

3M Optical Systems

Vikuiti™ Durable Enhanced Specular Reflector—Metal (DESR-M)



Ultra-high Reflectivity



Vikuiti™ DESR-M consists of DESR—Durable Enhanced Specular Reflector laminated on a metal substrate (stainless steel or aluminum). Vikuiti DESR-M provides a mirror-like ultra-high reflectivity effective over the full visible spectrum and all incident angles. A UV protective coating on the reflective side increases the lifetime of Vikuiti DESR-M by minimizing color change. Vikuiti DESR-M enhances the brightness of LCD panels when applied to the lamp reflector by increasing the light extraction from the bulb cavity. Multiple substrate formats allow for custom design possibilities. Vikuiti DESR-M can be used in combination with other Vikuiti™ Display Enhancement Films for even greater performance results.



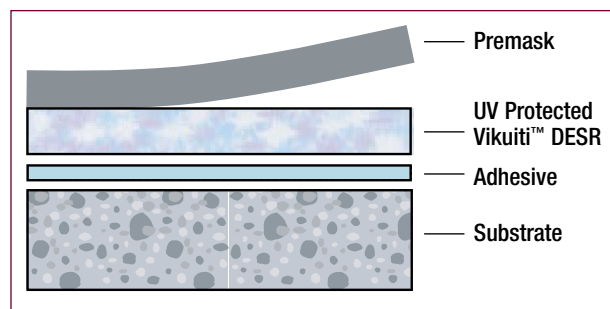


Vikuiti™ Durable Enhanced Specular Reflector—Metal (DESR-M)

How it works

Vikuiti DESR-M is laminated to a substrate providing an ultra-high reflectivity mirror, effective over the full visible spectrum and most incident angles. Vikuiti DESR-M enhances display brightness by up to 10% and increases display color uniformity by improving bulb cavity light extraction. A UV protective coating is applied to improve long term environmental stability. Multi-substrate (stainless steel, aluminum, plastic) format allows for more custom design properties substrate.

Vikuiti™ DESR-M construction



Nominal physical characteristics

Film properties	Vikuiti™ DESR-M
Film thickness	392 microns (0.3mm aluminum) 592 microns (0.5mm aluminum) 192 microns (0.1mm stainless steel)
% Reflectivity 400-800 avg.	>98%

The technical data for the products described are typical, based on information accumulated during their life, and are not to be used in the generation of purchase specifications which define property limits rather than typical performance.

System optical performance

Film Configuration	Axial Luminance (cd/m ²)	Maximum Luminance (cd/m ²)	Integrated Intensity (lm/m ²)	Horizontal Viewing Angle (°)	Vertical Viewing Angle (°)
Standard	249.4	256.1	386.8	51.0	35.5
Vikuiti™ DESR-M	284.0	292.6	438.6	50.0	35.5
% Improvement	13.9%	14.3%	13.4%		

System optical data was taken on a commercially available LCD notebook with a standard bulb reflector and compared with a Vikuiti DESR-M reflector using an autronic-MELCHERS conoscope. The notebook was measured at standard factory settings. Luminance increase depends on the backlight material composition, design and overall lighting efficiency.

Brighter

brighter

Environmental performance

Optical and physical properties stable under these test conditions:

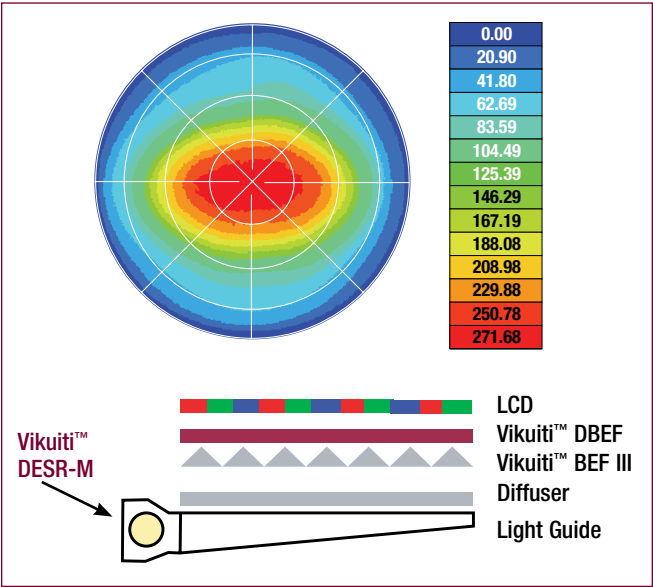
Cycle	Environment/Duration
Cold Temperature	-35°C, 1,000 hours
Hot Temperature/Dry	85°C, 1,000 hours
Hot Temperature/High Humidity	65°C/95% RH, 1,000 hours
Thermal Shock	-35°C to 85°C, 100 cycles, 1 hour

Testing

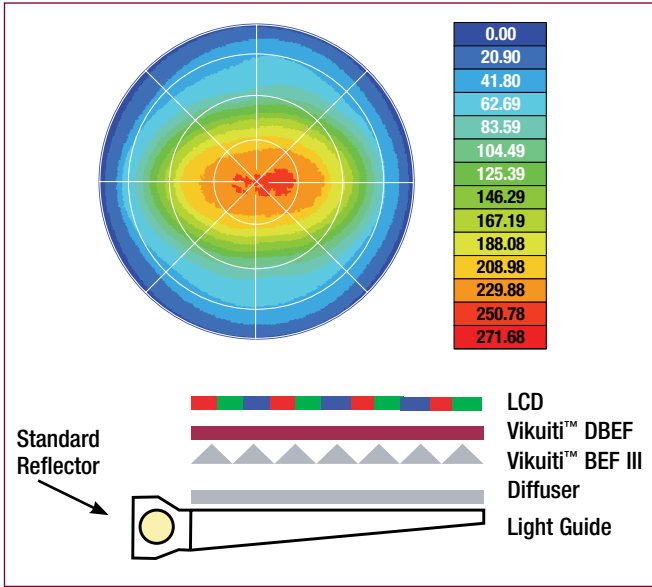
These polar plots were obtained through testing Vikuiti™ DESR-M Reflector in a commercially available notebook computer. The notebook was measured at standard factory setting on an autronic-MELCHERS GmbH conoscope.

We believe these measurements and reporting techniques clearly and concisely represent the benefits of Vikuiti DESR-M while providing results that are readily compared to similar notebook computers.

System + Vikuiti™ DESR-M



Standard System





Important Notice to Purchaser

The following is made in lieu of all warranties, express or implied, including any implied warranties of merchantability or fitness for a particular purpose. 3M warrants that, at the time of shipment, product will meet 3M's published specification or that specification agreed in writing between 3M and purchaser. Should product not meet specifications at time of shipment, 3M will replace or refund the purchase price of such quantity of the product found not to meet specifications. Purchaser shall determine the suitability of the 3M product for purchaser's application. 3M shall not be liable under any legal theory, including in contract or in tort, for any injury, loss, or damage, whether direct, indirect, incidental, special or consequential, arising out of the use of or the inability to use the product. **The warranties and remedies set forth herein are purchaser's sole and exclusive warranties and remedies.**

3M

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3M.com/displayfilms

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