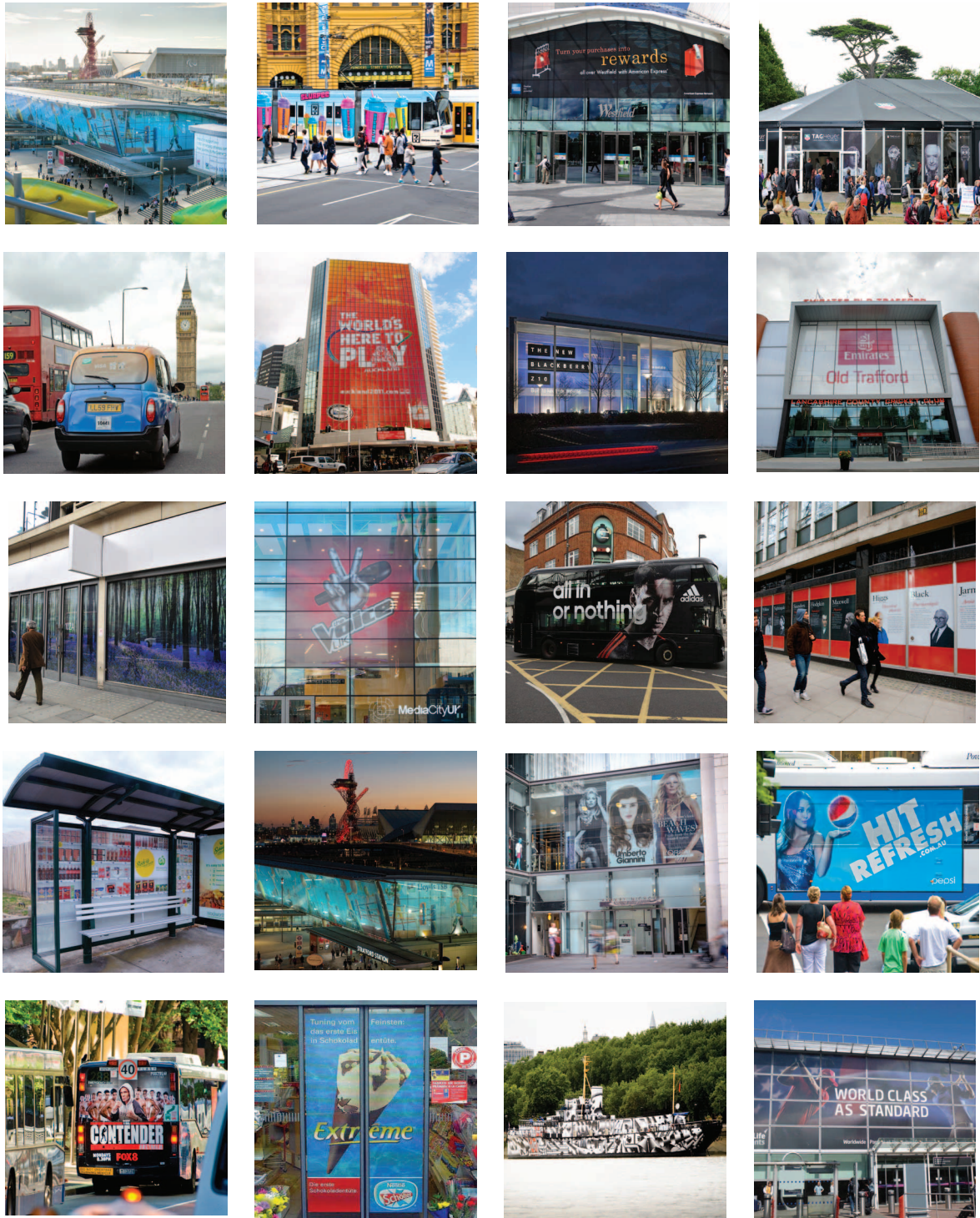


# contrAvision® Perforated Window Films



Contra Vision® Performance™

Contra Vision® Sprint™

Contra Vision® Campaign™



An introduction to Contra Vision

Contra Vision has a unique understanding of see-through graphics, having started the industry in 1985. Contra Vision has 30 inventions patented or patent-pending in the field of see-through graphics.

See-through window graphics provide advertising, branding, signs or décor that can be viewed from the outside but seen through from the inside. This eliminates the claustrophobic feeling and clutter generated by opaque window graphics, enabling those on the inside to see the view and what's happening outside. They reduce solar heat gain, glare and UV radiation and safely identify the location of glass.

A window is a very prominent and cost-effective way of advertising a company, product or service. Window graphics can enhance vehicle graphics, maximising the advertising area. Building wraps and retail window graphics capture the attention of potential customers, pedestrians and motorists at the very moment they approach a building.

The Contra Vision® Perforated Window Films range:

- is comprehensive and by far the largest on the market (see pages 10 & 11)
- is available in different levels of transparency (see pages 8 & 9)
- can be applied on the inside of a window as well as the outside (see pages 6 & 7)
- is available with or without a 'back-light' effect at night (see page 5)

The benchmark Contra Vision® Performance™ range:

- features our unique *Grayliner*™ technology (see page 4)
- is manufactured to our exacting specifications (see pages 3 & 4)
- is printable by digital inkjet, solvent, UV-cure and latex, and screen printing equipment (see pages 10 & 11)



BlackBerry Headquarters before branding, UK

BlackBerry Headquarters wrapped in Contra Vision® Performance™, UK

Perforated Window Films

Contra Vision® Performance™ products are manufactured to our exacting specifications with innovative and high-value product features to provide additional benefits to printers and end users alike. Contra Vision® Performance™ perforated window films feature 180 micron thick polymeric calendered, laminated face films for better printing, minimal shrinkage and to aid application and clean removal. The clear, solvent acrylic adhesive used on Contra Vision® Performance™ perforated window films gives easy, low temperature application, reliable adhesion and quick and clean removability when required.

Please refer to the relevant technical data sheets for more information

Face-film

Contra Vision® Performance™ perforated window films are manufactured using European-engineered polymeric vinyl. The polymeric formulation minimizes shrinkage, avoiding the exposed, dirt-attracting adhesive associated with the shrinkage of cheaper monomeric formulations. The vinyl is in compliance with European REACH requirements on the current candidate SVHC (Substances of Very High Concern). This compares favourably with some other vinyls used in the production of perforated vinyl.

Contra Vision® Performance™ White on Black products are manufactured using White on Black vinyl layers laminated together, which gives a superior, more consistent product than any alternative black coating or black adhesive method.

Contra Vision® Performance™ perforated window films feature a thick vinyl face-film, which is stronger than thinner constructions and is less likely to break up during removal, so speeding up the clean removal of the graphics.

Adhesive

A White on Black laminate enables clear adhesive to be used; the alternative construction of thinner white face-film and black adhesive can be difficult or impossible to remove in one piece and may leave a residue of unsightly black adhesive after removal.

Contra Vision® Performance™ perforated vinyls feature a proven, clear solvent-based acrylic adhesive to give reliable adhesion with clean removability for a minimum of 6 months after application and a low minimum application temperature of 5°C (40°F).





Unique *Grayliner™* technology

*Grayliner™* technology is a major, patent-pending improvement to perforated materials, unique to Contra Vision. The grey liner colour visible through the perforation holes simulates the inside of a building or vehicle so that, before application, printers and end users see a close approximation to the appearance of the applied graphics. This deters printers from compensating for the washed-out appearance of prints on a white liner by using excessive amounts of ink. It also manages end user expectations, avoiding projects being rejected because the client thinks that the whitened, pale appearance resulting from the use of a conventional white liner is how the prints will appear when applied to a window.



Liner

Contra Vision® *Performance™* perforated vinyls featuring Replacement Liner technology have better layflat properties because a Replacement Liner avoids the typical 800 linear metres per square metre of moisture-absorbing perforated paper edges of Additional Liner construction. Replacement Liner allows the adhesive to ‘wet out’ onto a flat Replacement Liner after the perforation process and so adheres better to the glass. However, Replacement Liner construction is not recommended for use with UV curing inkjet printers. Depending on the brand of ink and density of the print, “bridging” can occur over the perforated holes after removal of the Replacement Liner, in relatively dark areas of a design. This is eliminated with Additional Liner. We therefore generally recommend *Grayliner™* Additional Liner for UV inkjet printing only.

Overlamine

Perforated window film cannot be seen through if exposed to rain or other water because the water acts like a tiny lens in each hole. Contra Vision® laminating film features a transparent face-film which is designed to bridge over the perforated holes, providing protection from abrasion and washing chemicals and preventing dirt and water from entering the perforated holes.

Standards & Quality

Please note that some countries have laws or regulations requiring minimum light transmission that may limit or preclude the use of see-through graphics on vehicle windows. Self-adhesive products are not recommended for use on glass with coatings such as anti-reflective, self-cleaning and scratch-resistant, which may be damaged during film removal.

Each batch of material is examined to ensure that it complies with the agreed standards.

Contra Vision® *Performance™* products are also available in non-standard formats – roll widths, roll lengths, core sizes and hole patterns, subject to manufacturing and shipping lead times.

Backlit see-through graphics

During the hours of darkness, white on black see-through graphics suffer from ‘burn-through’ where the lights inside a building or vehicle sometimes reduce and may eliminate the impact of the graphics, if there is no or inadequate external illumination.

Contra Vision® BACKLITE™ graphics also allow daylight in and a view out, with the perforated translucent white film using existing in-store lighting to ‘back-light’ the graphics during the hours of darkness. This increases the advertising impact during the hours of darkness without increasing the energy consumption of the store. Spot or flood lights directed at the graphics from outside the field of vision effectively transform them into an illuminated sign.

A ghost reverse image of the print can be seen from the inside, although the mind will concentrate on the outside view and not the ghost image. Consideration needs to be made when using Contra Vision® BACKLITE™ graphics that any point sources of light in the observer’s eye-line will still burn through the graphics, although overall you will always see more of the graphics than with white on black material.

Contra Vision® BACKLITE™ graphics are ideal for use on the windows of convenience stores and other retail outlets which operate during the hours of darkness.



Stratford Station before branding, UK



Contra Vision® BACKLITE™ internal view out



Contra Vision® BACKLITE™ daytime view



Contra Vision® BACKLITE™ night-time view



Outside application or inside application?

Outside application

See-through graphics applied to the outside of a window normally give the maximum visual impact. They are the simplest and the most cost-effective to produce. However, there are many circumstances where exterior application see-through graphics are not suitable. The window may be prone to vandalism, the outside may have an applied film or a coating, be difficult to access or subject to planning/zoning restrictions. Rain on perforated material obscures through vision while the water remains in the holes.

Inside application

See-through graphics applied to the inside of a window are protected from vandalism, rainwater and street dirt. Access to the inside of glazing is often easier than to the outside and can enable colder weather application. Inside-applied see-through graphics are not generally suitable for use with tinted glass, which will dull the impact of the graphics.

Effective 'one way' inside application see-through graphics can be produced using Contra Vision® Performance™ clear perforated window film or Contra Vision® Sprint™ (33" x 48").

White ink is required to be able to print Contra Vision® Performance™ clear perforated window film. The design is printed reverse reading and then backed up with a layer of white ink followed by a layer of black. A white layer (without a black layer) produces backlit see-through graphics that are more visible during the hours of darkness with internal illumination.

Contra Vision® Performance™ clear perforated window film is suitable for all ink types. Please refer to pages 10 & 11 for further information.



Access to the inside of glazing is often easier than the outside.

Print-on Foam Adhesive Perforated Window Films

Contra Vision® Sprint™ does not need white ink and features a remarkable, print-receptive adhesive. Print onto the product's white adhesive face and, surprisingly, it retains adhesive properties. Apply the material inside with the printed adhesive face visible through the window so it's viewed from the outside. Contra Vision® Sprint™ is printed using low-solvent printers and is dried conventionally. Contra Vision® Sprint™ is easy to apply, relocatable, and requires no laminating or other post-print processes.

Contra Vision® Sprint™ is suitable for graphics smaller than A0 (33" x 48")

Contra Vision® Sprint™ features *Grayliner*™ technology, to give a realistic impression of how the graphics will appear applied to the window. It is available with a White on Black face-film for the production of one-way vision see-through graphics, and with a Translucent White face-film for the production of backlit see-through graphics for 24-hour visibility.

Carefully stored, Contra Vision® Sprint™ graphics can be re-used and so are ideal for repeating campaigns and for temporary signs that are used occasionally.



Short-term see-through window graphics

Contra Vision® Campaign™ Perforated Window Films are suitable for the production of short-term see-through window graphics on static applications, for example seasonal promotions or changeable point-of-purchase graphics communicating special offers or discounts.

Contra Vision® Campaign™ products feature the same high specification, clean remove adhesive as Contra Vision® Performance™ products but with a more economic, shorter durability white on black face film. The combination of this high specification adhesive and the 150 micron laminated face

film gives the best possible printing application and removal performance for this class of product.

Contra Vision® Campaign™ features a white Replacement Liner, or a white Additional Liner for UV inkjet printing.

Only Contra Vision® Performance™ Perforated Window Films are recommended for use on vehicle windows.



Percentage transparency

See-through graphics can be produced with different levels of transparency, giving different degrees of image strength and privacy, and through vision.

The transparency of see-through graphics is determined by the diameter and spacing of the holes in the vinyl. There is no right or wrong choice. Lower transparency materials create graphics with a greater impact, that can carry smaller type sizes, and give better privacy, protection from solar heat gain and UV radiation.

See-through characteristics are better with higher transparency material.

The below photographs have not been computer-generated. The degree of privacy and through-vision will vary with the light levels either side of a window. These photographs illustrate the relative levels of transparency as a basis of comparison, whereas in use the eye tends to compensate giving better through vision than can be seen in a photograph.

Other factors will determine the impact of see-through window graphics. The use of striking images with bright, contrasting colours will increase visual impact and privacy within a vehicle or building. One-way see-through graphics are only effective where there is more light on the outside (white side with image) than on the inside (black side). Backlit see-through graphics offer a solution if light levels are reversed, for example during the hours of darkness.

Please note that some countries, states or local authorities have laws or regulations specifying the level of transparency to be used on vehicle windows.

Exterior view in

Solid Vinyl

20%

30%

40%

50%

Clear Panel



Interior view out



Solid Vinyl

**20% transparency** material gives maximum vibrancy to the printed image, maximum privacy and maximum protection from solar heat gain, glare and UV radiation. The level of through-vision is still acceptable for most static applications, particularly with full window coverage.

**30% transparency** material is the standard choice for retail windows with strong image pop and good through-vision.

**40% transparency** material is the most popular option, with a good balance between image impact and through-vision, making it particularly suitable for vehicle windows and full building wraps.

**50% transparency** material is sometimes specified for use on vehicle windows as it maximises through-vision, although image impact is reduced.



Type	Application Outside or Inside	Transparency	Printing Technology	Contra Vision Product	Features & Comments
Contra Vision® one-way graphics	Outside Application	50% Transparency	• Full or low solvent or latex Inkjet • Solvent or UV Screenprint	<b>WBPRG50</b> Contra Vision® Performance™ • White on Black vinyl • Replacement Liner	Polymeric face-film for minimal shrinkage Laminated face-film for consistent printing <i>Grayliner</i> ™ for improved visual perception Replacement Liner for better adhesion and lay flat Clear solvent adhesive for reliable adhesion 180µm construction to help one-piece removal Not for UV curing inkjet printers (Short-term option (not for vehicles) Contra Vision® Campaign™ WBMRW50)
			UV curing Inkjet	<b>WBPA650</b> Contra Vision® Performance™ • White on Black vinyl • Additional Liner	
		40% Transparency	• Full or low solvent or latex Inkjet • Solvent or UV Screenprint	<b>WBPRG40</b> Contra Vision® Performance™ • White on Black vinyl • Replacement Liner	Polymeric face-film for minimal shrinkage Laminated face-film for consistent printing <i>Grayliner</i> ™ for improved visual perception Clear solvent adhesive for reliable adhesion 180µm construction to help one-piece removal Not for UV curing inkjet printers (Short-term option (not for vehicles) Contra Vision® Campaign™ WBMAW50 / 40)
			UV curing Inkjet	<b>WBPA40</b> Contra Vision® Performance™ • White on Black vinyl • Additional Liner	
		30% Transparency	• Full or low solvent or latex Inkjet • Solvent or UV Screenprint	<b>WBPRG30</b> Contra Vision® Performance™ • White on Black vinyl • Replacement Liner	Polymeric face-film for minimal shrinkage Laminated face-film for consistent printing <i>Grayliner</i> ™ for improved visual perception Clear solvent adhesive for reliable adhesion 180µm construction to help one-piece removal Not for UV curing inkjet printers (Short-term option (not for vehicles) Contra Vision® Campaign™ WBMRW30)
			UV curing Inkjet	<b>WBPA30</b> Contra Vision® Performance™ • White on Black vinyl • Additional Liner	
	Inside Application	20% Transparency	• Full or low solvent or latex Inkjet • Solvent or UV Screenprint	<b>WBPRG20</b> Contra Vision® Performance™ • White on Black vinyl • Replacement Liner	Polymeric face-film for minimal shrinkage Laminated face-film for consistent printing <i>Grayliner</i> ™ for improved visual perception Replacement Liner for better adhesion and lay flat Clear solvent adhesive for reliable adhesion 180µm construction to help one-piece removal Not for UV curing inkjet printers
			UV curing Inkjet	<b>WBPA20</b> Contra Vision® Performance™ • White on Black vinyl • Additional Liner	
		30% Transparency	• Full or low solvent or latex Inkjet • Solvent or UV Screenprint (All with white ink)	<b>CLPRW30</b> Contra Vision® Performance™ • Clear vinyl • Replacement Liner	Polymeric face-film for minimal shrinkage Replacement Liner for better adhesion and lay flat Clear solvent adhesive for reliable adhesion 180µm construction to help one-piece removal Not for UV curing inkjet printers Print design reverse-read followed by white and black layers
			UV curing Inkjet with white ink	<b>CLPAC30</b> Contra Vision® Performance™ • Clear vinyl • Additional Liner	
		20% Transparency	Low solvent Inkjet without white ink	<b>WBMSG30</b> Contra Vision® Sprint™ • White on Black vinyl	<i>Grayliner</i> ™ for improved visual perception Liner backcoated to protect adhesive Printable foam adhesive Small graphics only - do not join
			Low solvent Inkjet without white ink	<b>WBMSG20</b> Contra Vision® Sprint™ • White on Black vinyl	
		30% Transparency	UV curing Inkjet with white ink	<b>CLPAC20</b> Contra Vision® Performance™ • Clear vinyl • Additional Liner	Polymeric face-film for minimal shrinkage Clear solvent adhesive for reliable adhesion 180µm construction to help one-piece removal Print design reverse-read followed by white and black layers Part-clear liner so design can be seen from back
			UV curing Inkjet with white ink	<b>CLPRW20</b> Contra Vision® Performance™ • Clear vinyl • Replacement Liner	
		20% Transparency	• Full or low solvent or latex Inkjet • Solvent or UV Screenprint (All with white ink)	<b>CLPRW20</b> Contra Vision® Performance™ • Clear vinyl • Replacement Liner	Polymeric face-film for minimal shrinkage Replacement Liner for better adhesion and lay flat Clear solvent adhesive for reliable adhesion 180µm construction to help one-piece removal Not for UV curing inkjet printers Print design reverse-read followed by white and black layers
			• Full or low solvent or latex Inkjet • Solvent or UV Screenprint (All with white ink)	<b>CLPRW20</b> Contra Vision® Performance™ • Clear vinyl • Replacement Liner	
		20% Transparency	UV curing Inkjet with white ink	<b>CLPAC20</b> Contra Vision® Performance™ • Clear vinyl • Additional Liner	Polymeric face-film for minimal shrinkage Clear solvent adhesive for reliable adhesion 180µm construction to help one-piece removal Print design reverse-read followed by white and black layers Part-clear liner so design can be seen from back
			UV curing Inkjet with white ink	<b>CLPRW20</b> Contra Vision® Performance™ • Clear vinyl • Replacement Liner	
		20% Transparency	• Full or low solvent or latex Inkjet • Solvent or UV Screenprint (All with white ink)	<b>CLPRW20</b> Contra Vision® Performance™ • Clear vinyl • Replacement Liner	Polymeric face-film for minimal shrinkage Replacement Liner for better adhesion and lay flat Clear solvent adhesive for reliable adhesion 180µm construction to help one-piece removal Not for UV curing inkjet printers Print design reverse-read followed by white and black layers
			• Full or low solvent or latex Inkjet • Solvent or UV Screenprint (All with white ink)	<b>CLPRW20</b> Contra Vision® Performance™ • Clear vinyl • Replacement Liner	
		20% Transparency	UV curing Inkjet with white ink	<b>CLPAC20</b> Contra Vision® Performance™ • Clear vinyl • Additional Liner	Polymeric face-film for minimal shrinkage Clear solvent adhesive for reliable adhesion 180µm construction to help one-piece removal Print design reverse-read followed by white and black layers Part-clear liner so design can be seen from back
			UV curing Inkjet with white ink	<b>CLPRW20</b> Contra Vision® Performance™ • Clear vinyl • Replacement Liner	

Type	Application Outside or Inside	Transparency	Printing Technology	Contra Vision Product	Features & Comments
Contra Vision® BACKLITE™ backlit see-through graphics	Outside Application	30% Transparency	• Full or low solvent or latex Inkjet • Solvent or UV Screenprint	<b>TWPRG30</b> Contra Vision® Performance™ • Translucent White vinyl • Replacement Liner	Polymeric face-film for minimal shrinkage <i>Grayliner</i> ™ for improved visual perception Replacement Liner for better adhesion and lay flat Clear solvent adhesive for reliable adhesion 180µm construction to help one-piece removal Not for UV curing inkjet printers
			UV curing Inkjet	<b>TWPAG30</b> Contra Vision® Performance™ • Translucent White vinyl • Additional Liner	
		20% Transparency	• Full or low solvent or latex Inkjet • Solvent or UV Screenprint (All with white ink)	<b>TWPRG20</b> Contra Vision® Performance™ • Translucent White vinyl • Replacement Liner	Polymeric face-film for minimal shrinkage <i>Grayliner</i> ™ for improved visual perception Replacement Liner for better adhesion and lay flat Clear solvent adhesive for reliable adhesion 180µm construction to help one-piece removal Not for UV curing inkjet printers
			UV curing Inkjet	<b>TWPAG20</b> Contra Vision® Performance™ • Translucent White vinyl • Additional Liner	
		30% Transparency	• Full or low solvent or latex Inkjet • Solvent or UV Screenprint (All with white ink)	<b>CLPRW30</b> Contra Vision® Performance™ • Clear vinyl • Replacement Liner	Polymeric face-film for minimal shrinkage Replacement Liner for better adhesion and lay flat Clear solvent adhesive for reliable adhesion 180µm construction to help one-piece removal Not for UV curing inkjet printers Print design reverse-read followed by white layer
			UV curing Inkjet with white ink	<b>CLPAC30</b> Contra Vision® Performance™ • Clear vinyl • Additional Liner	
	Inside Application	20% Transparency	Low solvent Inkjet without white ink	<b>TWMSG30</b> Contra Vision® Sprint™	<i>Grayliner</i> ™ for improved visual perception Liner backcoated to protect adhesive Printable foam adhesive Small graphics only - do not join
			Low solvent Inkjet without white ink	<b>TWMSG20</b> Contra Vision® Sprint™	
		20% Transparency	• Full or low solvent or latex Inkjet • Solvent or UV Screenprint (All with white ink)	<b>CLPRW20</b> Contra Vision® Performance™ • Clear vinyl • Replacement Liner	Polymeric face-film for minimal shrinkage Replacement Liner for better adhesion and lay flat Clear solvent adhesive for reliable adhesion 180µm construction to help one-piece removal Not for UV curing inkjet printers Print design reverse-read followed by white layer
			UV curing Inkjet with white ink	<b>CLPAC20</b> Contra Vision® Performance™ • Clear vinyl • Additional Liner	
		20% Transparency	• Full or low solvent or latex Inkjet • Solvent or UV Screenprint (All with white ink)	<b>CLPRW20</b> Contra Vision® Performance™ • Clear vinyl • Replacement Liner	Polymeric face-film for minimal shrinkage Replacement Liner for better adhesion and lay flat Clear solvent adhesive for reliable adhesion 180µm construction to help one-piece removal Not for UV curing inkjet printers Print design reverse-read followed by white and black layers
			• Full or low solvent or latex Inkjet • Solvent or UV Screenprint (All with white ink)	<b>CLPRW20</b> Contra Vision® Performance™ • Clear vinyl • Replacement Liner	
Laminating film (optional for one-way or backlit)	Protecting Outside Application from rain and dirt			<b>CL20YY</b>	Polyester face-film for optical clarity Polyester liner for optical clarity Clear solvent adhesive for optical clarity Small graphics only
				<b>CL75PY</b>	Polymeric calendared face-film for optical clarity Polyester liner for optical clarity Clear solvent adhesive for optical clarity
				<b>CL50CY</b>	Cast vinyl face-film for optical clarity Cast vinyl face-film for compound curvature surfaces Polyester liner for optical clarity Clear solvent adhesive for optical clarity



## Licensed Products

Contra Vision Ltd owns patents and secret know-how protecting Contra Vision® products and their methods of manufacture. See [www.contravision.com/patents.html](http://www.contravision.com/patents.html). All Contra Vision® perforated window films are appropriately licensed and are easily identified by their unique features and liner branding.

This document is intended as a source of information, is given without guarantee, and does not constitute a warranty. Purchasers should independently determine, prior to use, the suitability of the product for their specific intended purpose.

Contra Vision®, Contra Vision® Performance™, Contra Vision® BACKLITE Performance™, Contra Vision® Campaign™, Contra Vision® Sprint™, Contra Vision BACKLITE Sprint™, Grayliner™ are trade marks of Contra Vision Ltd.