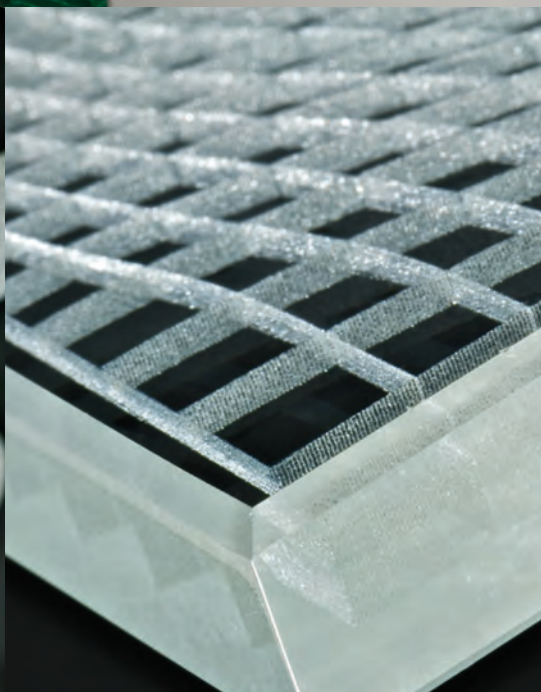
CERION laser

Laser processing of glass – innovation by CERION



Laser matted surface with illumination

CERION – international leader for glass laser engraving machines and software

Since 2002, we develop, manufacture and distribute worldwide laser machines for glass processing, 3D camera systems and image processing software. Our company is located in Minden in North Rhine-Westphalia, Germany.
Small businesses as well as large industries use our machines and processes.
Quality, innovation and customer satisfaction is our growth engine.

Project “Crystal Light”

One of the biggest so far realized by CERION laser technology projects is the rail terminal at the airport in Salt Lake City, Utah. This 400-square meter glass surface has been individually designed with a laser surface matting. The renowned designer Catherine Widgery composed the glass design for this ambitious project and chose CERION laser engraving compared to other surface processes such as digital printing or etching. A much higher brilliance could be achieved with the laser engraving according to Catherine Widgery.


Care for

Unique surface brilliance
“Crystal Light” Salt Lake City, Utah

Design: Catherine Widgery
Finish: Isophon GmbH, Glasmalerei Peters GmbH

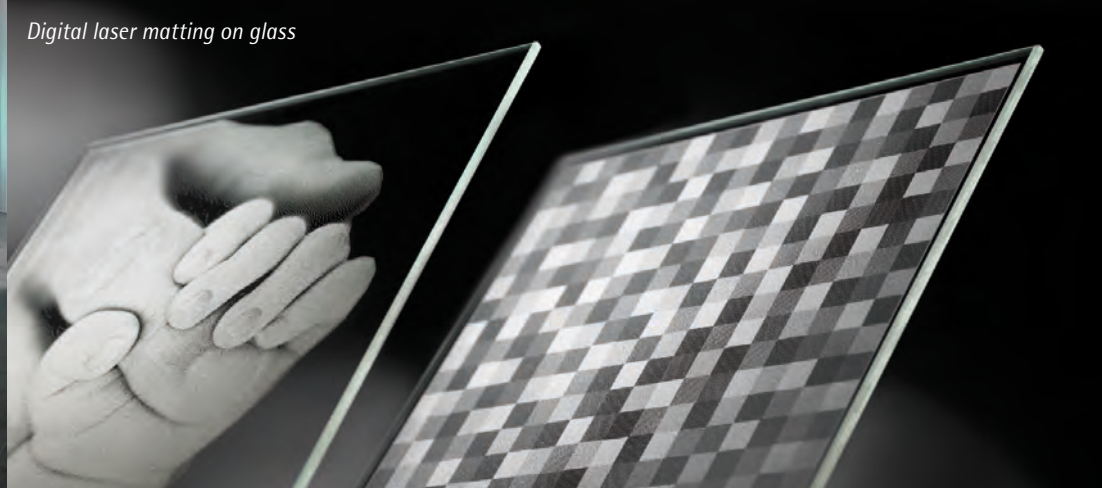
Glass wall „Haus am Gingko“
Sub-surface engraving Glasswall with LED-light in outdoor area

Motifs that float in the glass –

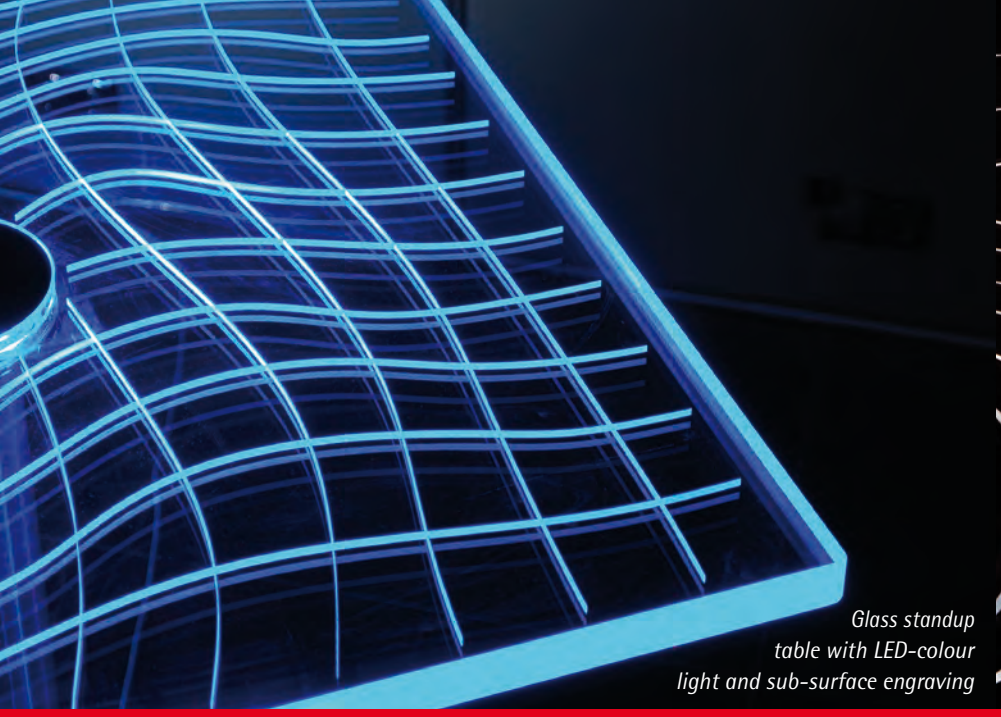
The laser sub-surface engraving allows the engraving of any graphic design, three-dimensional designs or photographs under the glass surface – contact free – without leaving a trace on the glass surface.

Glass wall with LED illumination and sub-surface engraving

School of Music Norderstedt
Glass facade with lasermatting, 300 qm



Digital laser matting on glass



Glass standup table with LED-colour light and sub-surface engraving

Low iron glass with sub-surface engraving

Designs with high brilliance on the glass surface - Glass finishing without limits

Whether fine lines, surface patterns or even detailed photos – whether as matting or stripping – all this is possible with the CERION developed surface laser engraving.

Glass furniture
Sub-surface engraving of design lamps, backwall and bar table with LED lighting

Writing in glass as sub-surface engraving

Anti-slip glass surfaces, transparent and long-lasting

Glass door (SSG) with surface engraving

Sub-Surface Engraving

To carry out the glass engraving, diode-pumped solid-state lasers are used which operate with pulsed green laser radiation at a wavelength of 532 nm. The sub-surface engraving always requires a clear, smooth and transparent glass surface so the laser beam can enter the glass unhindered. This means already frosted or textured glasses or non-transparent coatings on the glass surface cannot be used. As usually only one side of the glass is frosted or coated, the engraving can still be carried out on the other side of the glass. Already existing coatings must be tested on possible impact of the laser light. SSG or float glass, which runs through further processing into safety glass, cannot be sub-surface engraved reliable. The laser used for sub-surface engraving can also do stripping works. It is worth noting here that the glass exposed under the coating usually is not touched or destroyed, it stays clear and smooth. Thus, commercially available mirror glasses or glass with other coatings can be decoated without effecting the glass surface.

Surface Engraving / Matting

For surface finishing, we equip our machines mainly with CO2 lasers. The surface treatment with this laser can be carried out on all commercially available flat glass products without restrictions. All glass surfaces and many coatings can be structured. The glass surface will be matted by the CO2 laser beam. The matting results from a partial melting of the glass surface. Laser-glass surfaces are therefore less sensitive to fingerprints and soiling as e. g. glass surfaces, that are roughened by means of sandblasting or chemical etching. Another interesting application is the generation of anti-slip glass surfaces. On CERION machines glass and other slipper y surfaces can be processed in that way that you achieve an anti-slip effect. For glass anti-slip values of R9 and R10 are certified (German standard). These type of anti-slip glass surfaces is characterized by transparency and durability. Nothing is applied to the surface, but with the laser beam micropores are generated, which are subject to practically no wear.

Glass wall with LED light and laser engraving

Laser cut display

Laser drilling in float glass

Mirror with laserdesign, matted decoating and backlight

Cutting and Drilling

CERION also offers laser machines for drilling, cutting and three-dimensional structuring of glass surfaces. Particularly advantageous for laser cutting is the free shaping, the completely force-free process without coolant and the final quality of the edge that requires no further finishing more generally. Upon request, the edge of a cut or a hole directly in the process with a chamfer or rounding can be provided. Especially for the processing of technical glass, laser processing offers clear advantages and is increasingly interesting for the industry. The cutting edges are matt to slightly transparent – depending on the cutting process.

Stripping

Stripping can be carried out either with a sub-surface engraving laser or a CO2 laser for surface engraving. Alternatively, CERION also uses other lasers to offer the best quality and productivity depending on the type of coating. Depending on the laser method, textured coatings such as paints, mirror coatings, tempered or non-tempered enamel, LowE coatings or conductive layers can easily be removed. The CERION developed laser removal replaces lithographic and screen printing and allows a flexible and cost-effective production of printed glasses with changing styles and large and small quantities. By means of laser ablation, significantly higher resolutions and contour sharpening can be achieved than by screen or digital printing. Also samplings by means of ablation can be carried out quicker and more efficient as no additional intermediate steps are required.

Lacobel®
with laser processed
decor and back light

Stripping results of varoius materials

	Sub-surface engraving 532 nm	Surface engraving CO2	Fiberlaser 1064 nm
Mirror	clear glass surface	matted glass surface	clear glass surface
Lacobel® (paint)	clear glass surface	matted glass surface	clear glass surface
Lacobel T® (Enamel)	no good result	matted glass surface	slightly matted surface
Enamel before tempering	no good result	matted glass surface	slightly matted surface
Enamel after tempering	no good result	matted glass surface	no good result
Ipachrome®	clear glass surface	matted glass surface	clear glass surface
ITO (conductive layer)	clear glass surface	matted glass surface	clear glass surface
LowE	clear glass surface	matted glass surface	clear glass surface

Compact System c-vertica 180 – 300

Surface Engraving + Sub-Surface Engraving + Automatic Storage

c-vertica

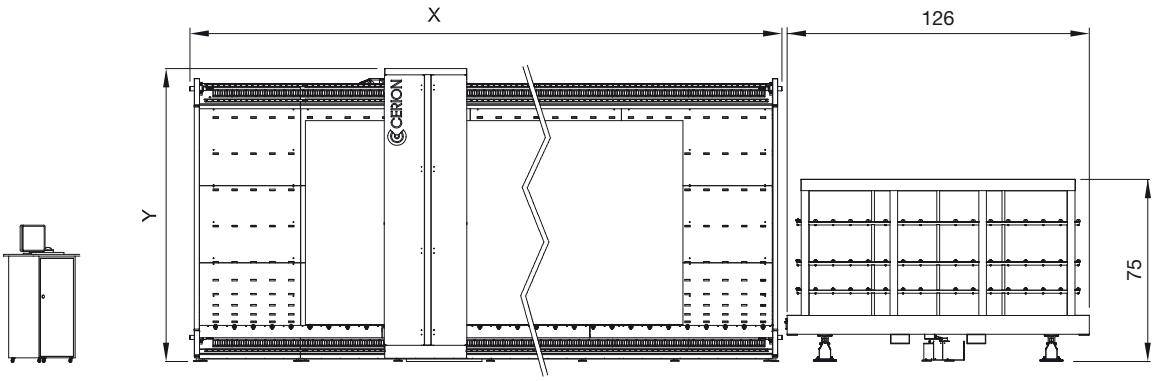
Experience an advanced laser technology and thus an infinite number of design possibilities for the processing of flat glass of all kinds with CERION! The innovative slant-bed system c-vertica processes precise designs of exceptional quality, in which fine structures can easily be reproduced.

With the c-vertica you experience a modular series of great efficiency, which mat finishes glass as well as it brings a three-dimensional structure into the interior. The optional storage magazine offers unmanned operation. Our machines are capable of engraving glass from standard door sizes up.

c-vertica 230 – 600 with Options


CERION

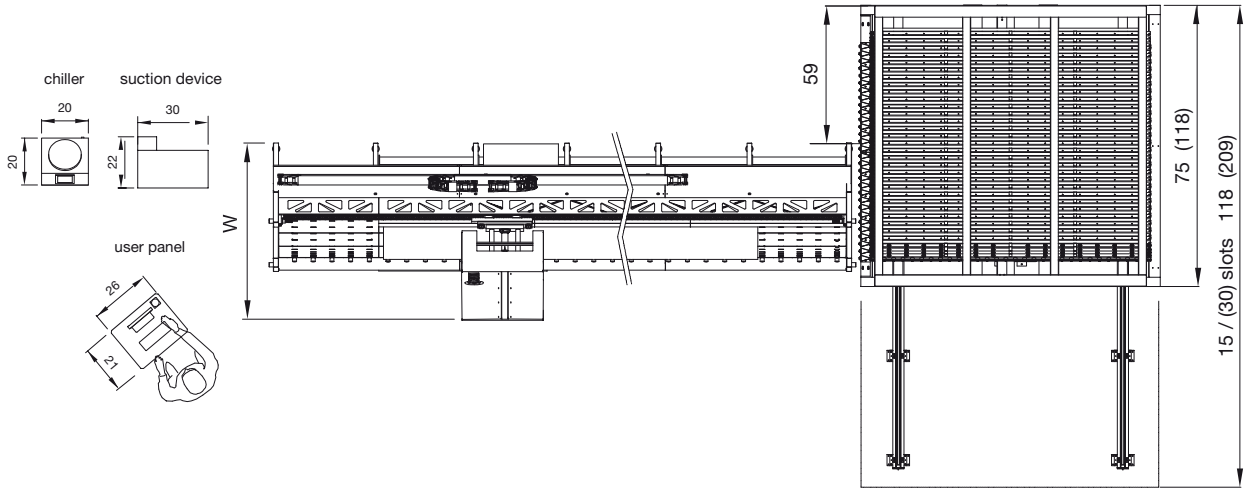
Dimensions and layout c-vertica with glass storage

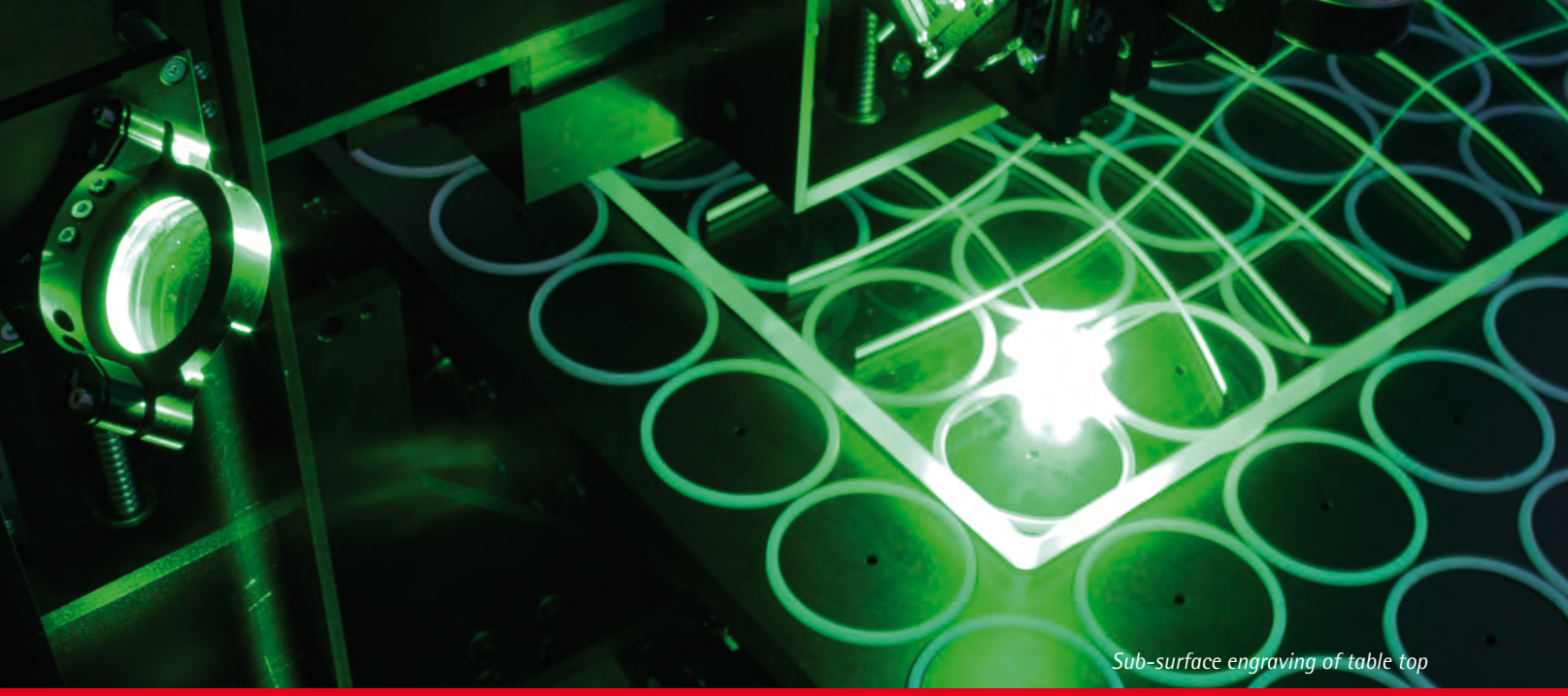


- Ideal for flat glass of all kinds
- Easy operation by one person
- Lightweight, scratch-free handling of the glass plates
- Space saving, because vertical concept
- Extremely time-efficient execution, only a single process
- Create accurate designs of high quality
- Even the finest structures are reproduced easily
- Stripping of mirrors and coatings, cutting of coatings
- Sub-surface engraving: surfaces remain intact and easy to clean
- Clean process: no ink, no granules, no chemistry
- low operating costs

Type c-vertica	130 – 250			180 – 300			230-	230-600	230-900	230-	330-	330-600	330-900	330-
	W	L	D	W	L	D	W	L	L	D	W	L	L	D
Size of Glass, max.	51	98	0.83	71	118	1.96	91	236	354	1.96	130	236	354	1.96
Processing Area:														
Laser A Surface	43	87	0.83	68	106	1.96	87	177	295	1.96	130	177	295	1.96
Laser B Sub-surface	–	–	–	68	106	1.96	87	177	295	1.96	130	177	295	1.96
Laser A + B	–	–	–	–	–	–	87	161	280	1.96	130	161	279	1.96
Machine Dimensions	Y	X	W	Y	X	W	Y	X	X	W	Y	X	X	W
	78	119	52	94	138	53	126	240	358	78	161	240	358	87

All figures in inch





Sub-surface engraving of table top

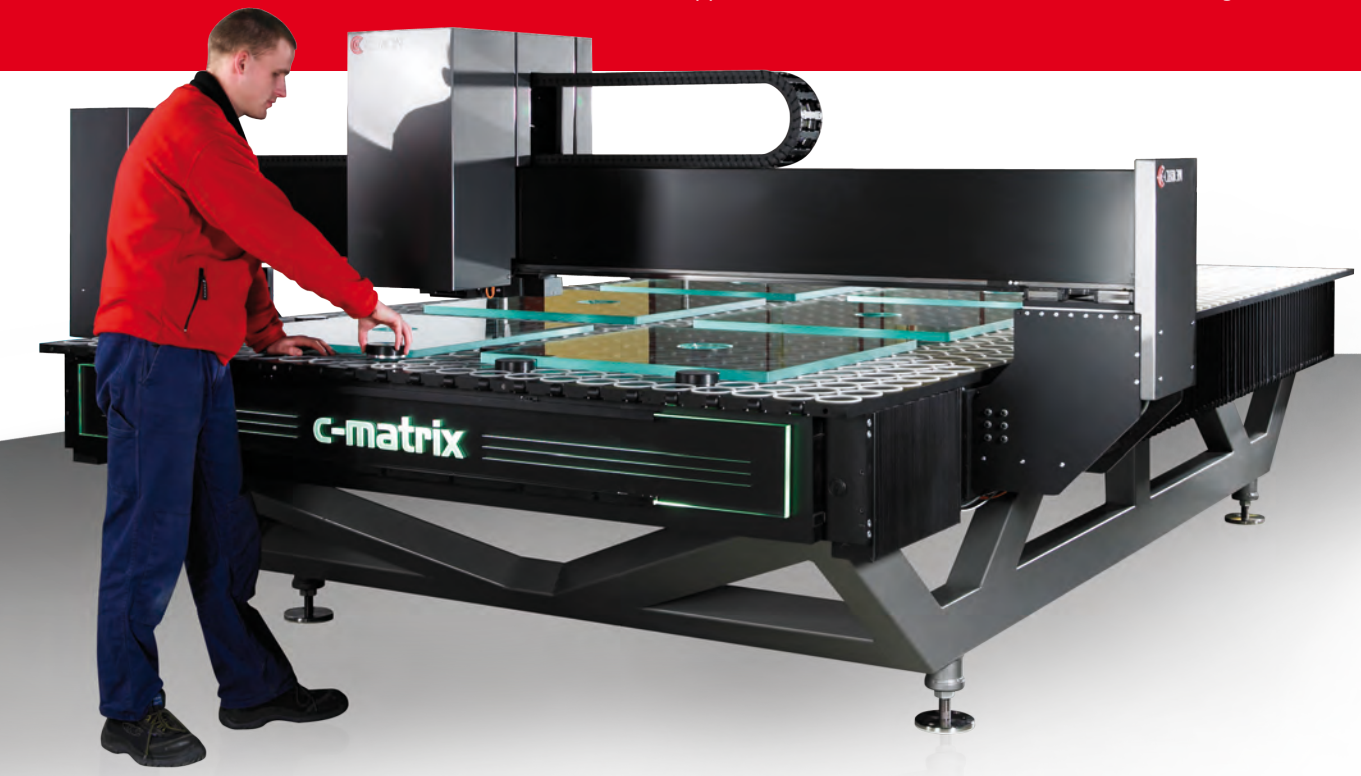
c-matrix

Flatbed machine for surface and sub-surface engraving

With the c-matrix series, CERION has developed a heavy and extremely robust machine concept. The bases are manufactured as heavy duty steel construction with machined guideways.

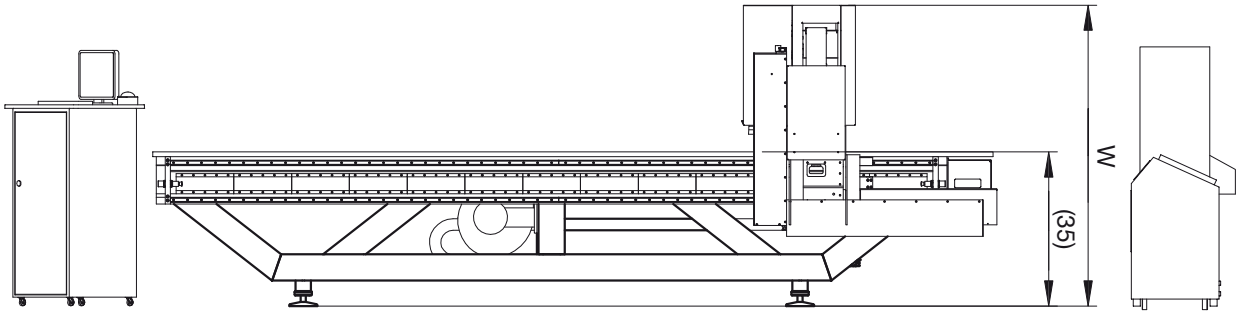
The machine table is offered closed or open construction, depending on the application focus. Wherever glass is to be processed in a horizontal orientation, this is the optimal solution. The c-matrix can be delivered as a hybrid or single-laser version.

So you can either carry out sub-surface engraving jobs with a solid state laser oruse the CO2 laser for surface processing or work with a hybrid system to carry out both applications on the same machine due to the fitting of two laser sources.



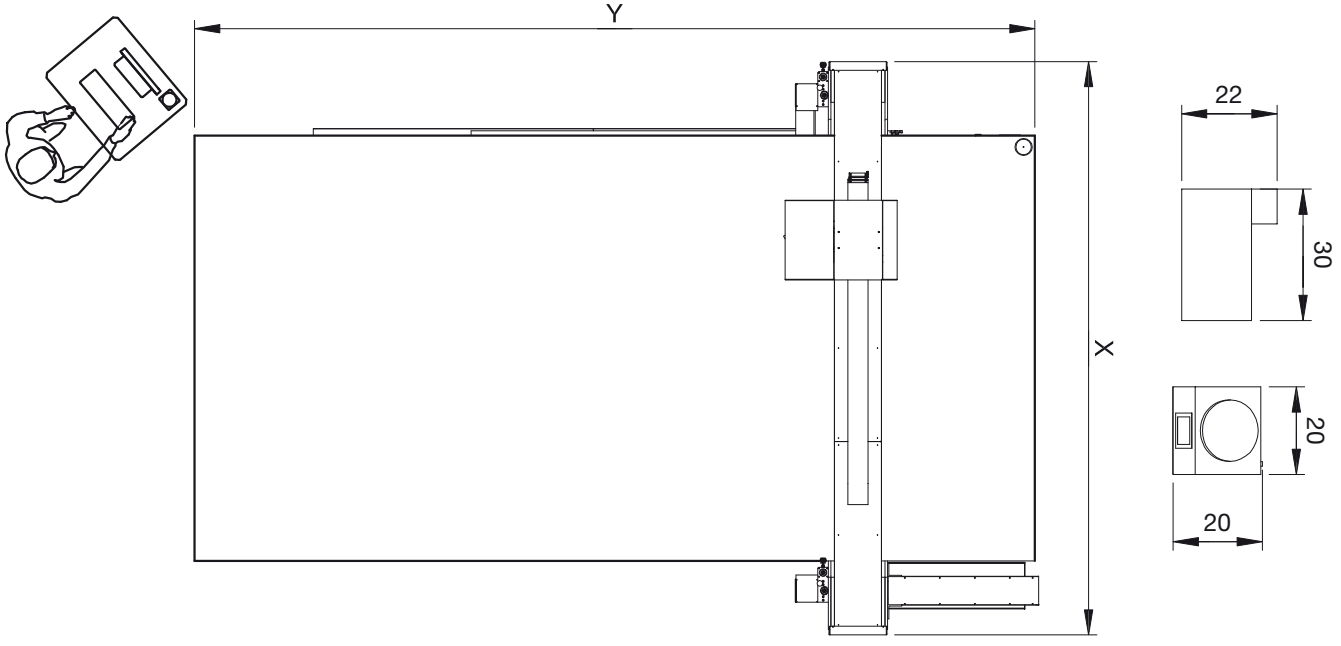
c-matrix Flatbed Machine

Dimensions and layout c-matrix



Type c-matrix	145 – 300			234 - 400			330 - 600		
	W	L	D	W	L	D	W	L	D
Size of Glass, max.	57	118	3.94	92	158	3.94	134	240	3.94
Processing Area:									
Laser A Surface	47	91	3.94	89	126	3.94	130	236	3.94
Laser B Sub-Surface	47	91	3.94	89	126	3.94	130	236	3.94
Laser A + B	–	–	–	81	126	3.94	118	236	3.94
Dimensions Machine	X	Y	W	X	Y	W	X	Y	W
	89	135	65	130	181	68	185	299	67

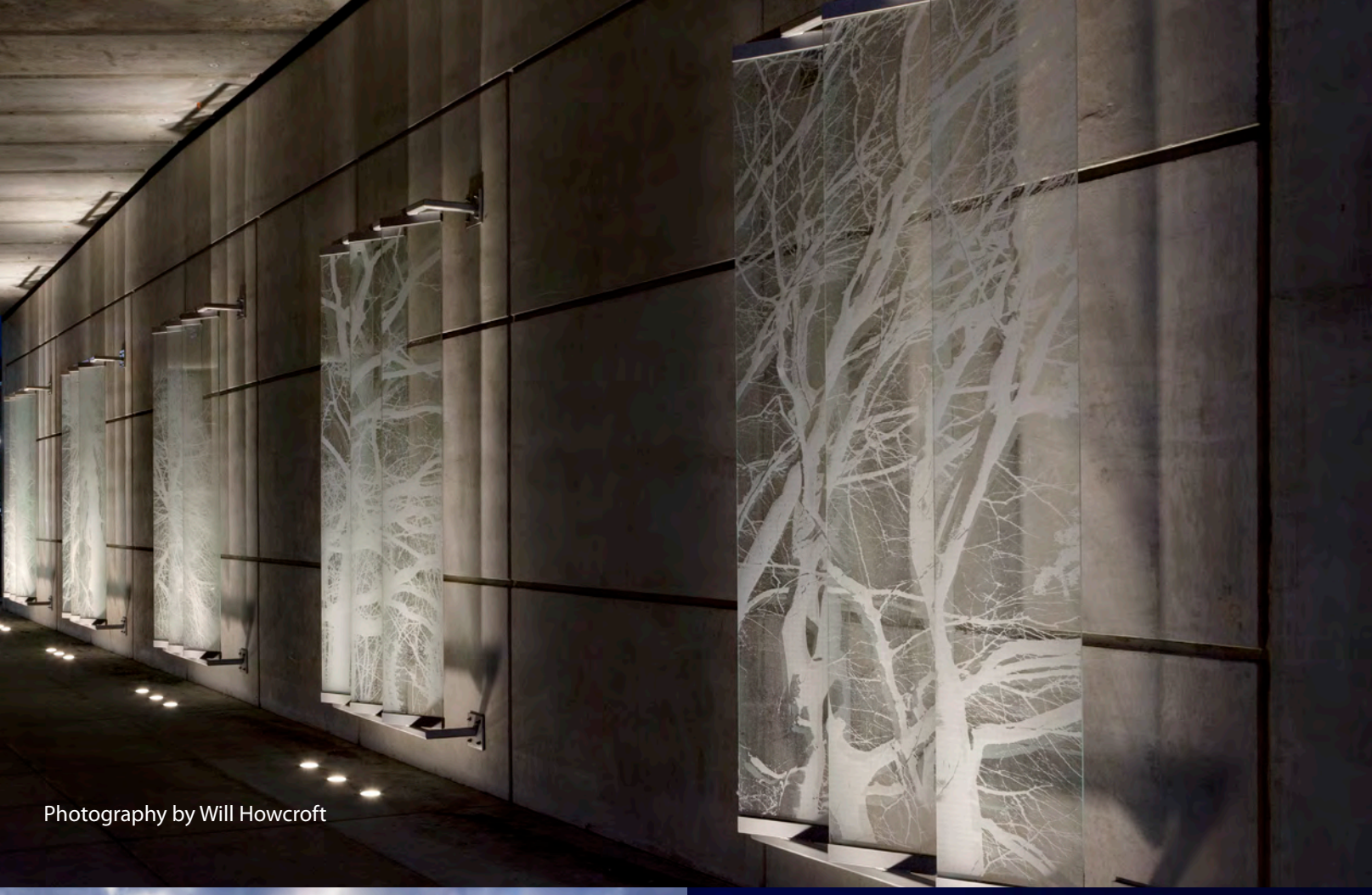
All figures in inch



Public Art Project "Arbor Winds" in Ann Arbor, MI

Photography by Catherine Widgery

Design: Catherine Widgery
Finish: Isophon GmbH, Glasmalerei Peters GmbH



Photography by Will Howcroft

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Photography by Catherine Widgery

Design: Catherine Widgery
Finish: Isophon GmbH, Glasmalerei Peters GmbH

Now in North America

We cordially invite you to visit our headquarters in Minden, Germany or our North American distributor GlassWorks in Rancho Cucamonga, California. We offer exciting product demonstrations and individual custom samples.

We are looking forward to your visit!

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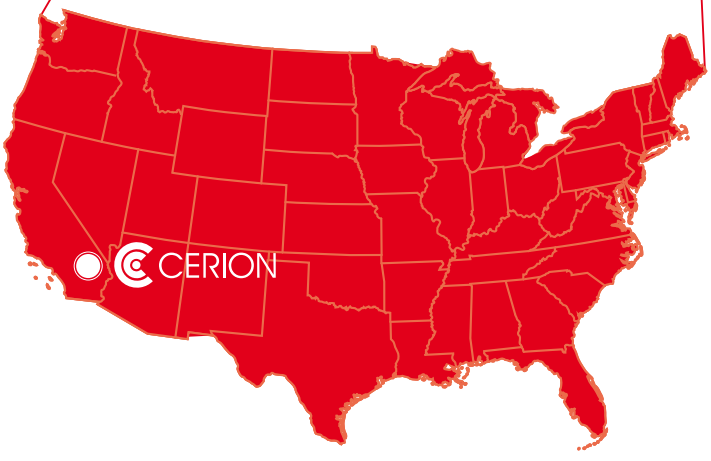

CERION laser

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