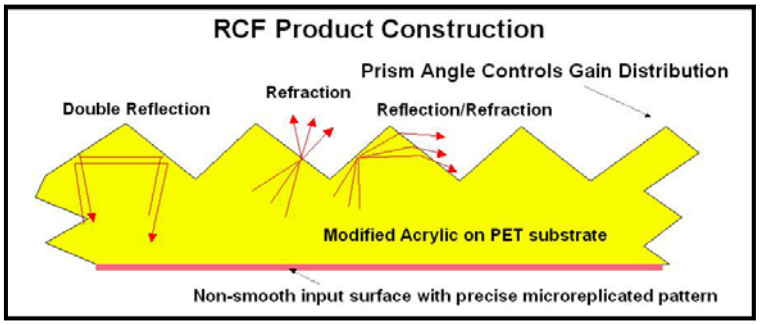
Reflexite® Collimating Film
RCF90N Mobile Display Solution

RCF Mobile Display Solution is an optical film that is used to condition the light output of a transmissive LCD. This product is 65% thinner than our standard product. RCF Mobile Display Solution is designed for applications such as mobile phones and Personal Digital Assistants (PDAs) or similar small LCD products, where space and weight requirements are most critical.

RCF collimates the light that comes out of the backlight through the LCD and toward the viewer. Backlights can be comprised of edge-lit lightguides, or backlit lightguides. These backlights use reflectors and diffusers to direct the light towards the LCD. RCF recycles the light that enters the film at oblique angles by means of total internal reflection and reflection/refraction. The light that leaves the film is well collimated.

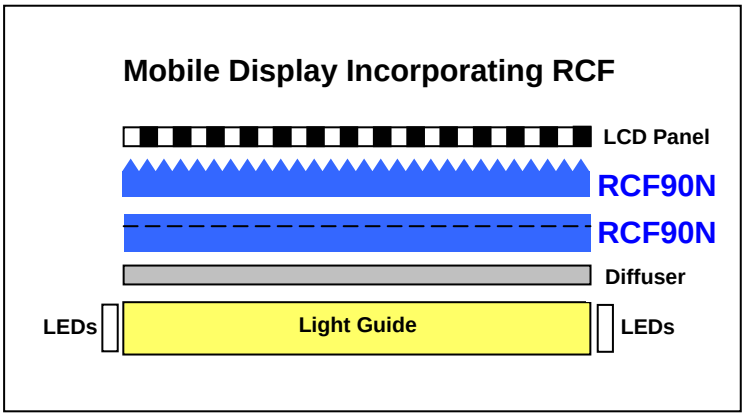


RCF features precise prisms on one side and a microreplicated, non-smooth surface on the other side (patents pending). The benefits of using RCF include a brighter backlight module and increased battery life.

In addition to these benefits, the non-smooth back surface also reduces Newton Rings, reduces wetout (when RCF contacts other films) and increases the stability of the film.

RCF does not create more light, it effectively manages the available light.

Below is an example of how RCF is incorporated into a cellular phone. One piece of the RCF90N is placed directly on top of the lightguide diffuser. A second piece of the RCF90N is then placed on top of the first piece of RCF90N with its prism structure running orthogonal to that first piece of the RCF90N.



RCF material is provided with a colored protective sheet on the prism side and a clear protective sheet on the opposite side. This material can be die cut , including all mounting features, such as holes, slots and tabs, or slit to fit your specific backlight needs.

RCF Nominal Product Properties

Part Number	RCF90N
Prism Structure	
➢ Angle	90°
➢ Pitch	48 µm
Material	
➢ Prism Side	Proprietary Acrylic Resin
➢ Substrate	Polyester
➢ Non-Prism Side	Proprietary Acrylic Resin
Thickness	61 µm

Performance and Brightness Improvements

Handheld LCD applications typically utilize two crossed sheets of RCF. Our tested performance and brightness improvements[1,2] are shown in the following table.

Peak Brightness Improvement	
➢ Crossed Sheets	162%
½ Brightness Angle	
➢ Vertical	±23°
➢ Horizontal	±24°

Environmental Aging - 1000 hours (Values for standard thickness product)

Environmental Data, Crossed Sheets	Chromaticity		Average Delta Gain[1,2]
	Δx	Δy	L
-30°C	<0.000	<0.000	-0.01
85°C/95% RH	+0.003	+0.003	-0.04
85°C	+0.002	+0.003	-0.03
-30°/85°C (100 cycles)	+0.003	+0.003	-0.03

1) The data was obtained from 13 point uniformity testing of a backlight with diffuser materials and RCF.
2) RCF luminance depends on the backlight material composition, design, and lighting efficiency.

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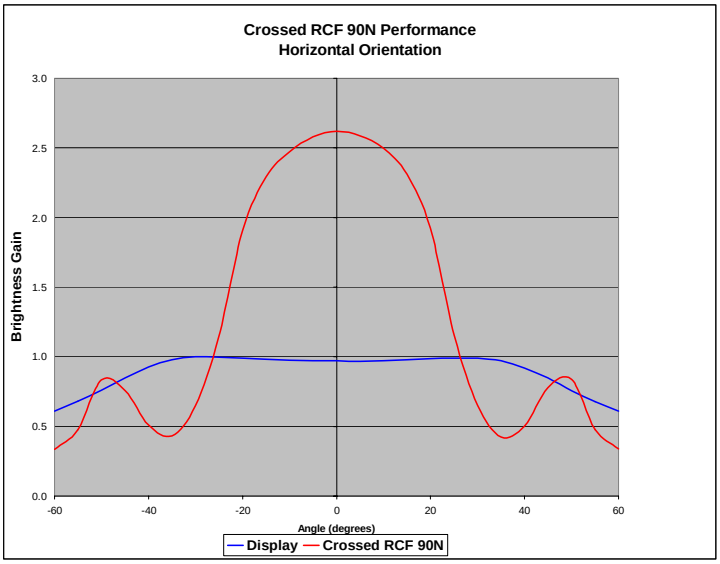
Photometric Performance



For ordering information or additional technical information please email display.optics@reflexite.com, visit our web site www.display-optics.com or call our sales department at 585-647-1140, ext. 1114.

Reflexite Corporation's business is the Management of Light®. We combine optical engineering, microreplication and polymer processing technologies to provide differentiated products to customers worldwide. At Reflexite Display Optics, a division of the Reflexite Corporation, we develop, market and sell microstructured optical films for the Display Industry.

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