



## ProClean™ Camera

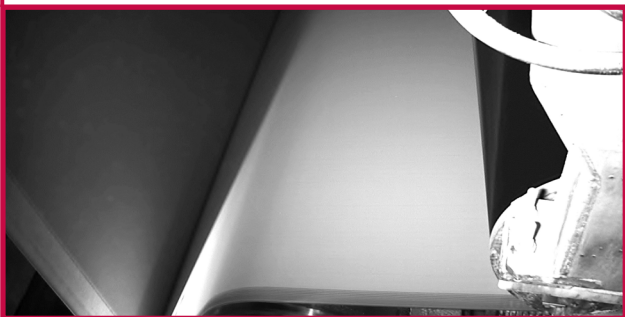
**procemex**  
Member of the ANDRITZ GROUP

### ProClean™ Camera technology keeps cameras clean

The challenge to keep the web break cameras clean is an everyday reality in all board and paper mills. Dirt in the camera's protection window make the images dark and fuzzy. The new Procemex ProClean pinhole technology guarantees that cameras stay clean 24/7 and provide sharp and clear images for operators to monitor paper defects and root causes of web breaks.

Web monitoring cameras are kept clean under harsh wet end conditions with the aid of instrument air flow. The air is blown through a 5 mm hole in front of the camera housing. As the air flow speeds up when passing the pinhole it forms a strong protection against dirt and prevents water and dirt entering the housing. The housing has no protection window that could get dirty or wear out. The camera is equipped with a dedicated pinhole zoom lens capable of viewing through a very small hole.

**ProClean Camera image taken  
on the date of system installation**



**ProClean Camera image taken  
6 months after system installation**



### Benefits

- No manual cleaning needed.
- ProClean Pinhole Cameras can be used in all paper machine locations from headbox to the reel.
- Existing standard housing can be converted into pinhole housing by changing the small nose piece.
- Low air consumption. No moving or wearing parts.
- Camera Resolution 2- 12Mpix. Always 100% visibility. Clear images from edge to edge. Procemex Smart Cameras are not limited by the network capability, as the camera processes data inside its own shell.
- 5-10 times higher shutter speeds over standard pinhole lenses. Clear images without blur caused by web movement.

**No  
cleaning  
needed**

# ProClean™ Technology

BETTER RESOLUTION • HIGHER SHUTTER SPEED • CLEARER IMAGE • MAINTENANCE-FREE • NO CLEANING

## Standard Pinhole camera vs. Procemex ProClean™ Camera

A standard pinhole camera with 1/2.000 sec or lower shutter speed can't stop paper movement properly and lacks light especially in corners of the imaging area. Procemex ProClean pinhole camera, with 1/8.000 sec shutter speed stops paper movement and has even illumination across the imaging area resulting to crystal clear images.

Procemex ProClean Pinhole camera is equipped with a dedicated pinhole zoom lens capable of viewing through a small 5mm hole. The lense is a unique purpose-built component designed to utilize available illumination better reaching 5-10 times higher shutter speeds over standard pinhole lenses.

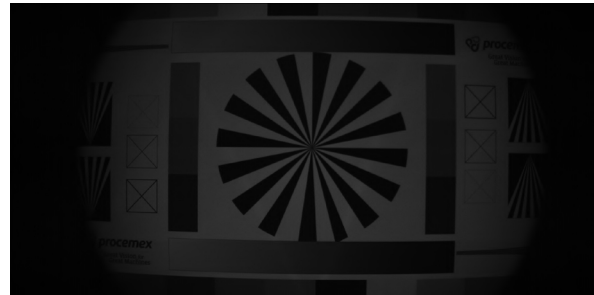
Higher shutter speed stops fast moving paper web better resulting to **crystal clear image quality**.

The benefits of ProClean Pinhole Camera are trouble-free operation, low air consumption, 100% continuous visibility and the simplicity of the concept. There are no moving or wearing parts such as wipers, electronics or controlling components.

Continuous air flow enables pinhole cameras to film undisturbed 100% over the time without washing cycles or wiper movements causing blind times during the cleaning process.

Small  
Pinhole  
=  
Low Air  
Consumption

### STANDARD PINHOLE CAMERA



### PROCEMEX PROCLEAN PINHOLE CAMERA

