



# PRODUCT DESCRIPTION

eyrise<sup>®</sup> s350 INSTANT SOLAR SHADING GLASS



## CONTENTS

<b>Introduction .....</b>	<b>3</b>
Principle	3
eyrise® & sustainability	3
<b>eyrise® s350 IGU Description .....</b>	<b>4</b>
Standard Technical Specifications - eyrise® s350	5
Optical Performance	6
Acoustic Performance	6
Pigtail	7
Glass Marking	7
Edge Details	8
Physical Tolerances	9
IGU Thickness and weight	9
Visual Quality Criteria	10
<b>eyrise® s350 Control System.....</b>	<b>11</b>
Option 1 - control using KNX Interface	12
Option 2 - Analog control	13
<b>Components .....</b>	<b>15</b>
eyrise® driver cable	15
eyrise® driver	15
eyrise® KNX COM Module	15
eyrise® BUS cable	16
Power Supply	16
Building Management System (BMS)	16
Control System Accessories	16
KNX wiring	16
Analog Control Signal Cable	16
<b>Conformity.....</b>	<b>17</b>
<b>Warranty .....</b>	<b>17</b>
<b>Appendix .....</b>	<b>i</b>

## INTRODUCTION

eyrise® s350 instant solar shading glass is a façade glazing solution that uses the innovative technology of dynamic liquid crystals – licrivation®. With eyrise® instant solar glass, you can easily regulate the daylight transmitted into the building's interior to protect the occupants from solar heat and glare. eyrise® s350 glazing is a key offering towards achieving building sustainability.

The features of eyrise® s350 instant solar glass are:

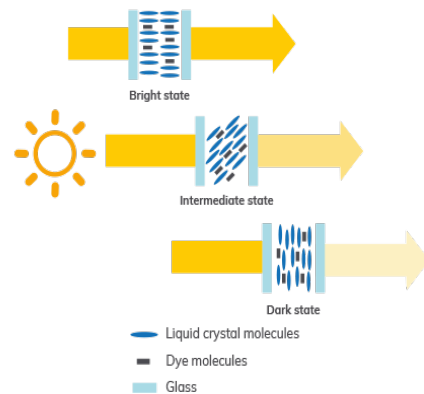
- Switching speeds of less than one second
- Fully functional shading with no additional mechanical parts and hence minimal maintenance
- Benefits of occupant wellness coupled with high-operating energy efficiency
- Frame compatibility with movable or fixed windows, roofs and other façade systems
- Easy integration with existing automated Building Management Systems (BMS) or manual control schemes

## PRINCIPLE

eyrise® s350 instant solar glass consists of Liquid Crystal (LC) molecules embedded between two glass sheets having a coating of transparent conductive oxide. Liquid Crystals form the core of dynamic solar shading in eyrise® s350 instant solar glass.

A low voltage changes the orientation of liquid crystal molecules and hence it's light and heat transmittance. The orientation of the liquid crystal molecules determine the tint of solar glass.

eyrise® s350 instant solar glass contains licrivation® - a transparent LC mixture with dye molecules. eyrise® s350 instant solar glass offers neutral colour tones for your dynamic solar shading façade with inherent instant transition and intermediate shading capability.



### LICRIVISION® TECHNOLOGY

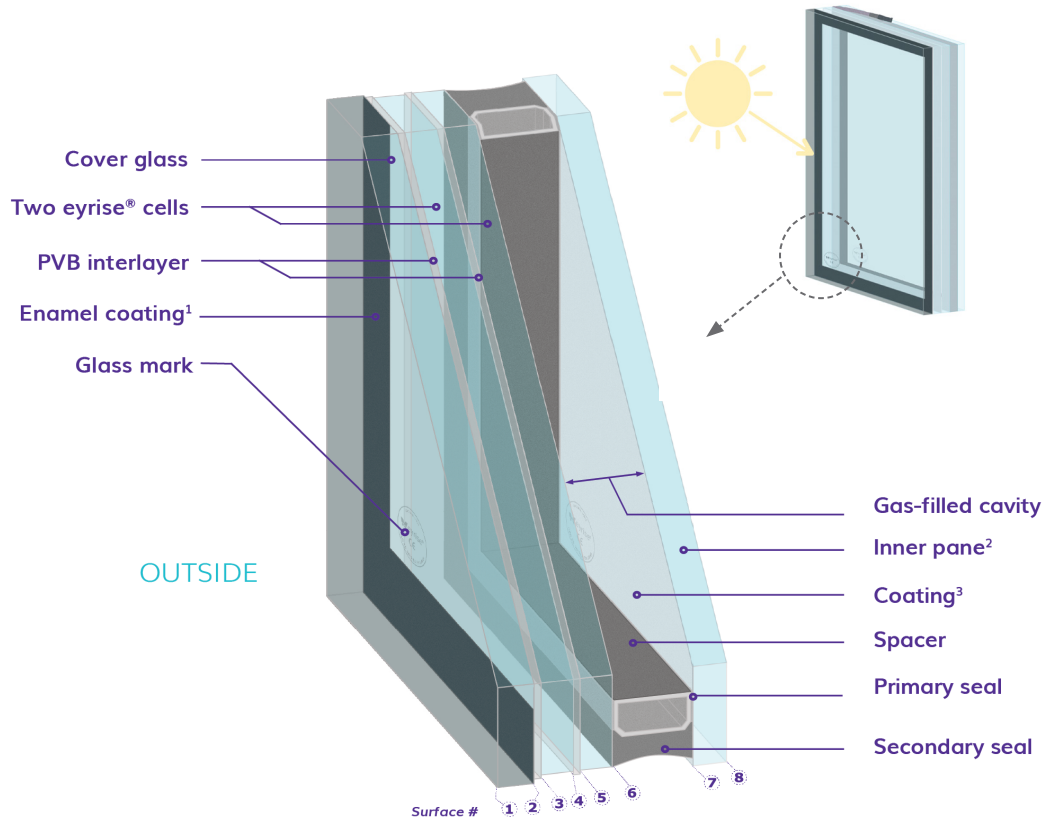
*Transmission changes with the orientation of LC molecules*

## eyrise® & SUSTAINABILITY

eyrise® s350 instant solar glass is a key contributor to achieve sustainability goals and hence minimize environmental footprint. eyrise® contributes to each dimension of the Green Building Certifications (GBC). Moreover, eyrise® s350 instant solar glass can seamlessly integrate with both traditional and modern architecture designs. Our flexible design possibilities make eyrise® a suitable choice for both new and refurbished façade systems to resolve sustainability goals.

## eyrise® s350 IGU DESCRIPTION

eyrise® s350 instant solar glass is a laminated Insulating Glass Unit (IGU) containing liquid crystals (LC) for the dynamic shading functionality. The assembly of LC molecules embedded between two glass sheets forms an eyrise® cell and is an integral part of the eyrise® IGU. An eyrise® IGU consists of two eyrise® cells and can be either double or triple glazed.



<sup>1</sup> On surface#2. Please enquire for enamel coating possibilities on surface#1

<sup>2</sup> Monolithic or Laminated: multiple options available

<sup>3</sup> High performance Low-E coating on surface#7 for reduced solar heat gain

### eyrise® s350 DOUBLE GLAZED UNIT BUILD-UP

*eyrise® cells form the integral unit of an eyrise® IGU*

A typical double-glazed unit consists of a laminated inner pane and a laminated outer pane separated by a cavity. The outer pane is a laminate of heat-strengthened cover glass and two identical eyrise® cells. The eyrise® cells constitute the core of dynamic tinting in an eyrise® IGU.

The inner pane's surface facing the cavity has a coating for improved performance. Using customized selection of liquid crystal mixtures and coatings, it is possible to achieve the desired solar heat gain ratios. The laminated inner and outer panes of the IGU use polyvinyl butyral (PVB) interlayers for durability and versatility.

The cavity of an eyrise® IGU is filled with an inert gas - Argon. The IGU cavity is kept air-tight and water-tight with a spacer and a primary seal. A secondary sealant provides structural strength to the IGU.

## STANDARD TECHNICAL SPECIFICATIONS - eyrise® s350

<b>IGU TYPE</b>	Double or Triple glazed			
<b>IGU SIZE*</b>	Minimum	409 mm x 409 mm		
	Maximum	3504 mm x 1604 mm		
<b>OUTER LAMINATE</b>	Cover glass	Type	Heat-strengthened low iron glass	
		Thickness	4 - 10 mm	
	Enamel	Width	26 mm ± 2 mm from the edge	
		Colour	Black ( <i>Patterns are available on request</i> )	
	eyrise® cell	Type	Annealed glass	
		Thickness	8mm	
<b>INNER PANE</b>	Annealed glass - EN 572,			
<b>(MONOLITHIC OR LAMINATED)</b>	Glass type <sup>#</sup>	Heat-strengthened glass - EN 1863,		
		Fully toughened glass (Heat soak tested) - EN 14179 or Laminated safety glass - EN 14449		
<b>OR</b>	Thickness	monolithic 4 – 10 mm; laminated 44.4 to 88.4		
	Coating	High-performance Low-E coating		
<b>MIDDLE PANE (MONOLITHIC)</b>	Laminate	Standard PVB		
	Interlayer	Acoustic PVB subject to request		
<b>IGU</b>	Cavity fill	Argon		
	Secondary seal	Silicone		
	Cavity width	8 – 20 mm		
	Spacer*	Quanex SuperSpacer T-Spacer SG, Black		
	Spacer bite	24 mm minimum		
	Certification	EN 1279		
<b>PIGTAIL LENGTH</b>	38 cm with male connector			
<b>TYPICAL SWITCHING TIME</b>	One second for the transition between fully tinted and maximum brightness			
<b>POWER CONSUMPTION</b>	≤ 1 W/m <sup>2</sup>			
<b>OPERATING TEMPERATURE</b>	-20°C to +50°C			

\* Specifications and tolerances can differ for non-standard configurations (ex. shapes) and must be assessed before confirming the order

<sup>#</sup> All low-iron

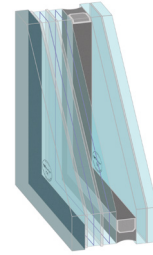
## OPTICAL PERFORMANCE

The estimation of optical light transmission and g-value for eyrise® s350 is performed according to EN 410 and EN 673. The glass performance varies with the type of liquid crystal (LC) mixture\* used in the eyrise® cells.

### OPTICAL PERFORMANCE - DOUBLE GLAZED UNIT

For buildup  $t_{\text{coverglass}} = 6 \text{ mm}$ ,  $t_{\text{cavity}} = 14 \text{ mm}$ , and inner pane  $t_{\text{innerpane}} = 6 \text{ mm}$

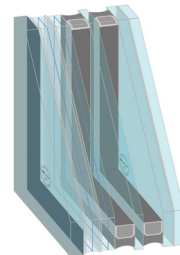
LC-mixture*	Type C		Type D		Type E	
	Bright	Dark	Bright	Dark	Bright	Dark
Light transmission $T_v$	0.50	0.13	0.44	0.09	0.37	0.04
Solar factor $g$	[EN 410] 0.34	0.16	0.31	0.14	0.28	0.11
Light reflectance $\rho_v$	Outside	0.07	0.05	0.07	0.04	0.06
	Inside	0.09	0.08	0.09	0.08	0.09
U-value $U_g$	[EN 673]		1.1 W/m <sup>2</sup> K			
UV transmittance $T_{uv}$			0.00			



### OPTICAL PERFORMANCE - TRIPLE GLAZED UNIT

For buildup  $t_{\text{coverglass}} = 6 \text{ mm}$ ,  $t_{\text{cavity1}} = 14 \text{ mm}$ , middle pane  $t_{\text{middlepane}} = 6 \text{ mm}$ ,  $t_{\text{cavity2}} = 14 \text{ mm}$  and inner pane  $t_{\text{innerpane}} = 6 \text{ mm}$

LC-mixture*	Type C		Type D		Type E	
	Bright	Dark	Bright	Dark	Bright	Dark
Light transmission $T_v$	0.45	0.12	0.40	0.08	0.34	0.04
Solar factor $g$	[EN 410] 0.29	0.12	0.26	0.10	0.23	0.07
Light reflectance $\rho_v$	Outside	0.08	0.05	0.07	0.04	0.07
	Inside	0.12	0.12	0.12	0.12	0.12
U-value $U_g$	[EN 673]		0.6 W/m <sup>2</sup> K			
UV transmittance $T_{uv}$			0.00			



\* Every eyrise® cell contains a transparent liquid crystal (LC) mixture that forms the core of the instant shading functionality of eyrise® s350 glass. eyrise® offers three different mixtures to suit diverse glass performance parameters.

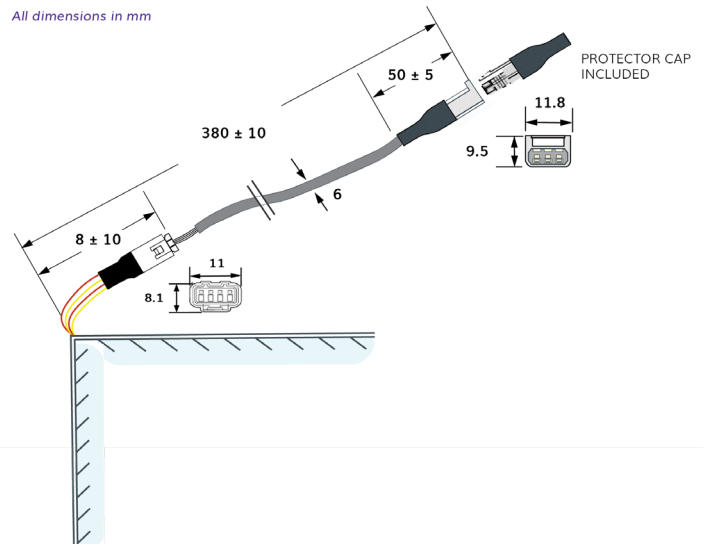
## ACOUSTIC PERFORMANCE

The acoustic performance for eyrise® s350 is assessed according to EN12758/EN ISO 10140 and varies with the build-up. For a standard DGU build-up with  $t_{\text{coversheet}} = 6 \text{ mm}$ ,  $t_{\text{cavity}} = 20 \text{ mm}$ , and laminated inner pane  $t_{\text{innerpane}} = 12 \text{ mm}$ , Sound reduction index  $R_w (C; C_{tr}) = 48 (-1; -4)$

## PIGTAIL

The eyrise® s350 IGU has a 38 cm long pigtail that exits from the IGU corner\* in a fixed position. The pigtail is comprised of 8 cm glass wires and a 30 cm connection cable. The disposable pigtail protector cap must be removed before connection to the driver cable. The pigtail is always located on one of the top corners of the glass unit. Its position is fixed and cannot be changed. The pigtail can be bent such that it can lie flat on either edge of the glass unit.

It is recommended to provide a local clearance of approximately 10 mm within the frame passage and hole size of 12.5 mm through the frame for the pigtail.



TOTAL LENGTH	380 mm
MINIMUM BENDING RADIUS	24 mm
LOCAL CLEARANCE	10 mm
PROTECTION CLASS	IPX7 rated connector

\* Specifications and tolerances can differ for non-standard configurations (ex. shapes) and must be assessed before confirming the order

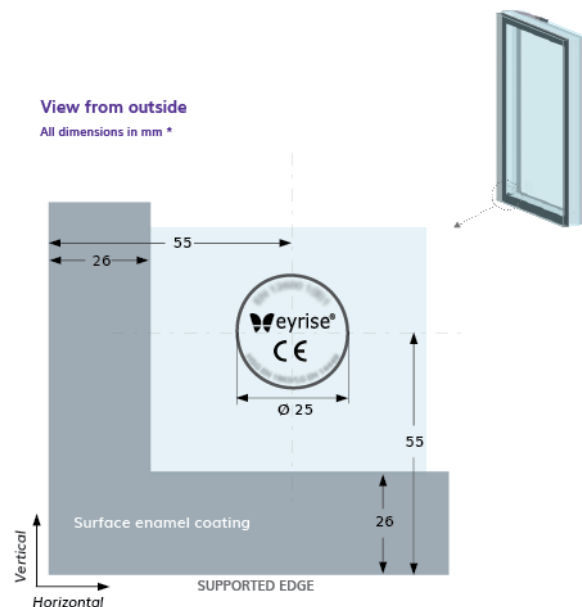
## GLASS MARKING

Each IGU has print markings on the glass surface and spacer that provide information for identification and legitimacy.

The print markings are located at the bottom left corner of the IGU and is readable from the outside. It displays details on European standards applicable for the IGU.

For IGUs with a heat-treated and laminated inner pane, an additional glass mark is present on the inner pane at the same location.

For IGUs with annealed or annealed laminated inner pane, no marking will be present.



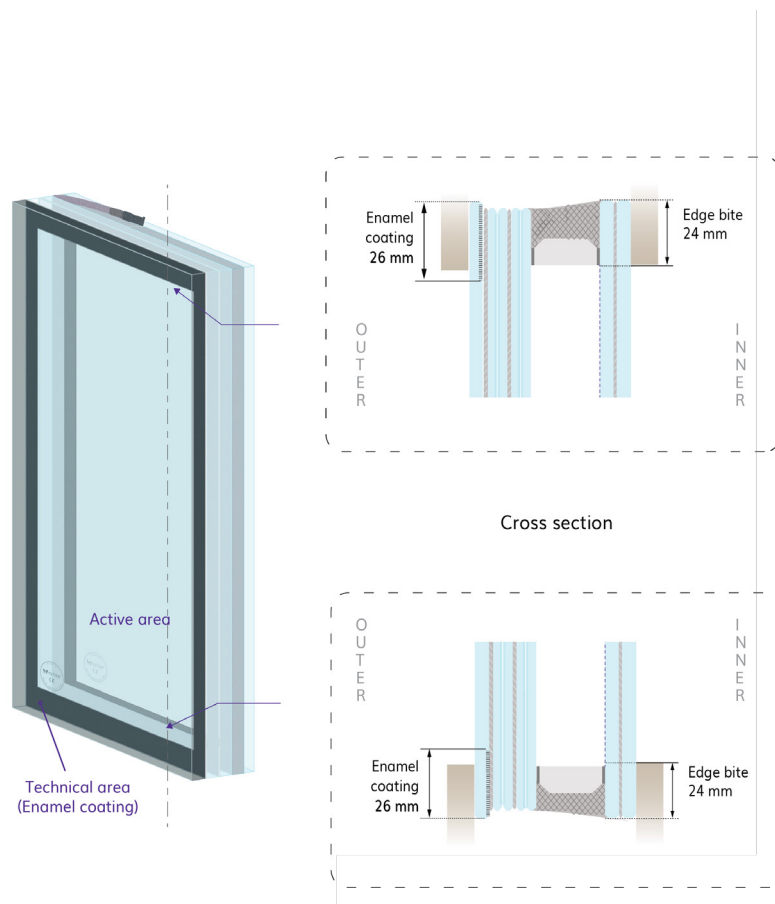
\* Dimensions may vary with the type of secondary seal



## EDGE DETAILS

The dynamically active zone of shading in an eyrise® s350 IGU is called the active area. The region on the perimeter of the IGU surface bounding the active area and encompassing the spacer and sealants is the technical area. The technical area is inactive and is concealed on the outer pane only by a surface enamel coating for improved visual appearance. On the inner side of the IGU, it is recommended to incorporate an edge bite to hide the spacer on all sides. For more details, please refer to project specifics.

**Note:** No frame will be supplied; please review framing compatibility with your frame supplier.



### TYPICAL EDGE DIMENSIONS

Image shows top and bottom edge cross section details for framing edge bite considerations. Actual values depend on project specifics

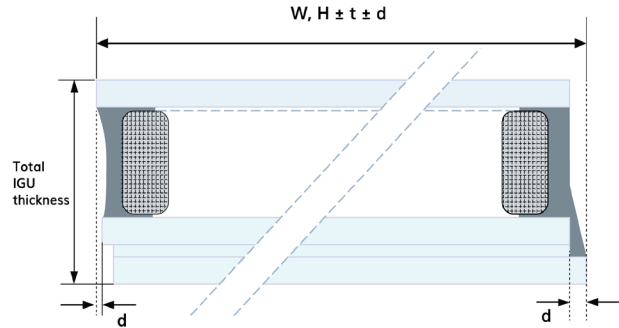


## PHYSICAL TOLERANCES

All tolerances\* comply with the minimum requirements outlined in EN1279, EN572-2 and EN ISO 12543-5. The tolerances mentioned below are only for rectangular panels. Tolerances are to be determined individually for each build-up.

### IGU THICKNESS TOLERANCES

Glazing	Thickness tolerance
Double glazing	± 2.0 mm
Triple glazing	± 2.5 mm



### IGU DIMENSIONAL TOLERANCES

Double/Triple glazed insulating glass	Tolerances on B and H	Max misalignment, d
All panes ≤ 6mm, and (B and H) ≤ 2000 mm	± 2.0 mm	≤ 2.0 mm
6 mm < Thickest pane ≤ 12 mm, or 2000 mm < (B or H) ≤ 3500 mm	± 3.0 mm	≤ 3.0 mm
3500 mm < (B or H) ≤ 5000 mm and thickest pane ≤ 12 mm	± 4.0 mm	≤ 4.0 mm
1 pane > 12mm, or (B or H) > 5000 mm	± 5.0 mm	≤ 5.0 mm
<i>Thicknesses are nominal thickness</i>		

\*Specifications and tolerances can differ by project and must be assessed before confirming the order

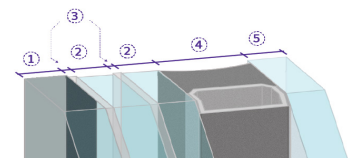
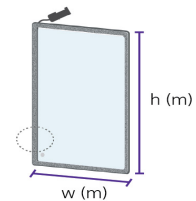
## IGU THICKNESS AND WEIGHT

The calculation of thickness and weight for a double glazed unit of width w and height h is given by:

**DGU Nominal Thickness:**  $t_{total} = t_{coversheet} + 2(t_{cell} + t_{PVB}) + t_{cavity} + t_{innerpane}$

**Glass Weight approximation:**  $W_{total} = g_{glass} \times (t_{coversheet} + 2t_{cell} + t_{innerpane}) \times w \times h$

1	COVER GLASS	6 mm	Cover sheet glass thickness, $t_{coversheet}$
2	CELL	8 mm	eyrise® cell thickness, $t_{cell}$
3	PVB	1.52 mm	PVB interlayer thickness, $t_{PVB}$
4	CAVITY	12 mm	inner space cavity thickness, $t_{cavity}$
5	INNER PANE	12 mm	thickness of inner pane, $t_{innerpane}$
	$g_{glass}$	2.5 kg/m <sup>3</sup>	density of glass of 1 mm thickness



For a standard double glazed unit with  $t_{coversheet} = 6$  mm, Argon cavity  $t_{cavity} = 12$  mm, and laminated inner pane  $t_{innerpane} = 12$  mm, thickness is 49 mm and weight of the glass is 85 kg/m<sup>2</sup>.

## VISUAL QUALITY CRITERIA

eyrise® s350 instant solar shading glass is checked for visual quality based on the guidelines issued by *Bundesverband Flachglas e.V* in:

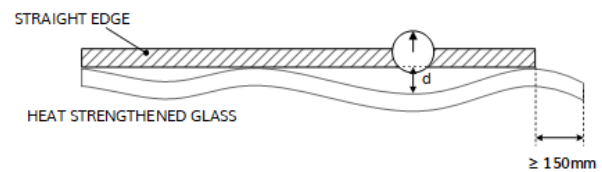
- ‘Guideline to assess the visual quality of glass in buildings’
- ‘Guideline for assessing the visual quality of enamelled glass’
- ‘EN ISO 12543-6 Glass in building - Laminated glass and laminated safety glass - Part 6: Appearance’

### Edge stripping

A visible bluish purple line is noticeable inside the IGU at the edge where the coating meets the primary seal. This is acceptable and does not impact product performance. A recommended capping of 26 mm on the inner pane will mask this line.

### Roller wave distortion

All our heat-treated glass is produced with a roller wave limit as stated in EN1863/ EN12150.

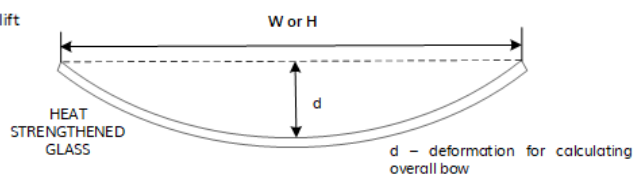
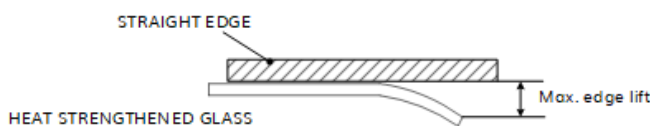


Glass type	Max roller wave, d (mm)
Uncoated float glass in accordance with EN 572-1 and EN 572-2	0.3

### Bow and edge lift

All our heat-treated glass is produced with a edge lift and overall bow as stated in EN1863-1.

Glass type	Max overall bow (mm/m)	Edge lift	
		Thickness of glass (mm)	Max edge lift values (mm)
Uncoated float glass in accordance with EN 572-1 and EN 572-2	3.0	3	0.5
		4 to 5	0.4
		6 to 12	0.3

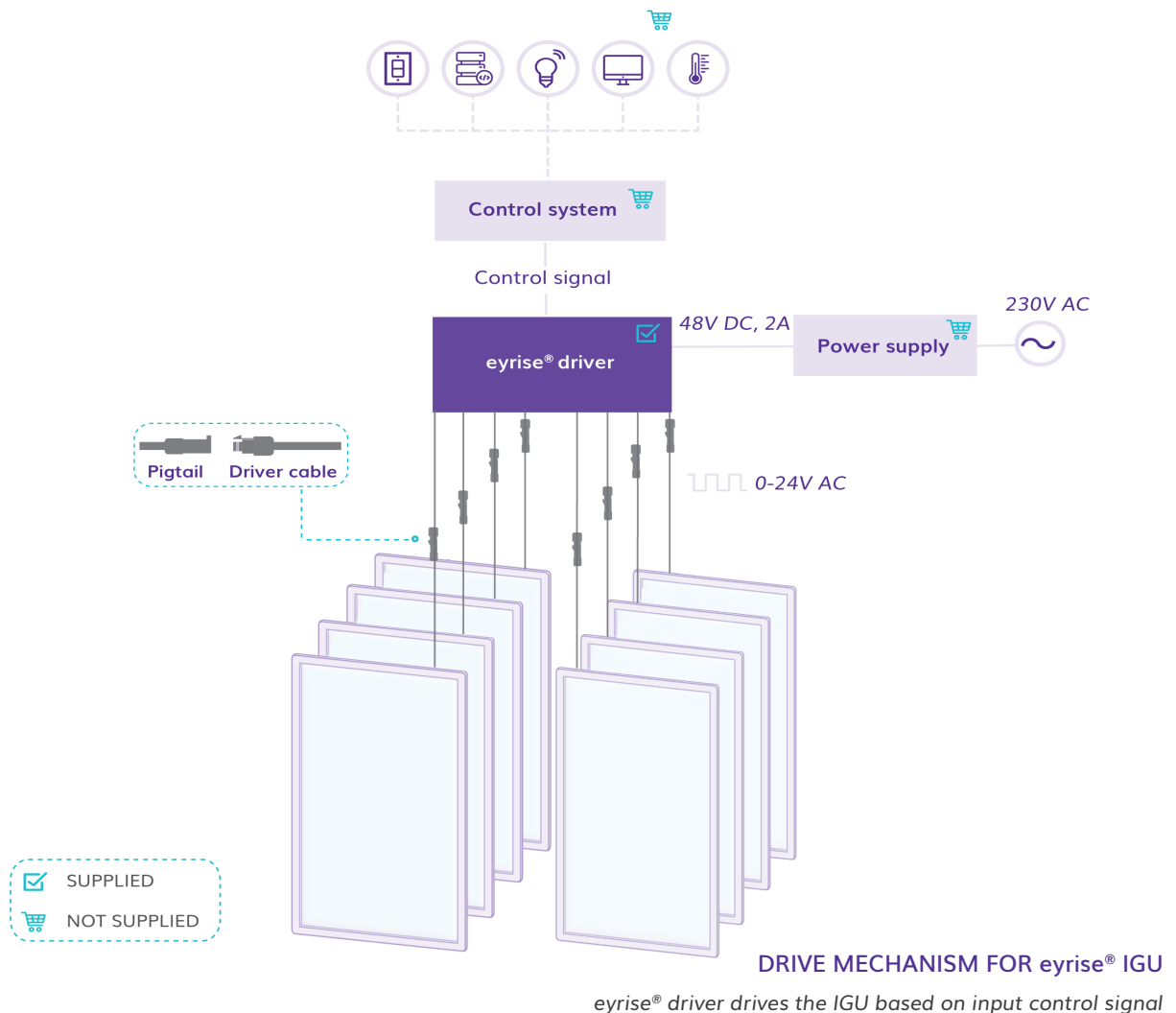


## eyrise® s350 CONTROL SYSTEM

The eyrise® IGU can be tinted to the desired shade using electrical control. A control system with eyrise® electronic components provide the flexibility to interface eyrise® s350 glass to varied BMS (Building Management System) constructions with typical electrical consumption as low as 1 W/m<sup>2</sup> (0.1 W/ft<sup>2</sup>).

The eyrise® IGU is driven by an eyrise® driver through a connection made by the driver cable and pigtail. Shielded driver cables available in standard lengths of 10 m and 30 m provide the choice and flexibility for installation.

The driver sends driving signals to the IGU based on the input control signals. Each driver can control up to eight eyrise® IGUs (up to 32 m<sup>2</sup>) and requires 48V DC for its operation.



The BMS can send control signals to the driver in two ways:

- Option 1 - Using KNX interface
- Option 2 - Using analog control

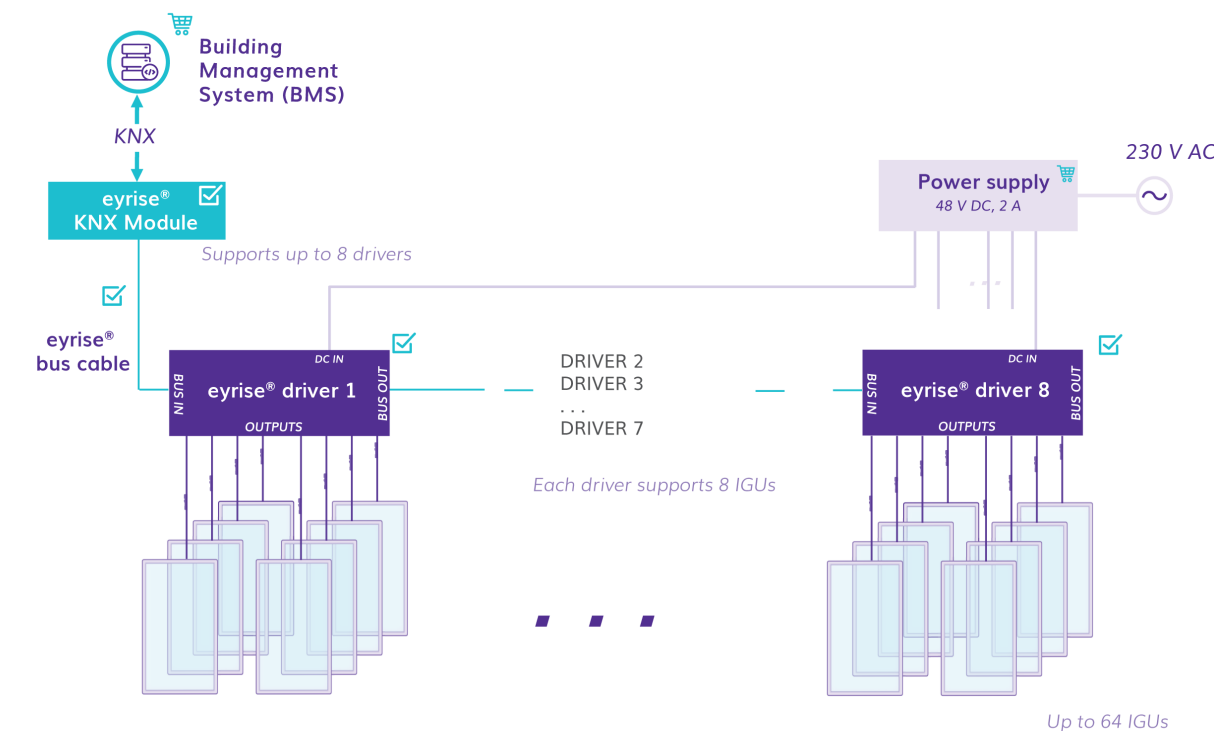
## OPTION 1 - CONTROL USING KNX INTERFACE

This method of control is most suitable for buildings with automation and control systems operating with a KNX interface.

In this method, an eyrise® KNX communication module is used to convert KNX commands from the BMS into corresponding control signals for the driver. The KNX communication module can interface up to eight drivers to the BMS.

The drivers are connected to the KNX communication module with the eyrise® bus cable that uses a serial interface protocol. Each driver is assigned a unique address for communication that must be configured using rotary switches on the driver. The KNX communication module is powered by the first driver connected to it by the eyrise® bus cable.

When the BMS sends a KNX command, the KNX communication module converts the command to equivalent messages on the eyrise® bus. These messages actuate the corresponding driver to drive eyrise® IGU.



### CONTROL USING KNX INTERFACE

eyrise® KNX communication module translates KNX commands from the BMS to driver control signals

## OPTION 2 - ANALOG CONTROL

This method of control is used when the BMS directly controls a driver using analog signals. The analog control method is most suitable in the absence of KNX bus systems or when a mixed analog control system is desired. Analog signal cables connect the driver to the BMS.

**Note:** Analog signal cables are not in the scope of supply.

The analog control voltage input for a driver ranges from 0 V to +10 V.

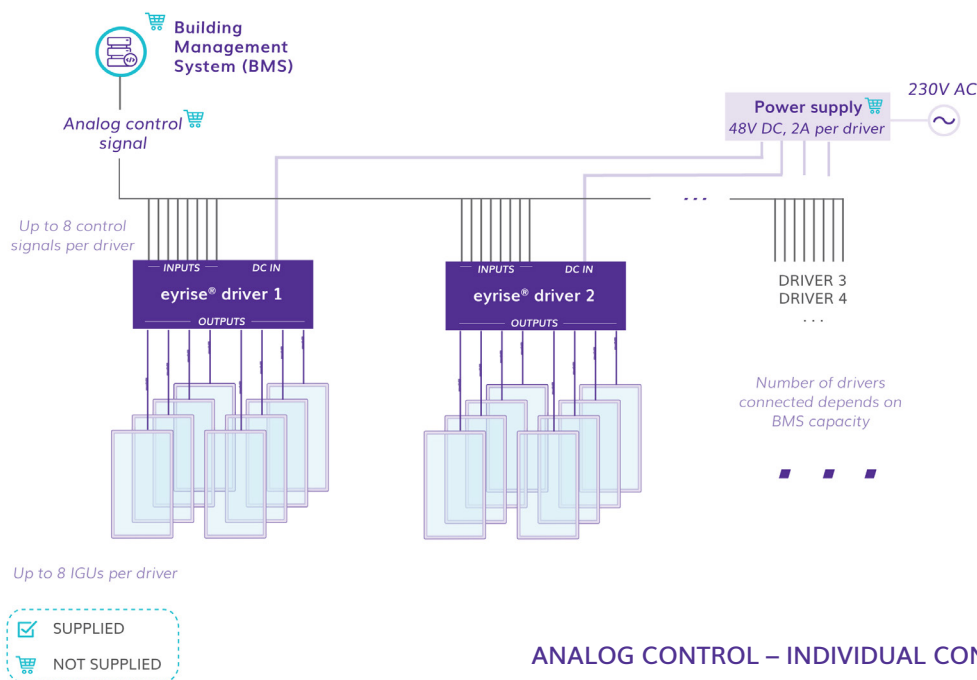
CONTROL SIGNAL ( $V_{CTRL}$ )	GLASS STATE
0 V DC	Dark state
$0 V < V_{ctrl} < 10 V$	Intermediate tint varying linearly with the control voltage
10 V DC	Bright state

There are two ways of analog control:

- Individual control
- Grouped control

### Individual control mode

In this mode, each eyrise® IGU is controlled by a dedicated control signal from the BMS. The driving signal for each IGU is mapped to a separate analog control signal from the driver. Hence, every eyrise® IGU is controlled by an individual analog signal from the BMS. The individual control mode can be used to control the IGUs using manual switches.



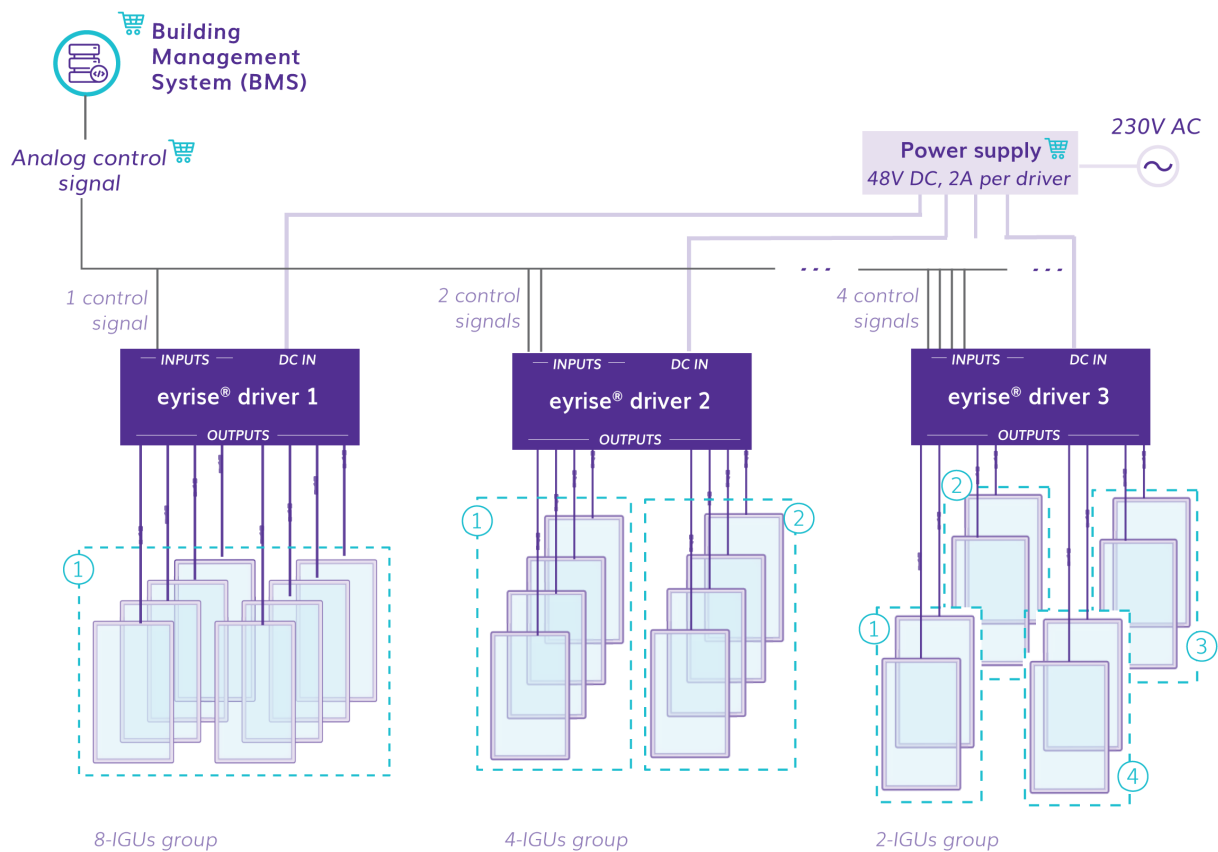
### ANALOG CONTROL – INDIVIDUAL CONTROL MODE

Each eyrise® IGU has a dedicated analog control signal cable from the BMS

### Grouped control mode

It is possible to control a group of IGUs using a single analog control signal from the building management system (BMS). The driving signals from the driver to a group of IGUs are mapped to a single analog control signal from the BMS. The mapping is achieved using rotary switches on the driver. For more details, contact our sales representative.

In this method, a maximum of eight eyrise® IGUs can be grouped together. Thus, at least one analog control signal is required per driver.



#### ANALOG CONTROL – GROUPED CONTROL MODE

A single analog control signal from the BMS controls a group of eyrise® IGUs

## COMPONENTS

### eyrise® DRIVER CABLE

A driver cable connects the pigtail of an eyrise® IGU to the driver. It is a two-core, flexible, shielded cable with meter marking and is accompanied with a ferrite core. Standard available length of a driver cable is 30 m ± 5 mm. Driver cables of length 10m are available on request. The female connector of the driver cable connects with the pigtail connector. The other end of driver cable is open-ended and must be electrically connected to a driver with its cable shielding connected to common ground.

✓ SUPPLIED



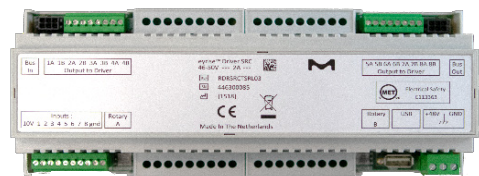
**DRIVER CABLE**

Carries driving signals from driver to IGU

### eyrise® DRIVER

A driver provides the control signal to the eyrise® IGU. Each driver can control up to eight eyrise® IGUs with individual sizes of maximum 4 m<sup>2</sup>. The driver can control a maximum of four eyrise® IGUs with individual sizes above 4 m<sup>2</sup> using a different configuration. A driver requires an operating power supply of +48V DC, 2A. The driver can be controlled by an eyrise® bus interface or by separate analog inputs.

✓ SUPPLIED



**eyrise® DRIVER**

Provides driving signal to the IGU

**Note:** Each driver must be separately grounded.

On power-up, if there is no communication received from the eyrise® bus interface, the driver uses analog inputs as input. The rotary switches A and B define the driver address (in KNX mode) or the grouping of driving signals to eyrise® IGU (in Grouped control mode). Firmware update and configuration is possible via the USB service port. For detailed wiring instructions, contact our sales representative.

### eyrise® KNX COM MODULE

eyrise® KNX Com module is the KNX communication module that interfaces the eyrise® driver to the KNX bus of the BMS. It communicates with the BMS through KNX commands. Each KNX communication module can connect to a maximum of eight drivers in a daisy chain network. The eyrise® KNX Com module gets its power from the internal eyrise® bus. Firmware update and configuration is possible via the USB service port. For detailed wiring instructions, contact our sales representative.

✓ SUPPLIED



**eyrise® KNX COM MODULE**

Communicates with the BMS





## eyrise® BUS CABLE

 SUPPLIED

eyrise® bus is the serial communication link between the eyrise® KNX Com module and the drivers. Standard available length of an eyrise® bus cable is 25 cm. Extended cables of length 50 cm for special cabinet wiring requirements are available on request.

## POWER SUPPLY

 NOT SUPPLIED

Each driver needs an external power supply of 48V DC, 2A. Any additional requirement of fuses must be planned by a qualified installer before cabling. For detailed specifications, contact our sales representative.

## BUILDING MANAGEMENT SYSTEM (BMS)

 NOT SUPPLIED

BMS refers to any control system that is used to monitor and manage the various electrical components in a building. It could be a sophisticated system with programmed control outputs or be limited to a simple electronic control system.

## CONTROL SYSTEM ACCESSORIES

 NOT SUPPLIED

Accessories such as sensors, switches, user interfaces and others can be configured in the system to control the glass shading functionality.

## KNX WIRING

 NOT SUPPLIED

For control using a KNX interface, wiring for the interface between the eyrise® KNX Com module and BMS must be according to the standards specified by the KNX association.

## ANALOG CONTROL SIGNAL CABLE

 NOT SUPPLIED

For direct control by the BMS, the analog control signal cables from the BMS to the driver must satisfy the following requirements:

- at least AWG24; minimum 0.2 mm<sup>2</sup>
- Length < 10 m unshielded cable
- Length 10 m to < 30 m with a shielded cable connected to common earth

## CONFORMITY

The product is in conformity with the relevant European Community harmonisation legislation:

- General product safety Directive (2001/95/EC)
- Low Voltage Directive (2014/35/EU)
- Electromagnetic Compatibility Directive (2014/30/EU)
- RoHS Directive (2011/65/EC)
- Construction Product Regulation (EU) No 305/2011

Conformity is shown by compliance with the applicable requirements of the following documents:

- EN 14449 Glass in building – Laminated glass and Laminated Safety glass
- EN 1279 Glass in building - Insulating glass units
- EN 62368-1 Audio/video, information and communication technology equipment. Safety Requirements.
- EN 61000-6-2 EMC - Generic standards - Immunity for industrial environments
- EN 61000-6-3 EMC - Generic Standards - Emission standard for residential, commercial and light-industrial environments

## WARRANTY

Insulating Glass Unit	10 years from the date of delivery
Switchable functionality	10 years from the date of delivery
Supplied electronics	2 years from the date of delivery

*Please refer to the General Warranty Statement for the applicable terms and conditions.*

*Any modification to the product without consent will lead to a void in warranty.*

## CONTACT INFORMATION

eyrise B.V. De Run 5432, 5504 DE Veldhoven, Netherlands.



[eyrisesupport@merckgroup.com](mailto:eyrisesupport@merckgroup.com)

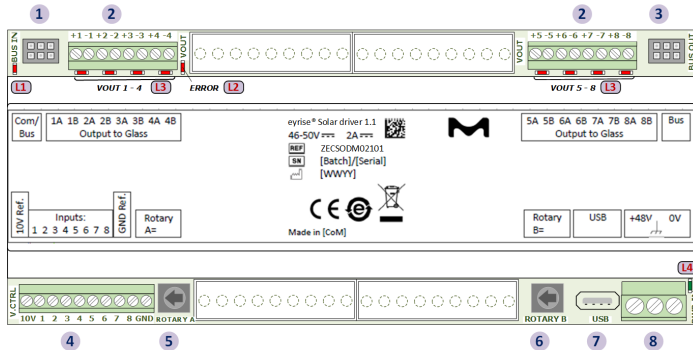
[www.eyrise.com](http://www.eyrise.com)

eyrise B.V. is an affiliate of Merck KGaA, Darmstadt, Germany.

## APPENDIX

# APPENDIX A: eyrise® s350 DRIVER

## PIN DESCRIPTION



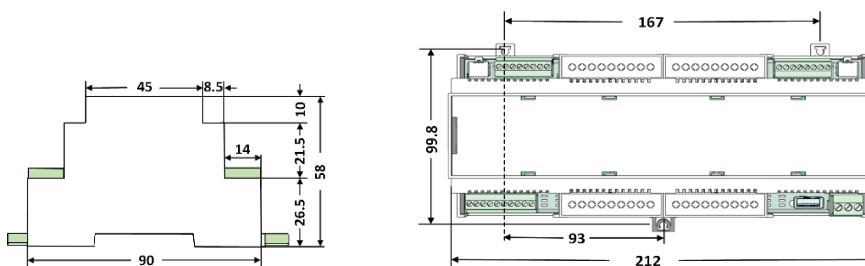
## CONNECTIONS

1	eyrise® Bus IN
2	Driver outputs
3	eyrise® Bus OUT
4	Analog inputs
5 6	Rotary address switches (A & B)
7	USB service port
8	Power supply

## SPECIFICATIONS

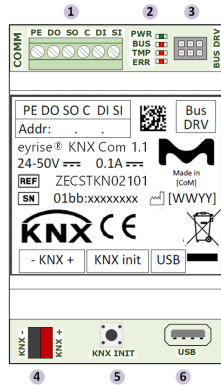
ORDER CODE	ZECSDM02101
OUTPUT CHANNELS	8
VOLTAGE	0 V to 24 V AC
OUTPUT CAPACITIVE LOAD	1...40 µF capacitance
OUTPUT RESISTIVE LOAD	Resistive load < 0.1 A DC
POWER	46-50 V DC, Max. 2A
ANALOG INPUT	0 to 10 V DC
HEAT DISSIPATION	18 W
WIDTH	12 DIN units (21.6 cm x 6 cm x 9 cm)
OPERATING TEMPERATURE	-5°C to 40°C (23°F to 104°F)
STORAGE TEMPERATURE	-40°C to 85°C (-40°F to 185°F)
RELATIVE HUMIDITY	< 95% non-condensing
MAX. OPERATING ALTITUDE	2000 meters above sea level
PROTECTION CLASS	IP20
REGULATORY COMPLIANCE	Product is CE certified and conforms with Low-Voltage Directive and ROHS directive

## DIMENSIONS



## APPENDIX B: eyrise® s350 KNX MODULE

### PIN DESCRIPTION



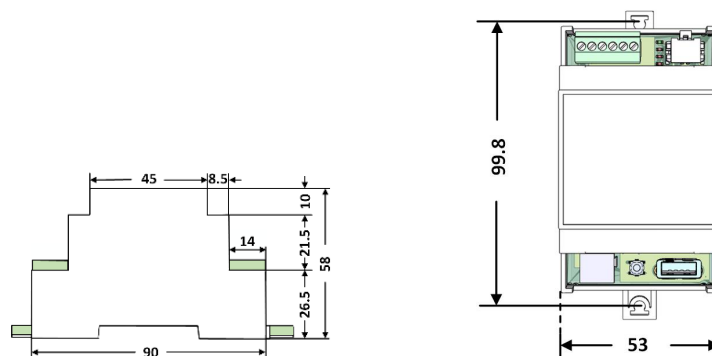
### CONNECTIONS

- 1 Synchronization signals
- 2 Status LEDs
- 3 eyrise® bus to DRV
- 4 KNX Bus
- 5 KNX programming button
- 6 USB service port

### SPECIFICATIONS

ORDER CODE	ZECSTKN02101
BUS	KNX TP
POWER	50 V DC from connected eyrise® driver
CURRENT	Max. 0.1 A
HEAT DISSIPATION	3 W
WIDTH	3 DIN units (5.4 cm x 6 cm x 9 cm)
OPERATING TEMPERATURE	-5°C to 40°C (23°F to 104°F)
STORAGE TEMPERATURE	-40°C to 85°C (-40°F to 185°F)
RELATIVE HUMIDITY	< 95% non-condensing
MAX. OPERATING ALTITUDE	2000 meters above sea level
PROTECTION CLASS	IP20
REGULATORY COMPLIANCE	Product is CE certified and conforms with Low-Voltage Directive and ROHS directive

### DIMENSIONS

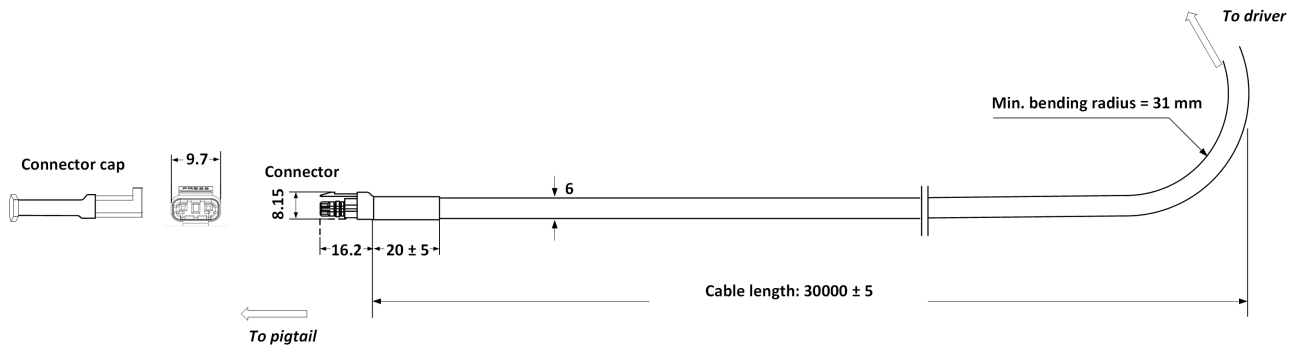


## APPENDIX C: eyrise® s350 DRIVER CABLE

### SPECIFICATIONS

ORDER CODE	RDC.1358.30m.03
OPERATING TEMPERATURE RANGE (FIXED INSTALLATION)	-40°C to +80°C
STANDARD LENGTH	30 m ±5 mm
OUTER DIAMETER (APPROX.)	6.2 mm
MINIMUM BENDING RADIUS	31 mm
SHEATH COLOUR	Grey (RAL 7001)
CONNECTOR DIMENSIONS	16.20 mm (l) x 9.70 mm (b) x 8.15 mm (h)
PROTECTION CLASS	IP67 rated connector
FIRE RATING	PVC self-extinguishing and flame retardant, Class Eca, according to EN 60332-1-2*

### DIMENSIONS



\* halogen free driver cable (Fire Rating Class Cca) is available on request

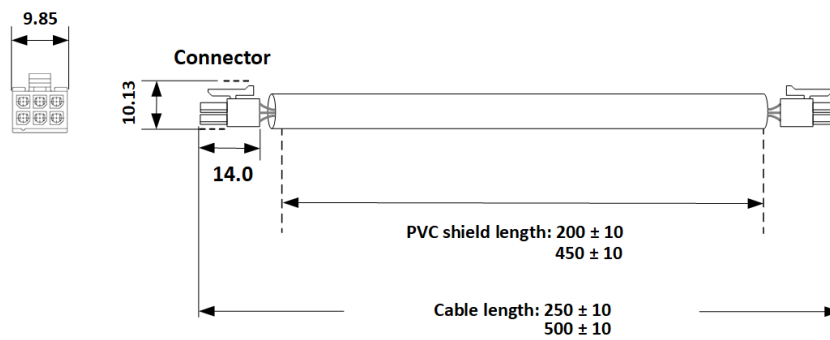


## APPENDIX D: eyrise® s350 BUS CABLE

### SPECIFICATIONS

TEMPERATURE RANGE (FIXED INSTALLATION)	-40°C to +80°C
MAXIMUM VOLTAGE	50 V DC
SHEATH COLOUR	25 cm cable: Black (RAL 9005) 50 cm cable: Green (RAL 6016)

### DIMENSIONS



## APPENDIX E: PROJECT WORK DISTRIBUTION

For the proper installation and working of eyrise® s350 glass, both electrical and façade contractors need to work in co-ordination throughout the project. The scope of work must be clearly defined during the initial phase to avoid any ambiguity in installation and commissioning. The following table summarises an example project work distribution plan. Any deviation in the scope of work should be clearly agreed between the concerning parties before the project commencement.

SERVICE	MAIN CONTRACTOR	FAÇADE CONSTRUCTION	ELECTRICAL INSTALLATION	eyrise® B.V.
Provide IGU size and build-up, pigtail location, packaging needs and schedule for shipment	Informed	✓	Informed	Feasibility check performed
Shipment of glass, cables and eyrise® control components		✓ (Depends on incoterm)		✓ (Depends on incoterm)
Storage of glass and electric components		✓		
Preparation of holes in the frame for cable outlet		✓		
Cable routing plan	Informed	Informed	✓	
Trimming driver cables to required length		Informed	✓	
Laying driver cables near electrical cabinet			✓	
Routing driver cables from electrical cabinet to glass frame		Informed	✓	
Labelling the cables (driver cable)		Informed	✓	
Installation of glass		✓		Guidance offered
Functional testing of the glass before and after installation	Informed	✓		Testing tool provided
Connecting pigtail to driver cable		✓		✓
System design and preparing the list of components				Guidance offered
Power supply and cabling			✓	
Installation of control cabinet, switches and sensors			✓	
KNX setup and commissioning			✓	Support
System test	Informed		✓	
Product documentation (eyrise® components)			✓	✓
Complete system documentation		✓	✓	Support



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