

Clear windows and transparent areas in ID documents can be further secured with color shifting film technology. Applied in transparent polycarbonate films used for the implementation of clear windows in ID documents, the OVM Optical Variable Material® technology enables the development of an innovative and intuitive security feature. It creates brand new visual effects which are observable in level 1, 2 and 3 security. The transparent area of the ID document changes color according to the background (white or dark) and can work in combination with smartphone or UV light for enhanced security. **Makrofol® ID** O.V.M color switching polycarbonate film can enable level 1, 2 and 3 security features to help make ID documents more secure.

Multiple security features in a single polycarbonate film including:

Effect	Security Level	Description	Example
ColorShift	1	Color changing in the clear window according to background color (white or dark).	
Smart Shadow	1 and 1.5	Observable with flashlight of a smartphone. Example: the transparent area turns red while its projected shadow remains green.	
UV-Boost	2	Strong fluorescence of clear window under UV light.	
Smart Edge	1 and 2	The edge of a transparent area clearly shows a secondary color and intensified under UV light.	
DataLock	1 and 2	Grey scale laser personalization inside the Makrofol® ID O.V.M film is possible. It appears colored when checked on dark background.	

OVM Optical Variable Material® is a registered trademark of Crime Science Technology SAS.

Makrofol® ID O.V.M polycarbonate film grades	Thickness
Makrofol® ID349 6-2 567648 O.V.M blue/red (laser engravable)	100 µm, 500 µm
Makrofol® ID349 6-2 367542 O.V.M pink/yellow (laser engravable)	100 µm, 500 µm
Makrofol® ID349 6-2 667648 O.V.M green/red (laser engravable)	100 µm, 500 µm



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