

*For more
yield!*



SPECIAL FILMS
for greenhouses and tunnels



Greenhouse films protect a wide variety of crops from hail, rain, wind, birds etc. They promote the accretion as well as the growth of plants. The complete light spectrum has to reach the cultures. This is responsible for colouration, compact growth, taste.



The property of diffuse greenhouse films is to refract the sunlight, that passes through the film to achieve a better light diffusion in the greenhouse without much loss of light. The risk of burns and shadowing is reduced and a more uniform colouration of the fruit is promoted.



Plants need visible light for photosynthesis. The global light transmission, stated in percent, corresponds to the amount of light, which passes the film in the visible area. The higher the value, the more light can pass through the film. This is measured according to the standard EN 2155.



Transparent or clear greenhouse films have the property of improving the transmission of solar radiation, which is needed for photosynthesis, without a scattering effect. Due to this property, a transparent greenhouse film can improve photosynthesis.



Thermal greenhouse films have the property to keep the long-wave infrared rays, which are emitted from the ground and crops at night, inside the greenhouse. Due to these characteristics, a greenhouse film at night can retain the heat stored during the day longer and help to increase the precociousness. The risk of frost damage can also be reduced.



Films with anti-condens dew have the property of changing the surface tension of the film so that the water no longer condenses on the film in the form of drops, but in the form of a fine film of water. Due to this property, the anti-condens film can reduce the risk of dripping and increase the light transmission, because the sunbeams are not broken by the drops of water.



	Folisol Tube The UV-stable tubular film	Easy 4 The new tunnel film for cost savers	UV M 42 window plus The improved UV-B open, inexpensive special film	UV M 42 window high diffuse The diffuse UV-B permeable, inexpensive special film
Description	Greenhouse film made of Polyethylene	Greenhouse film made of Polyethylene	Greenhouse film made of Polyethylene	Greenhouse film made of Polyethylene
Area of use	Side ventilation for all types of greenhouse films.	Berry fruit growing and asparagus cultivation.	Berry fruit & asparagus growing. Lettuce and ornamental plant cultivation.	High-growing, light sensitive summer crops.
Colour	transparent	transparent	transparent	transparent-diffuse
Thickness / Power	200 µ	150 µ / 180 µ / 200 µ	180 µ / 200 µ	180 µ / 200 µ
UV guarantee D-A-CH	60 months / 5 years (90 kLy / year)	54 months / 4,5 years (90 kLy / year)	54 months / 4, 5 years (90 kLy / year)	54 months / 4,5 years (90 kLy / year)
Transparency	approx. 89 / 90% total	approx. > 89% total	approx. 89 / 90% total	approx. 86% total
Proportion of diffuse light	approx. 30% diffuse light	approx. 20% diffuse light	approx. 20% diffuse light	approx. 80% diffuse light
Cooling properties	No	No	No	Yes
Thermicity	> 80%	> 60%	> 70%	> 80%
UV-A Permeability	84%	60%	84%	75%
UV-B Permeability	75%	20%	80%	60%
Anti-condens	No	No	No	No

Performance improvements that convince

Feel the difference

For over 30 years, folitec has stood for greenhouse film expertise in all agricultural sectors. In recent years, the properties of greenhouse films have been further developed in a user-oriented manner, from the pioneering innovation of diffuse and temperature-controlling films, to the development of products that promote growth as well as the flavour intensity.



Through collaboration with the world's leading experts from the Universities of Lancaster and Reading, the folitec constant research into plants and pests enabled the folitec Lumisol range to be developed. The UV-open special films resulted in considerable advantages such as frost protection, earliness, faster fruit sweetness and higher colouration.

Numerous users therefore recommend the special films from folitec.



	Lumisol clear AF	Folisol clear	Lumisol diffused AF	Folitherm FR
	The UV-B permeable special film with anti-condens	The UV-B permeable greenhouse film	The diffuse, UV-B open thermal film with anti-condens	The flame retardant greenhouse film
Description	7-layer greenhouse film made of polyethylene	7-layer greenhouse film made of polyethylene	7-layer greenhouse film made of polyethylene	7-layer greenhouse film made of polyethylene
Area of use	For crops that require outdoor-like spectrum to improve colour and taste.	Like Lumisol clear, but with additional advantages for certain types of greenhouses.	Special film with anti-condens properties and cooling effect for high-growing, light-sensitive cultures.	Non-flammable special film for sales installations according to the specifications of the building authorities
Colour	transparent	transparent	transparent-diffuse	transparent
Thickness	200 µ	200 µ	200 µ	200 µ
UV guarantee D-A-CH	60 months / 5 years (90 kLy / year)	60 months / 5 years (90 kLy / year)	60 months / 5 years (90 kLy / year)	48 months / 5 years (90 kLy / year)
Transparency	approx. 88 / 90% total	approx. 88 / 90% total	approx. 87% total	approx. 86% total
Proportion of diffuse light	approx. 30% diffuse light	approx. 30% diffuse light	approx. 90% diffuse light	approx. 50% diffuse light
Cooling properties	No	No	Yes	No
Thermicity	> 80%	> 80%	> 85%	> 85%
UV-A Permeability	84%	84%	79%	40%
UV-B Permeability	75%	75%	67%	No
Anti-condens	Yes	No	Yes	No



Satisfied customers testify to folitec's proven yield increases through earlier harvesting, larger fruits and better taste. All folitec special films are also 100% recyclable.



For flowers and ornamental plants, the field-proven and tested film systems provide compact, strong growth and brilliant colours. In rose cultivation, users have noticed improved pigmentation and flower colours, as well as better growth, through the use of the innovative UV-open special films.



In tomato and pepper cultivation, too, folitec special films have proven to be excellent properties.



The variety of types, individual dimensions, long durability, mechanical strength, good light transmission as well as a short-term delivery of the specialized trade have distinguished folitec as a supplier for special films for more than 30 years.





Added value for more value

Greenhouse films protect the crops from the effects of the weather such as hail, rain, wind and also from birds. But the light spectrum in the greenhouses also promotes growth. All the light should reach the crops. This has a significant impact on the taste, pollinator activity and the use of pesticides.

Intelligent film systems promote agricultural results

The crops to be cultivated determine the requirement profile for a green-house film in terms of chemical resistance, earliness, tear resistance, UV permeability, fire behaviour, light transmission, cooling, shading, anti-condens, anti-dust, anti-algae, etc.. Innovative and intelligent films for all applications already exist.

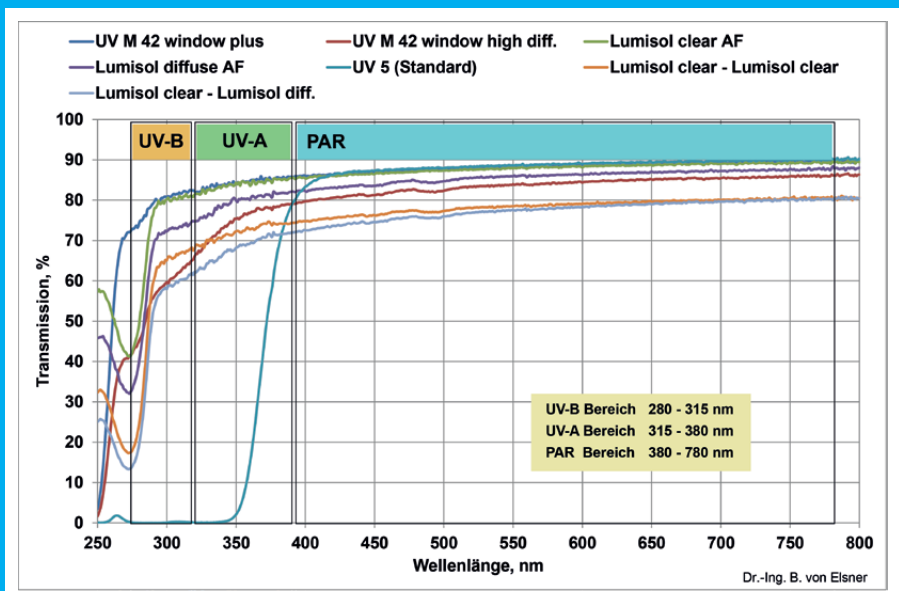
folitec has been a pioneer for over 30 years in the development of new and practical film systems in Europe.

Sulphur and chlorine resistant films

Films with a high resistance to sulphur, iron and chlorine are also currently conquering the market. The possibility of higher sulphur protection for the lifetime of a film is based on special raw materials. Otherwise, the film can be combined with all other properties. In general growers should mention the use of sulphur or chlorine to the supplier when buying film, as these substances react with the film and can lead to premature aging of a polyethylene film if the concentration is high.

Light transmission

Plants need visible light to grow. An important factor is the amount of light that passes through the film in the visible range. This can be determined within the framework of a special spectral transmission measurement. All folitec special films have been tested by a neutral and independent specialist laboratory. As a user, you can be sure that you are buying high quality products.



Test results of the folitec special films.



Anti-condens films

The folitec special greenhouse films can be equipped with additives during film production. These film additives provide a nano-effect to the anti-condens films. The drops from a film of water that runs off at the next drop edge. This prevents the burning glass effect, and the crops are protected from dripping water.



With anti-condens films, however, roof and/or side ventilation is absolutely necessary. Anti-condens films are therefore not suitable for tunnels, as the moisture can lead to fog formation and this fog must be able to escape from the tunnel.

Through the use of nanotechnology, the surface structures can be modified in such a way that the anti-condens and anti-fog effects can be combined.

UVB open special films

UVB rays can not penetrate conventional greenhouse films and glass greenhouses. UVB open films therefore offer light transmission across the entire light spectrum. This can result in hardening of young plants, improved aroma and flavour, higher levels of fruit antioxidants, higher fruit sweetness and more intense colouration. Other benefits include stronger and more compact plants, significantly less pesticide use and better pollinating activity of beneficial insects.



Protected cultivation

Successful cultivation in Germany is only possible with protection. The right greenhouse film is therefore an important component. Basically the weather conditions are also decisive. Other conditions such as fertilisation, ventilation, irrigation and plants also influence the harvest success.

UV permeability is no guarantee of a good film.

Intelligent films can be produced for specific users. Tested measured values from neutral and certified test laboratories give you the certainty you need when choosing a film.

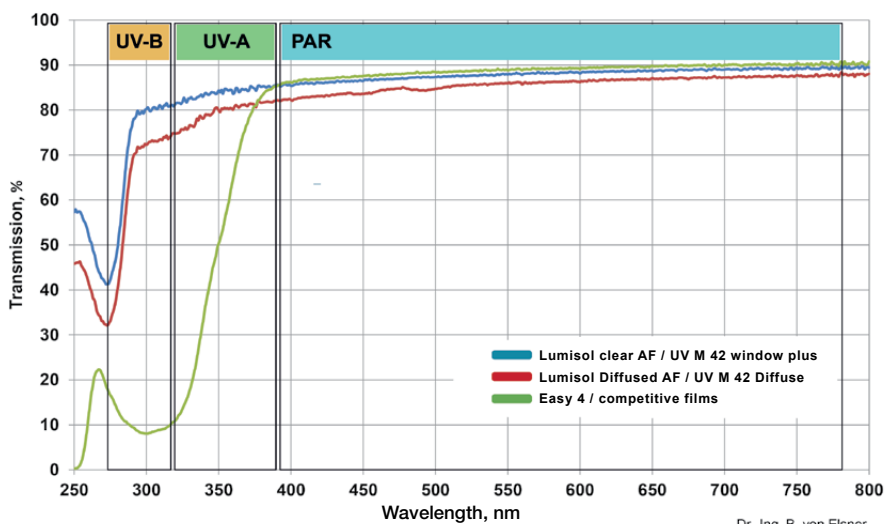
Do not compromise when choosing your film. Talk to folitec, the specialists for intelligent film systems.

folitec also offers the right film for your application.

Test results of the folitec special films in comparison with competitor films.



TRANSMISSION in film composition Lumisol clear AF / Lumisol Diffused AF / Easy 4 and competitive films





Folisol Tube

The UV-stable tubular film

Easy 4

The new tunnel film for cost savers

Side ventilation for all types of greenhouses

Description	The UV-stable tubular film.
Area of use	Side vents for all types of greenhouses.
Colour	transparent
Thickness	200 µ
UV guarantee D-A-CH	60 months / 5 years (90 kLy / year)
Transparency	approx. 89 / 90% total
Proportion of diffuse light	approx. 30% diffuse light
Cooling properties	No
Thermicity	> 80%
UV-A Permeability	84%
UV-B Permeability	75%
Anti-condens	No
Notes	-
Widths	0,80 m / 1,05 m / 1,30 m / 1,66 m / 1,66 m with thread / 1,80 m / 2,10 m / 2,40 m Other dimensions or fabrication on request.

Other dimensions or fabrication on request.

The simple UV-open tunnel film

Description	The new tunnel film for cost savers.
Area of use	Berry fruits and asparagus cultivation.
Colour	transparent
Thickness	150 µ / 180 µ / 200 µ
UV guarantee D-A-CH	54 months / 4,5 years (90 kLy / year)
Transparency	approx. > 89% total
Proportion of diffuse light	approx. 20% diffuse light
Cooling properties	No
Thermicity	> 60%
UV-A Permeability	60%
UV-B Permeability	20%
Anti-condens	No
Notes	-
Widths	on request
Lengths	on request

Other dimensions or fabrication on request.



UV M 42 window plus

The improved UV-B open, inexpensive film

UV M 42 window high diffuse

The diffuse UV-B open, inexpensive film

The improved UV-B open, inexpensive special film for early fruit growing

Description	The improved UV-B open, inexpensive special film.
Area of use	Berry fruits and asparagus cultivation. Lettuce and ornamental plant cultivation.
Colour	transparent
Thickness	180 µ / 200 µ on request
UV guarantee D-A-CH	54 months / 4,5 years (90 kLy / year)
Transparency	approx. 89 / 90% total
Proportion of diffuse light	approx. 20% diffuse light
Cooling properties	No
Thermicity	> 70%
UV-A Permeability	84%
UV-B Permeability	80%
Anti-condens	No
Notes	-
Widths	6,50 m / 8,00 m / 8,50 m / 9,00 m / 10,00 m / 11,00 m / 12,00 m / 12,50 m / 13,00 m / 13,50 m / 14,00 m / 14,50 m / 15,50 m / Further widths on request
Lengths	as required

Other dimensions or fabrication on request.

The diffuse UV-B permeable inexpensive special film for summer cultivation of strawberries and raspberries

Description	The diffuse UV-B permeable special film.
Area of use	High-growing, light-sensitive summer crops.
Colour	transparent-diffuse
Thickness	180 µ / 200 µ on request
UV guarantee D-A-CH	54 months / 4,5 years (90 kLy / year)
Transparency	approx. 86% total
Proportion of diffuse light	approx. 80% diffuse light
Cooling properties	Yes
Thermicity	> 80%
UV-A Permeability	75%
UV-B Permeability	60%
Anti-condens	No
Notes	-
Widths	8,00 m / 9,50 m / 11,50 m / 12,50 m / 14,50 m / 15,50 m / Further widths on request
Lengths	as required

Other dimensions or fabrication on request.



Lumisol clear AF

The UV-B permeable film with anti-condens



Folisol clear

The UV-B permeable greenhouse film

The special film with excellent properties in terms of light transmission and mechanical stress

The special film without anti-condensation with construction-advantages for certain types of greenhouses

Description	The UV-B permeable greenhouse film with anti-condens.
Area of use	For crops that require a outdoor-like spectrum to improve colour and taste.
Colour	transparent
Thickness	200 µ
UV guarantee D-A-CH	60 months / 5 years (90 kLy / year)
Transparency	approx. 88 / 90% total
Proportion of diffuse light	approx. 30% diffuse light
Cooling properties	No
Thermicity	> 80%
UV-A Permeability	84%
UV-B Permeability	75%
Anti-condens	Yes
Notes	Better light transmission Water must be able to run off the film
Widths	4,50 m / 6,00 m / 6,50 m / 7,50 m 8,00 m / 9,00 m / 10,00 m / 11,00 m 12,00 m / 12,50 m / 14,30 m / 15,00 m 16,00 m / Further widths on request
Lengths	as required

Other dimensions or fabrication on request.

Description	The UV-B permeable greenhouse film. (No anti-condens)
Area of use	Like Lumisol clear, but with additional advantages for certain types of greenhouses.
Colour	transparent
Thickness	200 µ
UV guarantee D-A-CH	60 months / 5 years (90 kLy / year)
Transparency	approx. 88 / 90% total
Proportion of diffuse light	approx. 30% diffuse light
Cooling properties	No
Thermicity	> 80%
UV-A Permeability	84%
UV-B Permeability	75%
Anti-condens	No
Notes	-
Widths	3,20 m / 6,50 m / 8,50 m / 10,00 m 12,00 m / 14,30 m Further widths on request
Lengths	as required

Other dimensions or fabrication on request.



Lumisol Diffused AF

The diffuse UV-B transmissive thermal anti-condens

Folitherm FR

The flame retardant greenhouse film

The special thermal film for summer cultivation flattens the temperature curve in hot and cold conditions

The non-flammable special film for sales facilities depending on the requirements of the building authorities

Description	The diffuse and UV-B permeable thermal special film with anti-condens.
Area of use	Special film with anti-condens properties and cooling effect for high-growing light-sensitive cultures.
Colour	transparent-diffuse
Thickness	200 µ
UV guarantee D-A-CH	60 months / 5 years (90 kLy / year)
Transparency	approx. 87% total
Proportion of diffuse light	approx. 90% diffuse light
Cooling properties	Yes
Thermicity	> 85%
UV-A Permeability	79%
UV-B Permeability	67%
Anti-condens	Yes
Notes	Better light transmission Water must be able to run off the film
Widths	6,50 m / 8,00 m / 10,00 m / 12,00 m 14,50 m / 15,00 m / Further widths on request
Lengths	as required

Other dimensions or fabrication on request.

Description	The flame retardant greenhouse film.
Area of use	Non-flammable special film for sales installations according to the specifications of the building authorities.
Colour	transparent
Thickness	200 µ
UV guarantee D-A-CH	48 months / 4 years (90 kLy / year)
Transparency	approx. 86% total
Proportion of diffuse light	approx. 50% diffuse light
Cooling properties	No
Thermicity	> 85%
UV-A Permeability	40%
UV-B Permeability	No
Anti-condens	No
Notes	-
Widths	on request
Lengths	as required

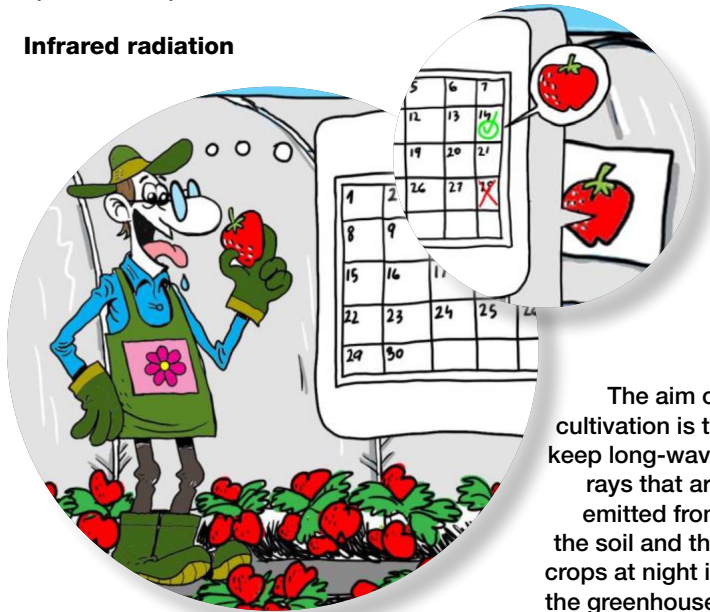
Other dimensions or fabrication on request.



Special thermal films

Growers often ask what advantages thermal films or even diffuse films have for their agricultural applications. In practice, it is crucial that the crops receive as much of the entire light spectrum as possible.

Infrared radiation



The aim of cultivation is to keep long-wave rays that are emitted from the soil and the crops at night in the greenhouse.

Warmth and earliness

The heat stored during the day can be kept indoors for longer in the house and thus contribute the promotion of precocious. For strawberry cultivation, the UV open folitec special films are ideally suited for earliness.

Reducing frost damage in the greenhouse

If the greenhouse is not exposed to sunshine or continuous frost, the use of a thermal film alone is not sufficient to protect the crops from frost damage. Talk to the experts from folitec about this. folitec always offers the right film for every application.

Light refraction

The advantage of using diffuse films is the refraction of sunlight to ensure better light diffusion. They are therefore particularly suitable for summer crops.

Light diffusion

Light diffusion has a considerable influence on the harvest result. The risk of burning as well as the formation of shadowing is reduced and a more uniform colouration of the fruits is promoted. The temperature curves during the course of the day are also flattened. Daytime temperatures can be kept down and nighttime temperatures can be kept up longer. This does not create shading. However, if there is too little sunlight, they allow less light to pass through, which is why they are only conditionally suitable for the dark season. When growing summer crops, diffuse films has its advantages over clear film.



Clear and transparent films

Clear or transparent films are used in agriculture to improve the transmission of sunlight without scattering losses. Transparent films improve the photosynthesis process and ensure faster heating of the greenhouse. As a result the daytime temperatures are higher in the greenhouse, which gives them advantages over diffuse films, especially in the dark season.

However, direct sunlight and possible overheating, as well as the burning glass effect when dew is formed, can damage the plants.



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