



**LUMENEX™**  
**VENLO**

To cover every crop



# ABOUT US

## **BOAL SYSTEMS** **GREENHOUSE ROOF SYSTEMS**

BOAL Systems offers an extensive range of aluminum deck and sidewall systems for high-tech glass and foil horticulture, as well as for the growing demand for horticultural solar solutions. We have established long-term cooperative relationships with our customer base of regional and global greenhouse construction companies. BOAL Systems has delivered more than 10,000 hectares of new greenhouses worldwide.

Our modular greenhouse systems can be equipped with fully integrated sustainable solutions such as climate screens, insect netting, insulation and ventilation systems. These are tailored to specific project requirements, size and complexity, as well as local geographic or climatic challenges such as earthquakes, extreme storms, heavy snow, hail or rainfall.

With a strong focus on partnership, engineering and R&D, BOAL Systems is at the forefront of high-tech indoor growing with superior technical capabilities and improved light transmission. It enables growers to achieve optimal yields with minimal resources.





# LUMENEX™ VENLO

## THE LUMENEX™ VENLO SYSTEM A PROVEN GREENHOUSE ROOF

Since the introduction of our Lumenex™ greenhouse system in 1993, this type of greenhouse has proven to be very reliable in many areas. The knowledge and experience with this system has led to further innovation of our in-house extruded aluminum greenhouse profiles. As a result, the current Lumenex™ Venlo greenhouse system seamlessly meets the key requirements of maximum strength, optimum light transmission and energy efficiency.

The Lumenex® Venlo system is available for different optimize system sizes, configurations and options for a variety of crops, farming practices and local conditions.

As a modular system, many variations and options are possible. The Lumenex Venlo system is most commonly used with 4mm glass, but can also be used or expanded to include ISO glass, F-CLEAN® film, sandwich panels, 16mm polycarbonate panels and solar panels.

## TECHNICAL DATA

We tailor our Lumenex™ Venlo greenhouse roof system to customer requirements and local standards, as well as to the geographical and climatic conditions of the project site. This ensures an efficient roof system and contributes to improved growing conditions and economic returns.

### SMART DESIGN

- The gutter, which is mounted at 90° to the steel trellis, has an insulation chamber to prevent heat convection and an additional gutter to drain condensation;
- Lumenex™ greenhouse roof system profiles are mounted at a standard 21.6-degree angle to the gutter and are tapered to optimize direct light entry, absorption and reflection;
- PVC strips are available with insulation between the aluminum roof bar and the glass, as well as a triple seal for high water tightness;
- Flat transitions between the glass and the bars prevent dirt accumulation and ensure smooth water flow during rainstorms.
- The bars are attached to the ridge on both sides with a torque-proof bar connector.

This construction method makes it possible to use very slim and strong bar profiles, resulting in low light interception (shadow fall) occurs.

- The bars have a rebate into which the 4mm glass sheets or 16mm channel sheets are slid. Hinged vents can be connected to the top of the ridge profiles.

Much of the strength of the Lumenex™ Venlo greenhouse roof system is provided by the gutter-column connection, trellis-gutter joint and moment-fixed deck bracing. At all connections, a wide support surface is created and slack is minimized.

For optimum light transmission, very low bars, narrow channels, large span widths, large glass sizes, tempered glass and air vents can be chosen.

### DIMENSIONS

The standard Lumenex™ Venlo greenhouse roof system is available in span widths of 3.20, 4.00, 4.27 and 4.80 meters and can be fitted with 4, 16 and soon 22 mm covering material.



## LUMENEX™ VENLO GREENHOUSE ROOF SYSTEM SUITABLE FOR 4MM GLASS

### BENEFITS AT A GLANCE

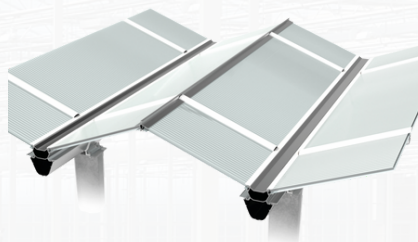
- Slim deck with high light transmission for the highest possible yield/m<sup>2</sup>;
- Solid, durable and reliable;
- Deck configuration optimized for your project specifications and local conditions;
- Pre-engineered for fast and accurate field installation;
- Bars with internal co-extruded PVC for low heat transfer, increased water tightness and optimal glass positioning;
- Optionally equipped with single, double or alternating vents, which may or may not be equipped with insect screens, or which are prepared for self installation.



## LUMENEX™ VENLO GREENHOUSE ROOF SYSTEM SUITABLE FOR 16MM POLYCARBONATE

### BENEFITS AT A GLANCE

- Slim, solid and durable deck;
- Deck configuration optimized for your project specifications and local conditions;
- Pre-engineered for fast and accurate field installation;
- Deck rod suitable for optimal integration of 16 mm polycarbonate (x-structure) with increased watertightness.



### CULTIVATION

deal for growing vegetables such as cucumbers, tomatoes and peppers, and soft fruits such as strawberries.