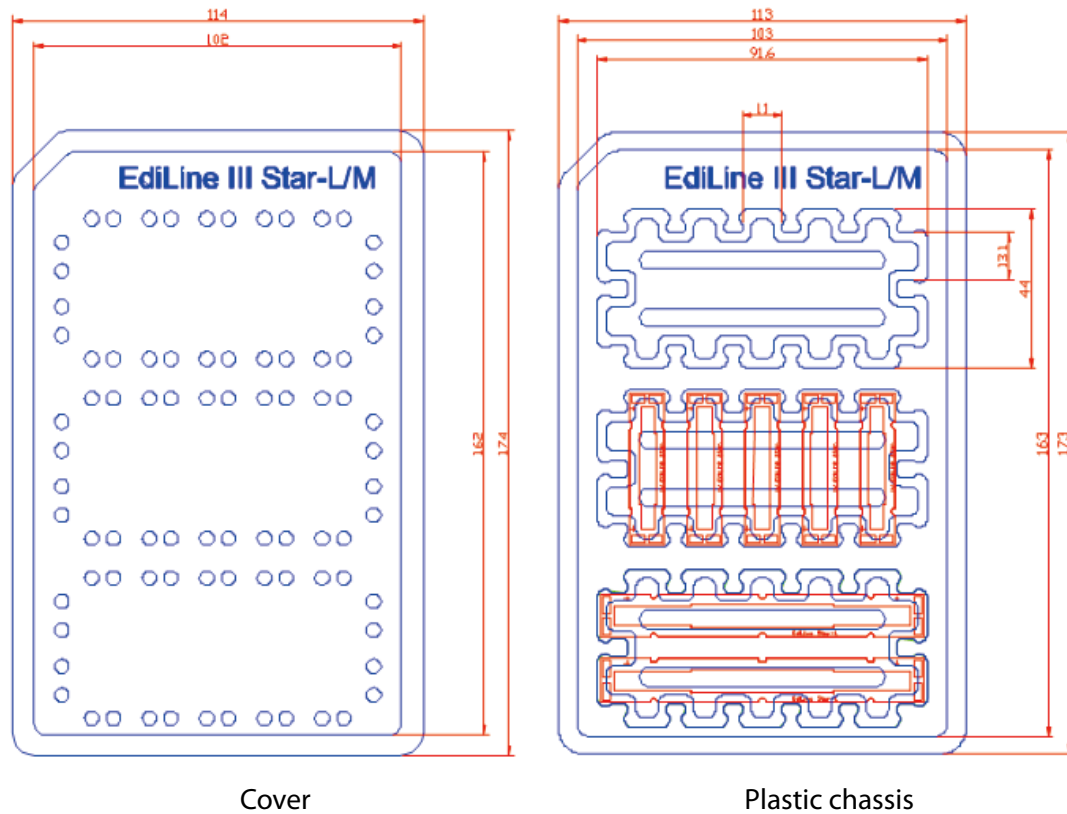


Figure 10. EdiLine III ELCx-3SB0 and ELBx-1SC0 packaging data

Notes:

1. All dimensions are in mm.
2. There are 6pcs ELBx-3SB0 in a tray.
3. There are 15pcs ELBx-1SC0 in a tray.

EdiLine III ELBx-2SC0 and ELBx-3SC0 packaging data:

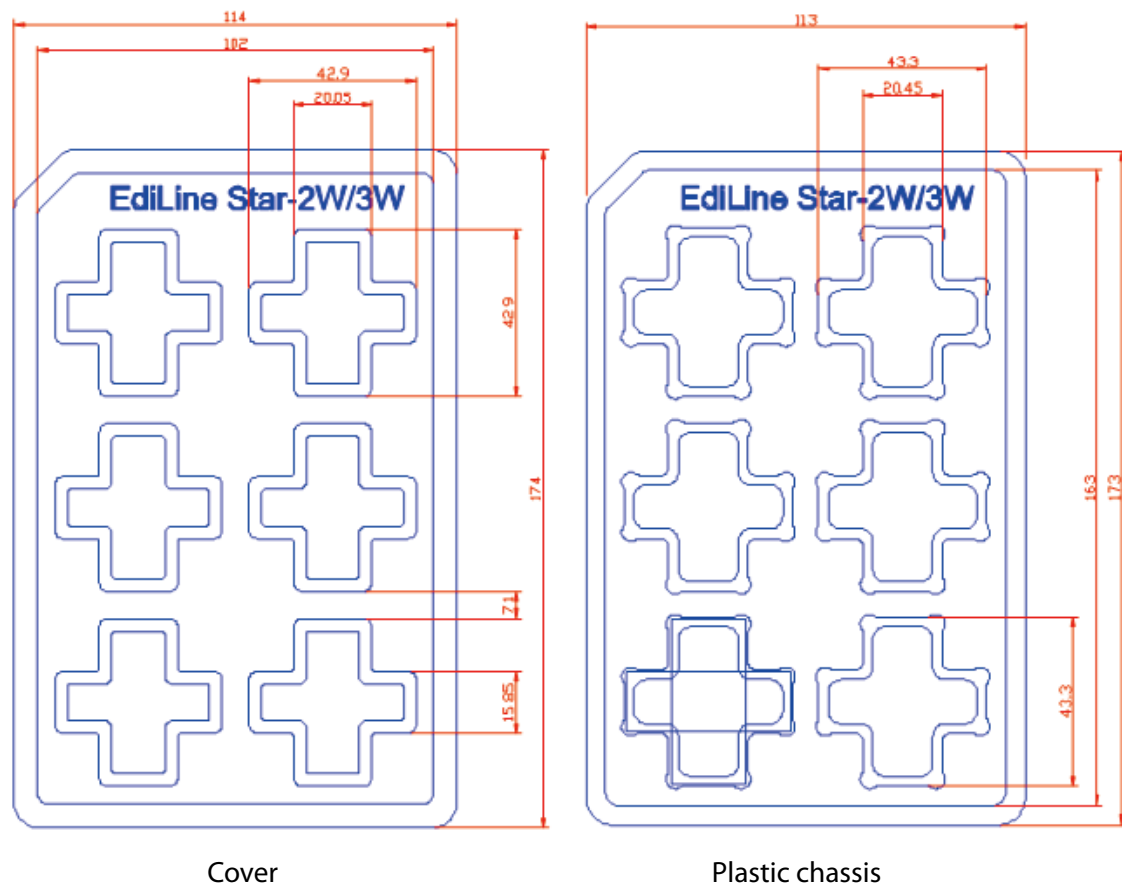


Figure 11. EdiLine III ELBx-2SC0 and ELBx-3SC0 packaging data

Notes:

1. All dimensions are in mm.
2. There are 6pcs ELBx-2SC0 in a tray.
3. There are 6pcs ELBx-3SC0 in a tray.