

1.4.2023 | Press Release

## ROTA-Z 90° Optical Converter for 9:16 Shooting with conventional 16:9 cameras

Up until today there is no way to shoot high-resolution portrait ratios like 9:16 without turning the camera to the side or cropping into the picture. But this ratio is getting more and more important for social media and other content.

### Rota-Z , the idea:

Uli Mors thought of rotating the picture BEFORE the sensor on the light's „Z-axis“!  
Keep the camera in horizontal position while the picture is rotated before the light hits the sensor.

Simply rotate the footage back into upright position in edit and postproduction.



### The challenge:

There is no way to rotate an image optically!

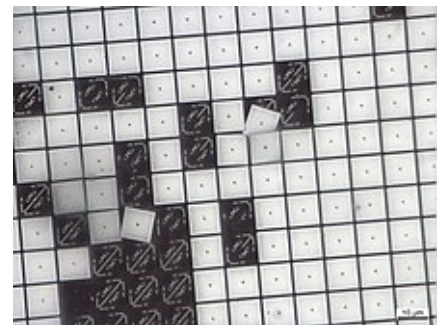
**www.morsmedia.de**  
info@morsmedia.de

## It DOES work! The “Rota-Z” adapter

### some technical background:

Did you ever see a DLP beamer? By using millions of micro-mirrors DLP beamers reflect the picture pixel by pixel. And there are HD and 4K beamers using this technology.

We use rigid micromirrors to reflect each pixel to its new position.



Mikrospiegel Array DLP  
Bild: Wikipedia

This way, up to 8 million pixels change their „position“ - in our case from upright 9:16 to horizontal 16:9.

### how it works:

The light passes the Rota-Z adapter that consists of two main mirrors. These mirrors are translucent and phase dependend.

The light goes through the first mirror and hits the second mirror with it's micromirrors. It gets reflected back and most of the pixels (mostly outer ones for longer light travel) are micromirrored to their new position.

The light beam goes back to mirror one – and because of their phaseshift (done in mirror two) they don't pass it but will be reflected back by micromirrors again – and pass due to the phaseshift mirror two.

So the light bounces back and forth two times, and hits the sensor „tilted“.

9:16 becomes 16:9!

## Rota-Z PROS:

The DLP micromirrors will not be moved at all – so they don't need to be motorized nor electrified. These mirrors are rigid in their position, simply projecting tilted into the sensor.

Generally the adapter doesn't need any external power.

(Chrosziel will produce it's PL Version with internal phase inversion lighting for better quality and less light loss, this will be powered with 3.3 V - 17 V via USB or D-Tap).

This way the adapter will be low cost and easy to use.

## Rota-Z CONS:

The light passes a translucent mirror two times, losing light each time (~ 50%).

With the PL Version (Rota-Z ultra), it's phase inversion lighting will reduce this light loss to 1 stop in total.

The budgeted EF Version will have a light lose of 2 stops.

While this sounds like a general drawback, today's cameras offer native ISOs up to 12.800 (FX6, FX3) and will easily balance out a light loss of one or two stops.

Also important: Because of the phase shift the picture will be polarized – in general most users will appreciate a polarized picture without the need of an external one.



morsmedia | Horn-Hülsberger-Str. 9 | 59387 Ascheberg

## Engineering

After Ulrich Mors patented his "Optical micro mirror unit for rotating light beams by 90° for use on film equipment", Chrosziel started to develop a prototype. The first adapter is initially based on two DLP HD mirror surfaces for the beginning.

Initial tests were conducted at Münster University of Applied Sciences (Germany) by Prof. Henning Tietz and his students of the design program (media technology department), who are currently providing feedback for further development.

## Price and shipping dates

The adapter will be introduced to the public as a working prototype (HD) before NAB on 1.4.2023 through press releases and accompanied by Teltec marketing.

Further development until the final UHD-adapter will roughly last five months, Timm Stemmann (Chrosziel) names december 2023 for final product shipping.

There is already a DLP micro-mirror manufacturer, with growing sales numbers prices will be:



### **Rota-Z Ultra** version (via Chrosziel GmbH)

**2.290,00 €**

PL Mount, Phase Inversion Lighting  
for artefact-free scaling/tilting,  
PL to E-mount , 1 stop of light loss

### **Rota-Z Budget** (OEM made by Beijing Fa.Ke.Chin.Optics)

**499,95 €**

Low price adapter without Phase Inversion Lighting,  
resulting in slightly lower optical results,  
EF to E-mount, 2 stops of light loss

All prices are retail prices plus VAT.

Any questions about the adapter? : [rota-z@morsmedia.de](mailto:rota-z@morsmedia.de)

[www.morsmedia.de/rota-z](http://www.morsmedia.de/rota-z)

[www.morsmedia.de](http://www.morsmedia.de)  
[info@morsmedia.de](mailto:info@morsmedia.de)

- 
- HD-Produktion
  - XDCAM HD422
  - Postproduktion

- Redaktion
- Realisation
- Schnitt

- Vertonung
- Animation
- Kameratrainings

- EB-Service
- Übertragung
- Livestream

**morsmedia.de**  
FERNSEH- & FILMPRODUKTION

**morsmedia** | Horn-Hülsberger-Str. 9 | 59387 Ascheberg

**[www.morsmedia.de](http://www.morsmedia.de)**  
[info@morsmedia.de](mailto:info@morsmedia.de)

**Produktionsbüro Dortmund**

morsmedia im Phoenix Labor  
Konrad-Adenauer-Allee 10  
44263 Dortmund  
T: +49 (0) 23 1 - 425 727 6

**Büro und Studio**

morsmedia - Ulrich Mors  
Horn-Hülsberger Str. 9 | 59387 Ascheberg  
T: +49 (0) 25 99 - 929 929 0  
F: +49 (0) 25 99 - 929 929 1

**Bankverbindung**

Volksbank Ascheberg-Herbern  
Kto.-Nr. 28997500 | BLZ 40069601  
Kontoinhaber: Ulrich Mors  
USt-IdNr. DE239109980