ONDEX
Stretch the future



BIO2 HP OPTI*Red*

Increase in agronomic yield

www.ondex.com

PHOTOSYNTHETIC EFFICIENCY FOR IMPROVED AGRONOMIC YIELD

Two factors play a key role in plant growth:

- Only part of the solar spectrum (400-700nm) is used by plants for photosynthesis.
- Red light plays a key role in plant growth.

The **OPTI***Red* sheet combines these 2 features to improve photosynthetic yield.
It directly includes spectral converters leading to agronomic benefits.

This new advantage is an addition to the mechanical strength of the **ONDEX** BIO2 HP sheet thanks to bi-stretching, a unique manufacturing process consisting in stretching the sheets in both directions.

AGRONOMIC BENEFITS

The photosynthetic efficiency increases, leading to multiple benefits for plants.
Furthermore, OPTIRed sheets allow an alternative to red LED lights during the day, reducing energy costs.

The spectral conversion provided by the **OPTI***Red* sheet is lasting over time thanks to the unique formulation of the **ONDEX** sheet

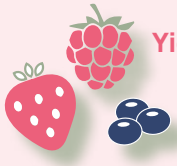
- YIELD INCREASE GAIN OF 10%
- REDUCTION IN WATER AND NUTRIENT CONSUMPTION
- EARLINESS OF FLOWERING
- IMPROVED HEALTH AND BETTER RESISTANCE TO PARASITES
- QUALITY OF FRUIT AND VEGETABLES



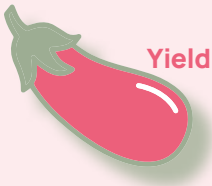
Yield +25%
Earliness



Yield +12%
Earliness



Yield +10%
Less disease
More flowers open



Yield +20%

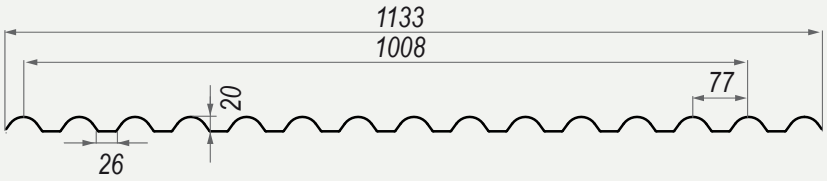


Yield +10%

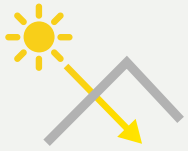
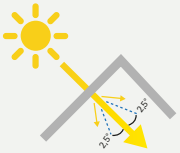
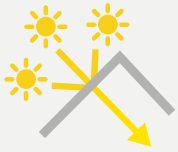
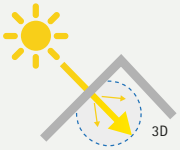
SPECIFICATIONS

PROFILE TOG 77/20

- Useful width: 1008 mm
- Total width: 1133 mm



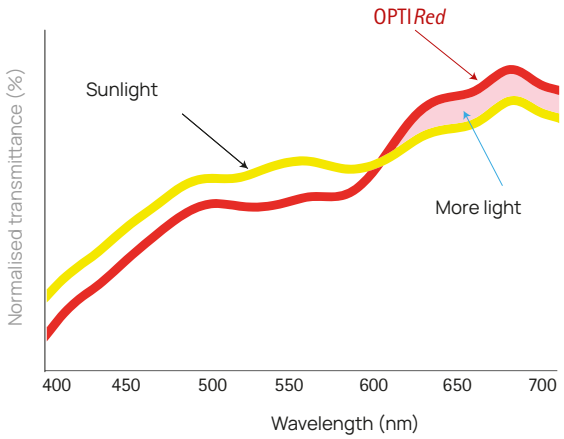
OPTICAL DATA

Light transmission % ❶	Haze Diffusion % ❶	Hemispherical light transmission % ❷	Hortiscatter % ❷
75	20 max.	70	4
Percentage of direct solar radiation that passes vertically and is transmitted indoors	Percentage of light that deviates from the incident beam by more than 2.5 degrees when passing through	Incoming light beam despite the slope and the glares	Ability to transform the beam into a wide beam limiting the shadows cast
			

Nominal values given for the BIO2 range may vary depending on manufacturing tolerances. Information given in December 2023 in the current state of our knowledge. Technical specifications are subject to change without notice.

❶ determined with a haze-guard ❷ Data from Wageningen UR light lab (The Netherlands) between 400 and 700 nm

SPECTRAL CURVES



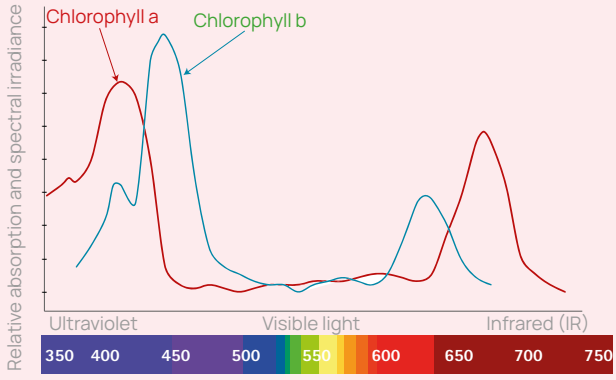
LIGHT QUALITY

RED LIGHT
- Responsible for regulating flowering and fruit production
- Increases stem diameter and boosts ramification

GREEN LIGHT
- Leaves absorb little green light

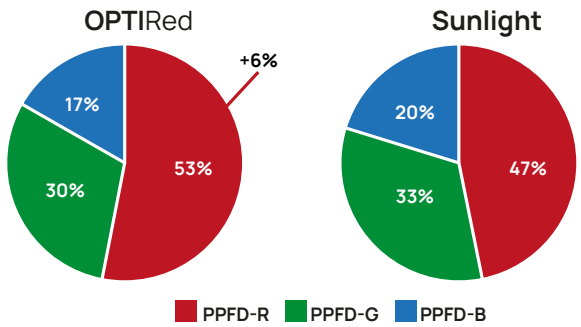
BLUE LIGHT
- Responsible for vegetative growth and leaf growth
- Important for seedlings and young plants as it reduces stretching

ABSORPTION SPECTRUM OF CHLOROPHYLLS



Source: Wageningen University

PPDF-R GAIN OF 6%



PPFD: Photosynthetic Photon Flux Density

WHAT IS BI-STRETCHING?

An exceptional resistance «Made in France»

Invented and patented in 1964, this process is unique in the world for the production of cladding and roofing sheets.

Bi-stretching involves stretching the sheet in both width and length before giving it its final shape.

This entirely mechanical process is perfectly stable over time and gives the **ONDEX** sheets their incomparable resistance.

More than four times higher than non bi-stretched PVC sheets!

WHAT IS PVC?

... Polyvinyl chloride

It has been produced industrially since the 1960s and is now the most widely used plastic material in the world in the construction industry.

It is a thermoplastic resin that easily accepts the shape you want to give it.

ONDEX uses the bi-stretching of PVC to manufacture its sheets.

NaCl

PVC IS MADE FROM SALT (57%).

0% PHTALATE BISPHENOL A

PHTALATE AND BISPHENOL A FREE

AGRONOMIC YIELD



PROMOTES BIODIVERSITY



PHOTOSYNTHETIC EFFICIENCY



Experimental greenhouse in Reims (France) 2023

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