

# FPGA-Camera for Soldering stations „F-Cam I1“ news (englisch)



F-Cam I1 News en (v.0.1) 10.12.10



## NEWS AND DIFFERENCES BETWEEN F-CAM 1.0 VS. 1.1

## 1. News in F-Cam

### 1.1 New function in all versions

**Gamma correction (“Gamma correct”)** is a new function in the main menu „quick select“. It change the assessment of the pixels brightness with a gamma-dependent power function. Therewith blooming of solder joints can be avoided.

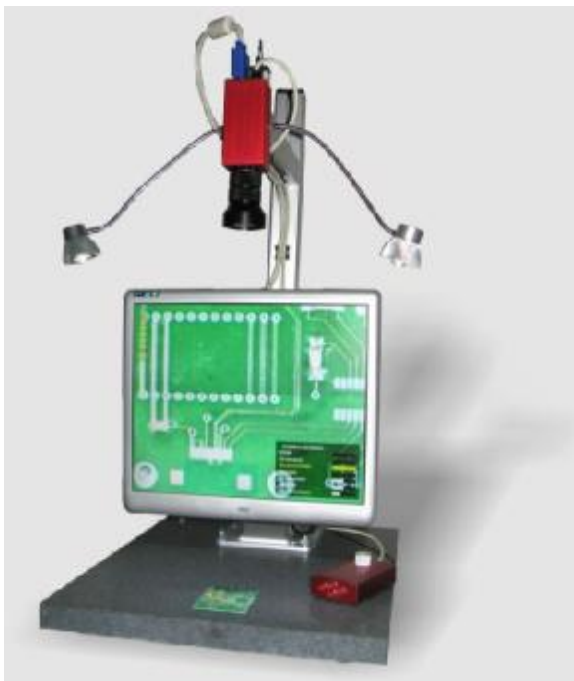
### 1.2 New LED-Lights with more Power

Instead of the 2x 1 W LED lamps were grown 2x 3 W LED lamps. In addition these lamps are not point-shaped, but stretched with lens. The result is a more powerful dimmable light with a uniform illumination.

### 1.3 Differences between F-Cam 1.0 vs. 1.1

Use of a bigger display gives 12 % more display area and more magnification. A bigger bearing area bring any cm length more of working area. In addition some image filter functions a new (see 1.3.1).

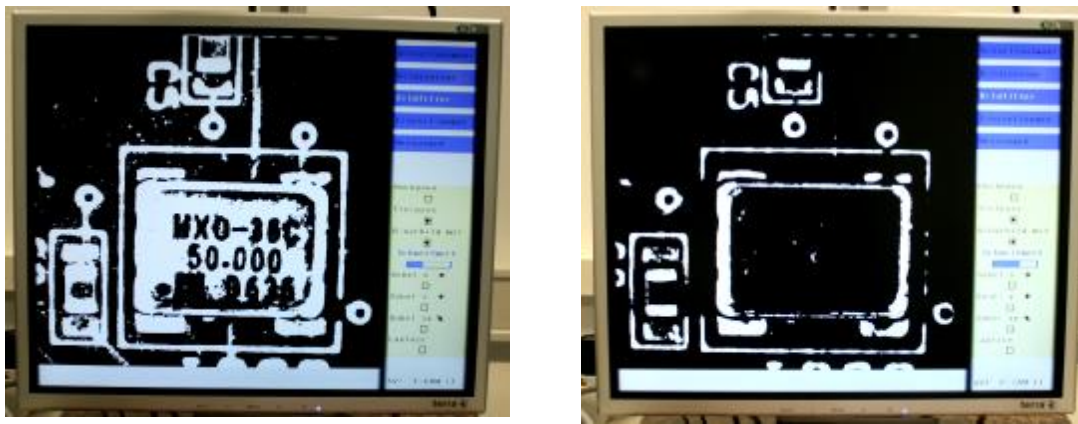
|              | <b>F-Cam 1.0</b>     | <b>F-Cam 1.1</b>     |
|--------------|----------------------|----------------------|
| Display      | 17“ / 43 cm diagonal | 19“ / 48 cm diagonal |
| Image area   | 27 cm x 25 cm        | 30 cm x 28 cm        |
| Bearing area | 50 cm x 40 cm        | 55 cm x 40 cm        |



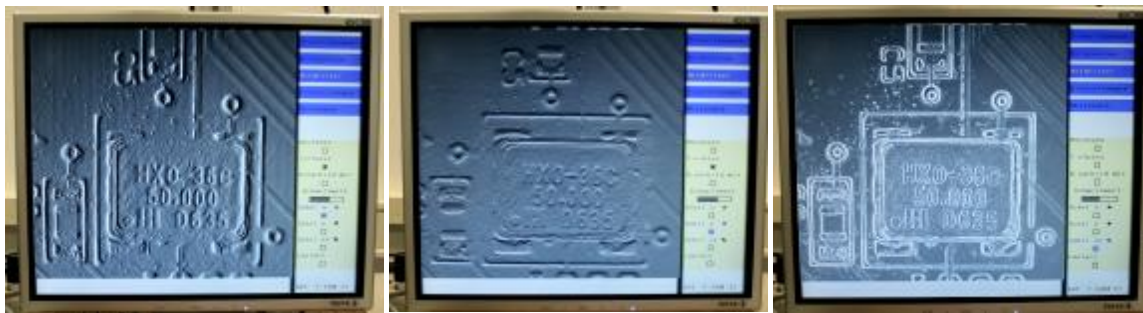
### 1.3.1 New filter functions

Additional electronic filters in the menu “image filters” are made to help seeing more differences in the image like Labels, wires on printed circuits etc. These new filters are:

**Binary image with threshold** realize the function to change the video image into a binary image (black-and-white image) in real-time. The **threshold** can be changed to see differences between dark grey and a little lighter grey like black label on black integrated circuits. The two images show the result of two different threshold values.



**Sobel x, y und xy** filter the video image with a Sobel-filter in x- and y-direction or rather calculate the modulus from x- and y-direction to better see edges like wires on printed circuit boards in real-time.



**Laplace** realizes an all direction Laplace-filter of the video image in real-time.

| date     | version | Change        |
|----------|---------|---------------|
| 10.12.10 | 0.1     | First version |
|          |         |               |
|          |         |               |