

New LAM Lamination Adhesives for AR/VR/MR and Smartphone Displays

The New LAM adhesives - Low Index lamination adhesive with High Adhesion

Distinguished by their unique combination of high bond strength and low refractive index, our new LAM adhesives were designed for excellent adhesion to various plastic films and substrates such as PC, PET, PMMA and glass.

These adhesives combine low index (1.34, 1.35, 1.36) and very strong adhesion to plastic films (PET, PC), PMMA, glasses and metal surfaces. The materials are pure UV cured materials, with no solvents, enabling simple application.

The LAM adhesives are currently being introduced in an accelerated rate into various AR and VR displays, and the feedback from customers is very positive. The major application is in waveguide-based AR/VR/MR displays, where the low index LAM adhesive enables separation between the R G and B light-guides.

The LAM product line includes 3 members: LAM-134, LAM-135, and LAM-136, with refractive index of 1.34, 1.35 and 1.36, respectively. All three have strong adhesion to plastic films. The adhesion of LAM-136 is significantly higher.


One of our Anti Reflective Coatings, such as AR-138 can be used to coat the outer surfaces.

To the right (pic.1): An augmented reality application, with navigation instructions and other driving information superimposed over the real landscape. MY Polymers LAM lamination adhesives are used here to bond together (laminates) the R, G and B light-guides. The low index prevents leakage of light between adjacent light-guides.


MY Polymers AR-138 is used to prevent degradation due to dirt or fingerprint marks on the outer surfaces.

LAM-135

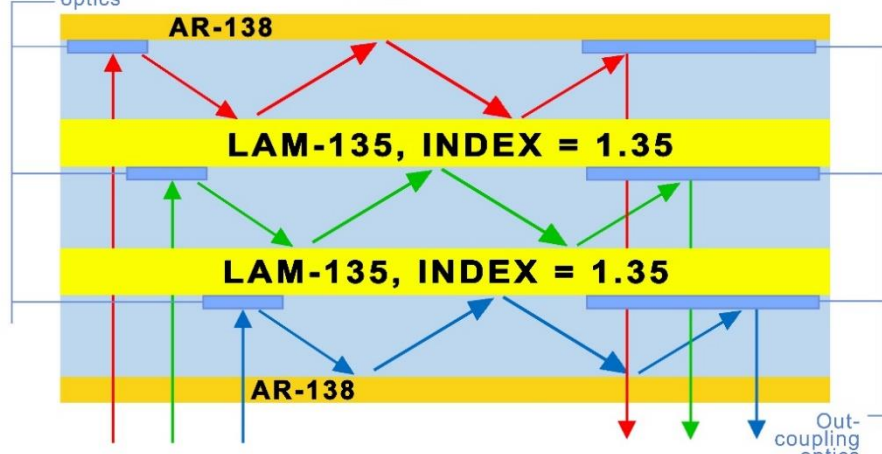
ENABLING A BREAK THROUGH QUALITY IN AUGMENTED REALITY APPLICATIONS




LAM-135
index-1.35





In-coupling optics



Out-coupling optics





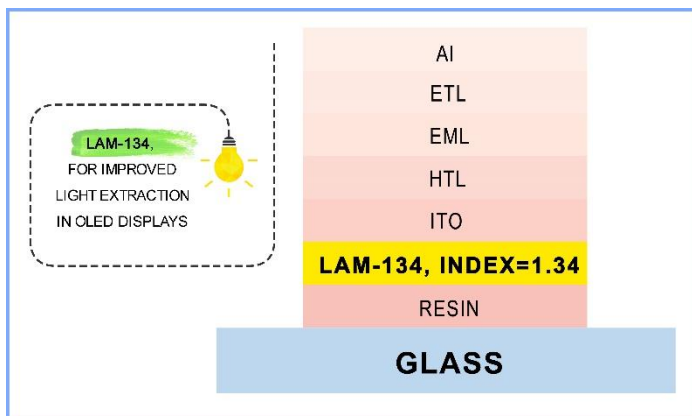


LAM adhesives can also be used as a low index layer, or Low Index grid, for improved light extraction in OLED displays.

The LAM adhesive enables construction of integrated back-light units (BLU), where the PMMA light guide can be bonded into adjacent films (e.g., the diffuser film, the reflector film, lens array films, etc.)

Another application is to bond an optical touch screen module to the face of an OLED or an LCD module. For example, it is possible to bond a FTIR (Frustrated total Internal Reflection) touchscreen to the OLED or LCD module.

To the right: A layer (or grid) of LAM-134 can significantly improve the light extraction from an OLED display.



The following table lists the major properties of the LAM adhesives, as well as our other very low index adhesives and coatings that can be used in similar applications, where adhesion strength can be lower than the adhesion levels offered by the LAM product line.

	RI at 589 nm (cured)	Cure	Adhesion gr/cm	Viscosity CPS	Shelf Life (months)
LAM-134	1.347	UV	360	3500	12
LAM-135	1.353	UV	750	3500	12
LAM-136	1.359	UV	1200	2800	12
MY-132-V15k	1.327	UV	40	14500	12
MY-133-EA	1.338	UV	27	2300	6
MY-133-MC	1.330	MC	NA	400	6
AR-138	1.389	MC	NA	150	6

The LAM products have multiple applications in both OLED and LCD displays: Low index grid; integration of back-light units; attachment of optical touch screens, etc.

About MY Polymers Ltd.

Distinguished by its total focus on low refractive index materials, **MY Polymers** is a leader in this field.

MY Polymers has been active in the field of Low Refractive Index Optical Coatings Adhesives and Polymers since 2004. The company develops, produces, and sells primary coatings for optical fibers, recoating materials, optical adhesives, bio-photonics materials, anti-reflective coatings, and various other low index polymers, coatings and adhesives.

MY Polymers is ISO certified. We serve the global Photonics and Electronic Display industries, with customers in North America, Asia and Europe.