

# 3M Glossy Low Reflection Protection Film (GLR320)

Technical Data Sheet

April, 2014

**Description** 3M™ Glossy Low Reflection Protection Film uses 3M's coating technology to provide durable protection, reflection reduction for a clear image, with a residue-free, self-wetting adhesive for application on electronic displays.

**Applications** 3M Glossy Low Reflection Protection Film is typically used to provide display protection and viewing enhancement for electronic displays, especially in environments where bright light conditions typically disrupt display readability.

The low reflection front surface enhances the viewing experience by reducing ambient light reflection. By providing a durable hardcoat barrier between the display surface and the user or environment, 3M Glossy Low Reflection Protection Film helps protect against scratches and damage to the display. The residue-free adhesive technology gives an easy-to-apply and easy-to-remove application experience for the user.

**Protection Effectiveness** 3M Glossy Low Reflection Protection Film uses 3M's coating technology to provide a durable hardcoat barrier between the display surface and the user or environment. Providing this hardcoat on an easy-to-apply, easy-to-remove film enables the renewal of a display surface by a simple replacement of the top film.

**Typical Properties** Technical information provided consists of typical product data and should not be used for specification purposes. Unless otherwise noted, all tests are performed at room temperature.

Property	Typical Value	Test Method
Transmission	96%	ASTM D1003-11 <sup>11</sup>
Haze	0.6%	ASTM D1003-11 <sup>11</sup>
Clarity	99.9%	ASTM D1003-11 <sup>11</sup>
Reflection	1.9%	ASTM E1164-09a
Gloss (20 <sup>0</sup> , front surface only)	40	ASTM D523-08
Thickness	0.13 mm	ASTM D3652/D3652M-01
Steel Wool Abrasion	Light scratching, 50 g/cm <sup>2</sup> , 10 rubs, #0000 steel wool	3M TM-095
Pencil Hardness	3H (200g)	ASTM D3363-05
Chemical resistance	Bleach, MEK, IPA, Acetone, Window Cleaner, Motor Oil, Cola, Coffee, water insoluble marker, water	3M TM-118
Water contact angle (hydrophobic)	95 degrees	ASTM D7734-08
Hexadecane contact angle (oleophobic)	55 degrees	ASTM D7734-08

Environmental Conditioning	Visual Evaluation
Heat (85°C for 500 hours) Cold (-40°C for 500 hours) Humidity (60°C/90% RH for 500 hours) Thermal shock (85°C to -40°C for 1 hour each, 100 cycles)	No Significant change when observed with the unaided eye

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## Product Features

- Durable hardcoat for long lasting display protection and the screen protector stays looking good longer
- Non-conductive, near color-neutral low reflection surface treatment
- Crystal clear glossy coating to maintain a display clarity
- Low tack, easy to apply and remove adhesive
- Scotchgard™ easy-to-clean hydrophobic and oleophobic surface

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## Shelf Life & Storage (prior to application)

Material should be stored in its original packaging, laying in a horizontal orientation, away from direct sunlight. Heavy objects should not be placed on top of it to avoid damaging the product. Ambient temperature and humidity should be controlled to 10-30°C at 30-60% relative humidity.

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## Availability

For availability, please contact our customer service group at 1-800-553-9215 or visit our website at [www.3m.com/displayenhancement](http://www.3m.com/displayenhancement)

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## Important Notice

**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.**

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**3M**

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