



## Makrofol® ID superlaser polycarbonate films.

Makrofol® ID

The manner in which you use our products, technical assistance and information (whether verbal, written or by way of production evaluations), including any suggested formulations and recommendations, is beyond our control. Therefore, it is imperative that you test our products to determine suitability for your processing and intended uses. Your analysis must at least include testing to determine suitability from a technical, health, safety, and environmental and regulatory standpoint. Such testing has not necessarily been done by Covestro, and Covestro has not obtained any approvals or licenses for a particular use or application of the product, unless explicitly stated otherwise. [EMEA only: If the intended use of the product is for the manufacture of a pharmaceutical/ medicinal product, medical device<sup>1</sup> or of pre-cursor products for medical devices or for other specifically regulated applications which lead or may lead to a regulatory obligation of Covestro, Covestro must explicitly agree to such application before the sale.] Any samples provided by Covestro are for testing purposes only and not for commercial use. Unless we otherwise agree in writing, all products are sold strictly pursuant to the terms of our standard conditions of sale which are available upon request. All information, including technical assistance is given without warranty or guarantee and is subject to change without notice. It is expressly understood and agreed by you that you assume and hereby expressly release and indemnify us and hold us harmless from all liability, in tort, contract or otherwise, incurred in connection with the use of our products, technical assistance, and information. Any statement or recommendation not contained herein is unauthorized and shall not bind us. Nothing herein shall be construed as a recommendation to use any product in conflict with any claim of any patent relative to any material or its use. No license is implied or in fact granted under the claims of any patent. These values are typical values only. Unless explicitly agreed in written form, they do not constitute a binding material specification or warranted values.

Edition: 2022 · Printed in Germany



Covestro Deutschland AG  
Kaiser-Wilhelm-Allee 60  
51373 Leverkusen  
Germany

[solutions.covestro.com](https://solutions.covestro.com)  
[info@covestro.com](mailto:info@covestro.com)  
[films@covestro.com](mailto:films@covestro.com)



# Makrofol® ID superlaser – minimum thickness, high laser reactivity and maximum contrast

**Core benefits of Makrofol® ID superlaser**

- Highest laser engraving personalization** 
- Reduction of thickness to an absolute minimum of 60 µm** 
- Integration of forensic security features due to additional space** 
- Enormous cost savings due to less material consumption and extremely high laser reactivity** 
- Three-layer structure with different laser reactivities as unique forensic safety feature** 
- Excellent clarity of transparent windows with accurate image resolution** 

**Makrofol® ID** superlaser film with its highly improved properties is well suited for the production of highly forgery-resistant ID cards and documents, which must meet extremely high security requirements.

**Makrofol® ID** superlaser's unique three-layer structure creates a "laser-engraved" forensic dataset. By using this highly specialized film it can be verified if the presented document has been subject of counterfeit attempts. Once laminated under increased temperature and pressure, **Makrofol® ID** layers are inseparably bonded without requiring any adhesives. Therefore, it is not possible to manipulate the inside of the card without causing obvious damage. Due to the extremely high laser reactivity of **Makrofol® ID** superlaser film, the contrasts achieved through laser engraving are remarkable in terms of sharpness and efficiency.

High contrasts obtained by using **Makrofol® ID** superlaser are so far not achievable with existing technology. Therefore, **Makrofol® ID** superlaser has an excellent performance in transparent window applications with accurate image contrast resolution.

The laser-reactive layers are ultra sensitive to laser radiation and require less energy in comparison to standard laser-reactive films. Therefore, **Makrofol® ID** superlaser enables time savings during the production process of at least 20 percent.

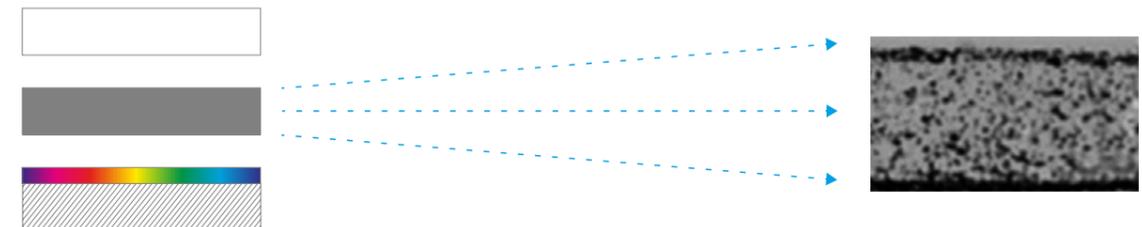
**Makrofol® ID** superlaser enhances ID document applications for high resolution and contrast with laser personalization in an extreme thin layer.

Due to Covestro innovative state-of-the-art technology, the layer of **Makrofol® ID** superlaser provides equivalent contrast to six times of standard laser engravable films in clear window constructions.

## Superlaser product facts

The extremely sharp contrast of laser engraving using **Makrofol® ID superlaser transparent** is possible due to a three-layer structure with different laser reactivities in every layer. 50 percent of a personalized picture is engraved in only 10 µm layer. Therefore this

thin layer is nearly impossible to manipulate. Because of this unique forensic safety feature every security document produced with **Makrofol® ID** superlaser transparent provides extremely high protection against fraud attempts.



By using **Makrofol® ID superlaser white**, the white core section of a document allows a thinner construction by still being highly laser-reactive on both sides. This benefits in more space for overlay films and simplifies the integration of security features like chips or antennas.

## Makrofol® ID superlaser film grades

SUPERLASER GRADE	THICKNESS (µm)	COMMON APPLICATION
ID332 6-2 740006 Transparent	60 and 100 µm	• ID, passport, driver's license
ID332 4-4 140014 White	100 µm, other thickness on demand	• ID, passport, driver's license



### Key facts about Makrofol® ID superlaser:

- better contrast
- faster laser personalization
- improved yield