

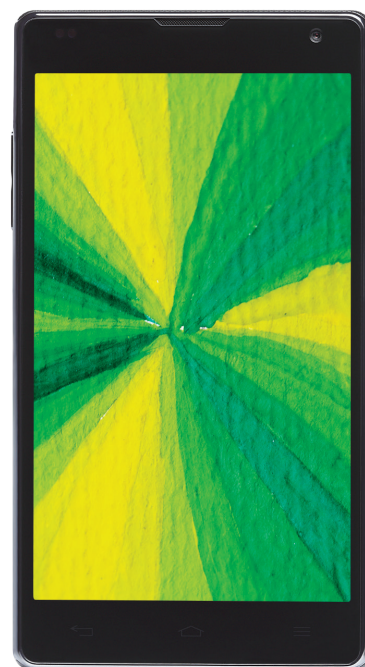
3M™ Contrast Enhancement Film

CEF29XX Series

- Good conformability for non-UV process OCA

Product Description

3M™ Contrast Enhancement Films (CEF) are specialized optically clear adhesives offering excellent clarity and adhesion to various transparent display substrates. 3M™ CEF29XX is recommended for applications that require soft CEF for direct LCM bonding, ITO compatibility and high adhesion. No UV curing required.



Construction

Product	3M CEF2904	3M CEF2906	3M CEF2907	3M CEF2908	3M CEF2910
Adhesive Type:	Acrylic	Acrylic	Acrylic	Acrylic	Acrylic
Adhesive Carrier:	None	None	None	None	None
Approximate Thickness:					
Release Liner:	50 um (2.0 mils) Clear Polyester	50 um (2.0 mils) Clear Polyester	50 um (2.0 mils) Clear Polyester	50 um (2.0 mils) Clear Polyester	50 um (2.0 mils) Clear Polyester
Adhesive:	100 um (4.0 mils)	150 um (5.0 mils)	175 um (7.0 mils)	200 um (8.0 mils)	250 um (10.0 mils)
Release Liner:	75 um (3.0 mils) Clear Polyester	75 um (3.0 mils) Clear Polyester	75 um (3.0 mils) Clear Polyester	75 um (3.0 mils) Clear Polyester	75 um (3.0 mils) Clear Polyester

The 3M family of optically clear adhesives for electronic displays are usually available in two forms. 3M OCA come in roll good form. 3M Contrast Enhancement Films (CEF) are available in die-cut form.

Typical Physical Properties and Performance Characteristics

Note: The following technical information and data should be considered representative or typical only and should not be used for specification purposes.

Peel Adhesion:

ASTM D3330 modified, 180 degree peel from float glass, 1 cm wide peel strips, 12 in/min (305 mm/min), 2.0 mil polyester backing, CEF29XX

Peel Adhesion to Glass		
Dwell Time	20 min dwell at 23°C/50%RH	3 day dwell at 23°C/50%RH
Units	N/cm	N/cm
3M CEF2904	11.7	12.1
3M CEF2906	11.9	13.8
3M CEF2907	12.0	14.8
3M CEF2908	15.5	15.9
3M CEF2910	16.6	17.0

Color:

Ultra Scan Pro (Hunter Lab), ASTM E308, D65/10°
3M CEF29XX on LCD glass

3M CEF2904	3M CEF2906	3M CEF2907	3M CEF2908	3M CEF2910
L* = 96.9	L* = 96.9	L* = 96.9	L* = 96.9	L* = 96.9
a* = 0.00	a* = -0.02	a* = -0.02	a* = -0.02	a* = -0.02
b* = 0.17	b* = 0.17	b* = 0.19	b* = 0.19	b* = 0.19

Refractive Index:

(+ 0.0005 Metricon measurements)

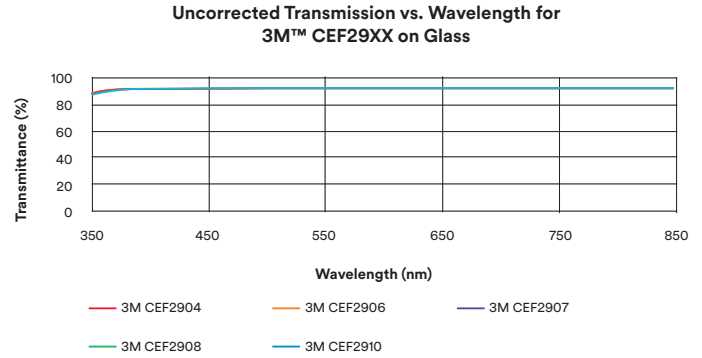
3M CEF29XX		
405 nm	532 nm	633 nm
1.4892	1.4772	1.4726

Haze:

Haze is measured according to ASTM D1003-92.
3M CEF29XX on LCD glass

3M CEF2904	3M CEF2906	3M CEF2907	3M CEF2908	3M CEF2910
0.1%	0.1%	0.1%	0.1%	0.1%

Transmission Curve:



Typical Electrical Properties at Room Temperature:

ASTM-D150-92, 3M CEF29XX

Dielectric Constant:

3M CEF29XX	
Frequency (kHz)	Dielectric Constant
100	4.13
500	3.73

Suggested Lamination Process

Step 1: Remove secondary liner, and then laminate 3M CEF29XX to first adherent substrate by roller at room temperature

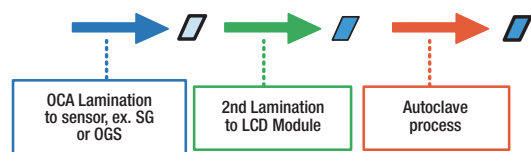
Recommendation: roller pressure 0.1 – 0.2 MPa, roller speed 0.5 – 1 m/min

Step 2: Remove primary liner, then laminate 3M CEF29XX/first adherent to second adherent by vacuum lamination

Recommendation: Vacuum condition < 50 Pa, pressure around 0.1 – 0.2 MPa

Step 3: Autoclave process

Recommendation: 30-60°C/3-5kgf/cm²/20-30min



Storage

- Store in original packaging or plastic bag.
- Avoid applying pressure or resting objects on the product to prevent marking, denting, or deforming the surface.
- Wear gloves to prevent fingerprints or nail marks when handling.



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Web 3M.com/displayfilms

- Product needs to be unpacked and handled in a clean-room facility.
- CEF should be properly stored at room temperature conditions of 22 ± 8°C and 50 ± 20% relative humidity.

Technical Information

The technical information, recommendations and other statements contained in this document are based upon tests or experience that 3M believes reliable, but the accuracy or completeness of such information is not guaranteed.

Regulatory

For regulatory information about this product, please contact your 3M representative.

Product Use

Many factors beyond 3M's control and uniquely within the user's knowledge and control can affect the use and performance of a 3M product in a particular application. Given the variety of factors that can affect the use and performance of a 3M product, user is solely responsible for user's method of application.

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