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Technical Data | November 2025

3M™ Contrast Enhancement Film CEF30XXAS Series

- 3M film CEF3002AS
- 3M film CEF3003AS
- 3M film CEF3004AS
- 3M film CEF3005AS
- 3M film CEF3006AS
- 3M film CEF3008AS

Product Description

3M™ Contrast Enhancement Films (CEF) are specialized optically clear adhesives offering excellent clarity and adhesion to various transparent display substrates. 3M™ Contrast Enhancement Film CEF30XXAS Series can be used in applications that require soft CEF for filling thick ink step (lens border frame), ITO compatibility and high adhesion. 3M film CEF30XXAS is UV curable and ideal for curved and bent applications.

Product Construction

Product	3M film CEF3002AS	3M film CEF3003AS	3M film CEF3004AS	3M film CEF3005AS	3M film CEF3006AS	3M film CEF3008AS
Adhesive Type:	Acrylic	Acrylic	Acrylic	Acrylic	Acrylic	Acrylic
Adhesive Carrier:	None	None	None	None	None	None
Approximate Thickness:						
Release Liner:	50 µm (2.0 mils) Anti-Static Treated Clear Polyester	50 µm (2.0 mils) Anti-Static Treated Clear Polyester	50 µm (2.0 mils) Anti-Static Treated Clear Polyester	50 µm (2.0 mils) Anti-Static Treated Clear Polyester	50 µm (2.0 mils) Anti-Static Treated Clear Polyester	50 µm (2.0 mils) Anti-Static Treated Clear Polyester
Adhesive:	50 µm (2.0 mils)	75 µm (3.0 mils)	100 µm (4.0 mils)	125 µm (5.0 mils)	150 µm (6.0 mils)	200 µm (8.0 mils)
Release Liner:	75 µm (3.0 mils) Anti-Static Treated Clear Polyester	75 µm (3.0 mils) Anti-Static Treated Clear Polyester	75 µm (3.0 mils) Anti-Static Treated Clear Polyester	75 µm (3.0 mils) Anti-Static Treated Clear Polyester	75 µm (3.0 mils) Anti-Static Treated Clear Polyester	75 µm (3.0 mils) Anti-Static Treated Clear Polyester

Note: 3M film CEF30XX is also available without anti-static treated release liner.

3M™ Contrast Enhancement Film CEF30XXAS Series

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. These results may be based on a limited sample size, and your results may vary depending on test types and conditions.

Performance in certain Environmental Conditions:

The following environmental tests were conducted in the 3M laboratory under the conditions specified without any appreciable deterioration in visible appearance (no bubbles, delamination, etc.). Sample construction is Optical glass/3M™ Contrast Enhancement Film CEF30XXAS Series/Optical glass, cured 1J/cm^2.

	Condition	Duration
High Temp/Humidity-1	+65°C/90%RH	800 hours
Thermal Shock	-40°C and +85°C (1 hour dwell, 1< min ramp time)	200 cycles

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, 3M film CEF30XXAS cured 1J/cm^2

Peel Adhesion to Glass		
Dwell Time	20 min dwell at 23°C/50%RH	3 days dwell at 23°C/50%RH
Units	N/cm	N/cm
3M film CEF3002AS	4.8	7.6
3M film CEF3003AS	8.1	11.2
3M film CEF3004AS	11.2	14.0
3M film CEF3005AS	13.7	16.7
3M film CEF3006AS	15.1	17.4
3M film CEF3008AS	15.5	17.6

Color:

Ultra Scan Pro (Hunter Lab), ASTM E308, D65/10°. 3M film CEF30XXAS on Optical glass, uncured.

3M film CEF3002AS	3M film CEF3003AS	3M film CEF3004AS	3M film CEF3005AS	3M film CEF3006AS	3M film CEF3008AS
L*= 96.9	L*= 96.9	L*= 96.9	L*= 96.9	L*= 96.9	L*= 96.9
a*= 0.03	a*= 0.03	a*= 0.03	a*= 0.03	a*= 0.03	a*= 0.03
b*= 0.18	b*= 0.18	b*= 0.18	b*= 0.18	b*= 0.20	b*= 0.20

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Refractive Index:

(+ 0.0005 Metricon measurements from standard deviation of ellipsometry) 3M CEF30XXAS Series film, uncured and cured at 3J/cm^2.

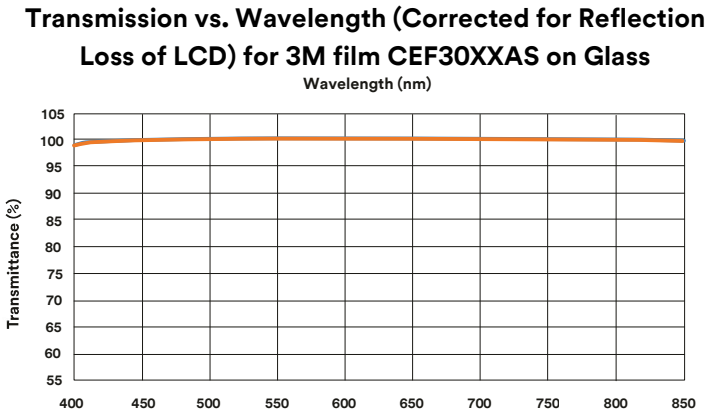
3M film CEF30XXAS			
Wavelength	405 nm	532 nm	633 nm
Uncured	1.4989	1.4862	1.4819
Cured	1.4991	1.4869	1.4818

Haze:

Haze is measured according to ASTM D1003-92. 3M film CEF30XXAS on Optical glass, uncured.

3M film CEF3002AS	3M film CEF3003AS	3M film CEF3004AS	3M film CEF3005AS	3M film CEF3006AS	3M film CEF3008AS
0.1%	0.1%	0.1%	0.1%	0.1%	0.1%

Transmission Curve:



Typical Electrical Properties at Room Temperature:

ASTM-D150-92. 3M film CEF30XXAS cured 3 J/cm^2

Dielectric Constant:

3M™ Contrast Enhancement Film CEF30XXAS	
Frequency (kHz)	**Dielectric Constant**
100	3.44
500	3.21

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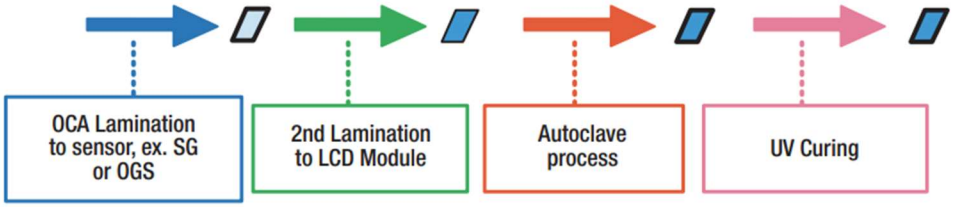
Suggested Lamination Process

Step 1: Remove secondary liner, then laminate 3M film CEF30XXAS 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 film CEF30XXAS/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
Step 4: UV curing with minimum 1J/cm2 dosage (UVA)



UV Cure Guidance

- UV range: 340-375nm (max absorption = 342nm)
- Minimum UV dosage and intensity: 1 J/cm2, 10 mW/cm2
- Suggest using lower wavelengths of the UV-A spectra
- UV source options would be Fusion D bulb and med pressure Hg
- LED sources, which output at longer UV-A wavelengths would be less ideal

Storage

- 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
- Product needs to be unpacked and handled in the clean-room facility
- Product must be protected from light exposure
- Store in sealed, foil bag under -20°C to 30°C and less than 70% relative humidity. If removed from cold storage, ensure no condensation on packaging

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