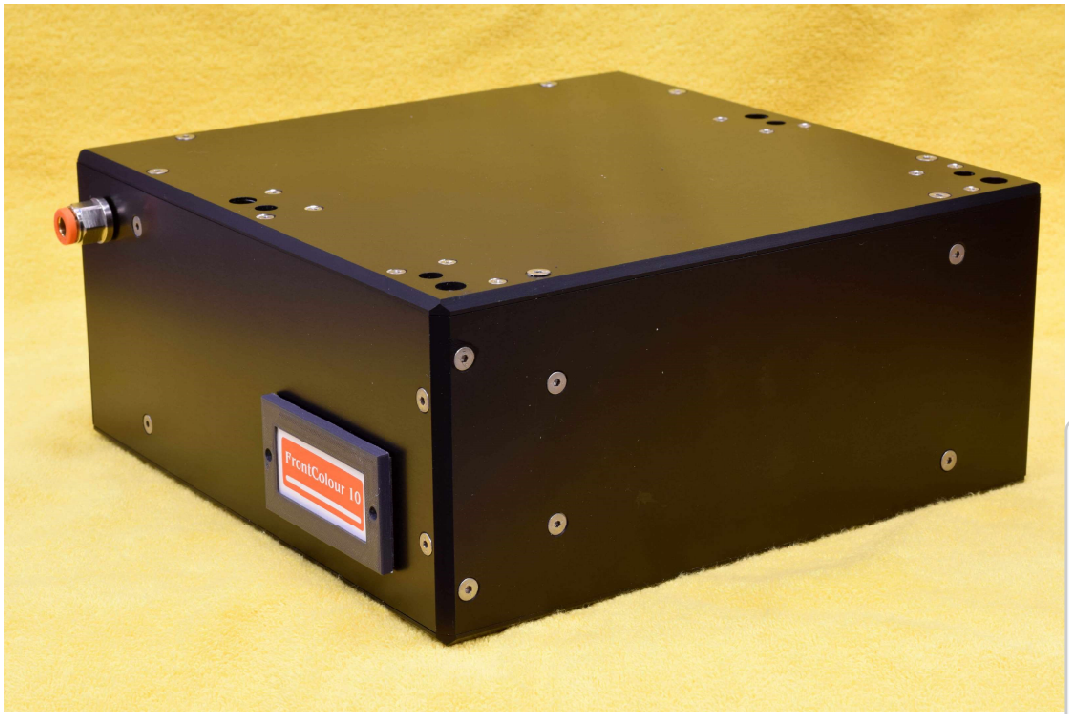


Model FrontColour 10

On-line colour meter

A colour sensor for measuring material colour continuously in production machines or in laboratory

APPLICATIONS IN:

- ➤ plastics, pulp, pigments and paints, printing, papers, textiles, most solid and fibre materials
- ➤ control of pigment / dye feed
- ➤ Pilot machines, research and pigment studies
- ➤ production QC

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Rev 6 specifications

What would you expect to have in your portable surface colour meter for thick materials?

- Good reliability
- Simplicity of use
- Exceptional stability
- Suitable interfaces for user and data transfer
- Good usability in requiring field conditions
- A great number of colour parameters delivered for any needs
- A very wide dynamic range
- Versatility in applications

Look at what Visilab has to offer in our FrontColour 10

A. Good reliability - It is built to last. All wearing parts are carefully designed.

B. Ease of use - Turn the meter on and start measuring. Could it be simpler? Acquire data from the analog outputs or from the PC program

C. Good stability - It is in a unique class in stability due to its highly advanced design. We can guarantee a superior long-term stability figure

D. Interfaces - It connects to the world with the following:
- RS232-USB/ USB
- analog signals for any output variable: 4 X 0..5 V, one 4-20 mA, all scalable and selectable for any signal
- **USB** for a PC directly in the box
- A full-featured data acquisition software **FrontColour** and the configuration program **FrontColourConfig**. These software have a great number of highly useful features for regular quality control, troubleshooting and special research purposes. Bluetooth connects the meter to the PC. The programs follow each meter without cost. One can get data archiving, reporting and trend displays.

E. Usability - Using FrontColour 10 is simple and straightforward. The sturdy box is IP67 rated meaning dust and water proof. If it gets dirty, wipe out the sensitive area and continue. All configuration data is saved to a nonvolatile memory.

F. Reference to standards - The meter conforms to CIE 15:2004 and CIE 176:2006 requirements: L*a*b*, Lu'v', L*u*v*, measurement by CIE 1964 10°, Illuminant: A / C / D50 / D55 / D65 / D75. This is a category B instrument for continuous use

G. Colour variables - delivers 20 colour parameters: X, Y, Z, chromaticity coordinates x,y,z - CIE L*a*b*, v', u*, v*, yellowness J, TAPPI brightness R457, CIE whiteness W, CIE tint, colour difference dE* (for dL*, da*, db*), chromaticity, hue. Also a special primary reflectance data R(lambda) is obtained at a wanted wavelength. All these variables (excluding u') can be acquired at any time through the interfaces.

H. Versatile - FrontColour 10 can be used for colour pigments, dyes, toner and diluted ink adjustment in production machines in addition to regular QC of production.

There is more than you expected..

FrontColour 10 has a minimum measuring speed of 1 to 2 points/s which offers a good quality signal. The signal filtering can be changed with the PC programs to fit the production requirements.

Calibration - The factory calibration has been made with a NIST traceable reflectance standard and **the meter rarely will need any recalibration**. A checkup can be made annually against a NIST traceable reflectance standard. Recalibration is very fast if needed.

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What else does it have? Small things like:

High immunity to ambient conditions. External light are eliminated and temperature compensation is in use. Thermochromic compensation is not in use.

A very low internal noise level in colour signals even at dark colours

A digital filter with three selectable passbands for noise cancellation while measuring a moving web.

A competitive price, a quick ROI

A measuring area size of 8.75 mm in diameter allowing for accurate profile studies and small scale phenomena

All PC software are Windows 11/10/8/7 compatible and for future versions too, free upgrades from our web site for easy maintenance

French version of the program is available.

The UV fluorescence excitation can be adjusted or turned off (380 - 420 nm range).

The missing UV fluorescing range is treated as **nonexistent** as there is no exciting light. It can be replaced with a constant reflectance value (no-UV reflectance value) to avoid a small imbalance in colour analysis

The **FrontColourConfig** program contains all calibration tasks. They are rarely needed. It also contains diagnostics and the possibility for the user to apply his own reflectance standard for calibration

FrontColour 10 has two pilot lasers for facilitating the mechanical adjustment of the sensor to ensure proper working distance and angle to the running web. The lasers can be turned on/off with the program and the two powerful spots are visible in all conditions. The distance 50 mm and the parallelity are adjusted so that the two spots meet exactly.

A **recipe system** is available in the PC program to manage small colour differences according to reference measurements with other instruments. The laboratory values can thus be **matched** directly in the program to show the same a*b* readings. The number of recipes is not limited since each recipe is saved into its own text file.

The colour variables can be scaled and offset at the low level if absolutely needed. However, this will affect the readings in a powerful way. Also the strict tracking to the original CIE calibration is lost. For colour variable adjustment it is recommended to apply the recipe system which does not affect the basic calibration. It will only create changes to the a* and b* variables **on the PC program level**, not in the meter and it stays fully CIE compatible at all times. That is the safest way of adjusting colour values.

The reel sensing interface will increment the reel counter automatically. The reel count is user-defined in the basic value and then added to the data files with other signal and header data.

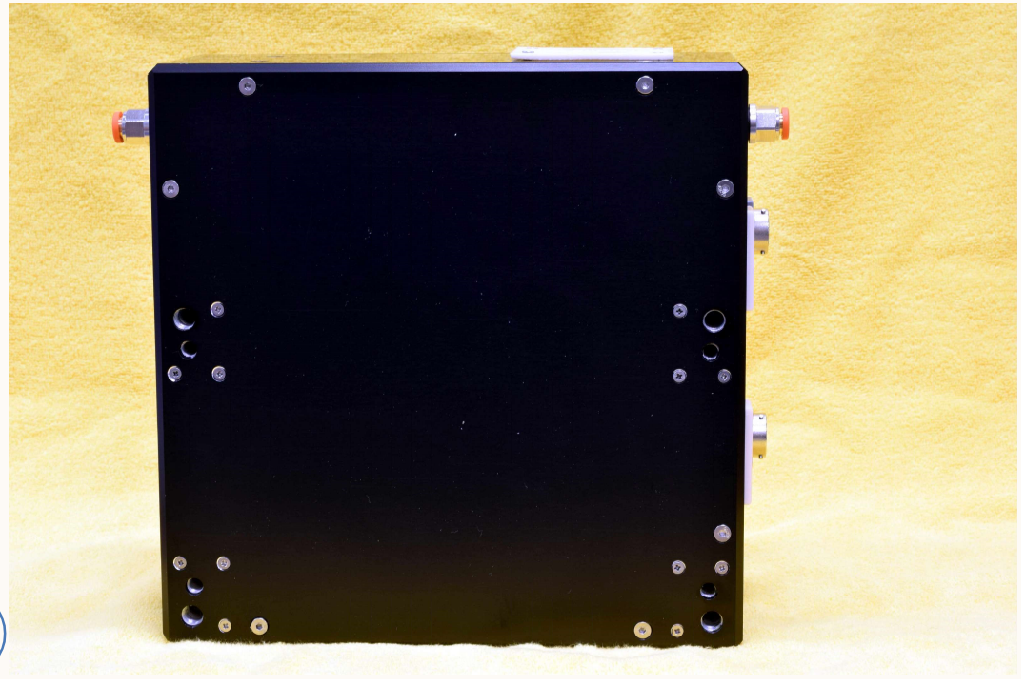
The optics calibrates itself twice per second making it extremely stable

Polymer sample holders are available for flat samples, colout tiles, reflectance standards and wavelength calibrators



Electrical connectors on the back panel

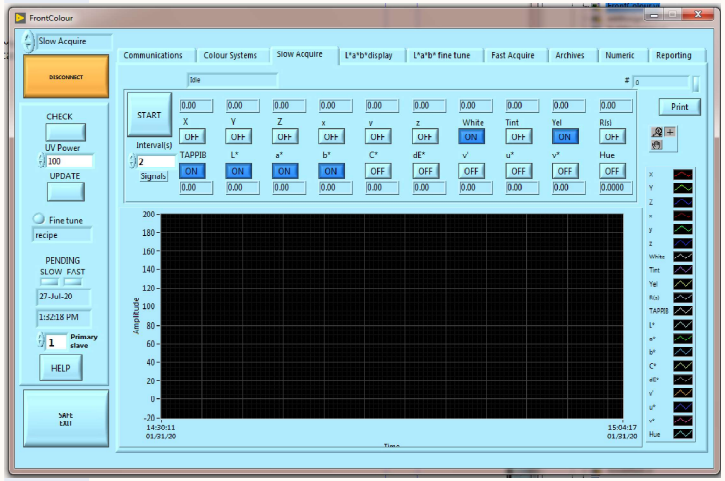
Mounting threads M10 (4) and M8 (4) on the top panel



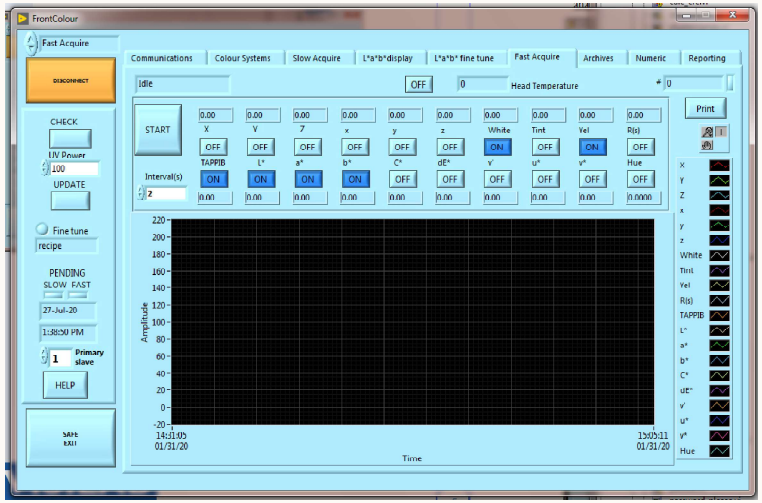
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Below are excerpts from the FrontColour program which covers basic system configurations and data acquisition. The data acquisition has two options, fast and slow. Fast one allows the acquisition of any of the colour parameters and the rest of them are not received. The slow one always gets all 20 variables. One can always toggle which channel is displayed/acquired. All incoming data can be displayed on the Archives page together with earlier data gotten from up to four earlier measurements at a time. The data are always saved each to its own file whose name is formed by the signal type.

Slow data acquisition



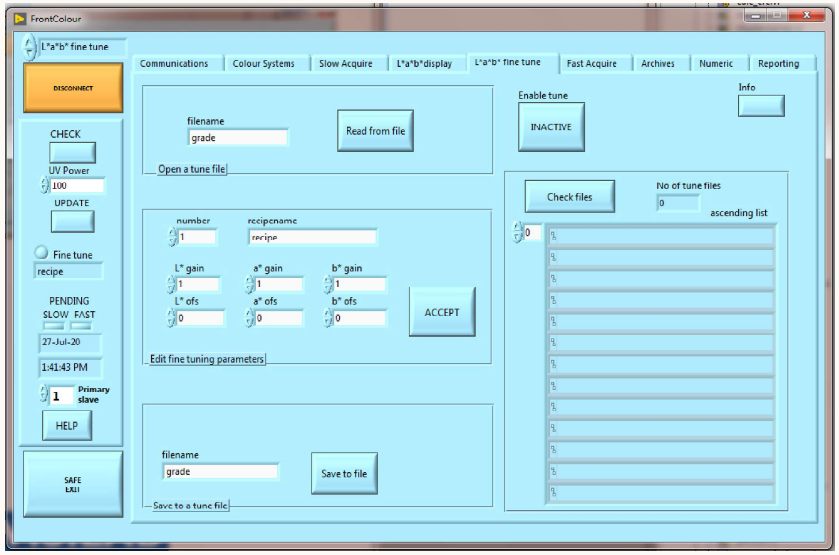
Fast data acquisition



Color difference display from slow data acquisition. It will track the a*b* accuracy



The recipe system for adjusting, turning on / off and saving to a file for later use

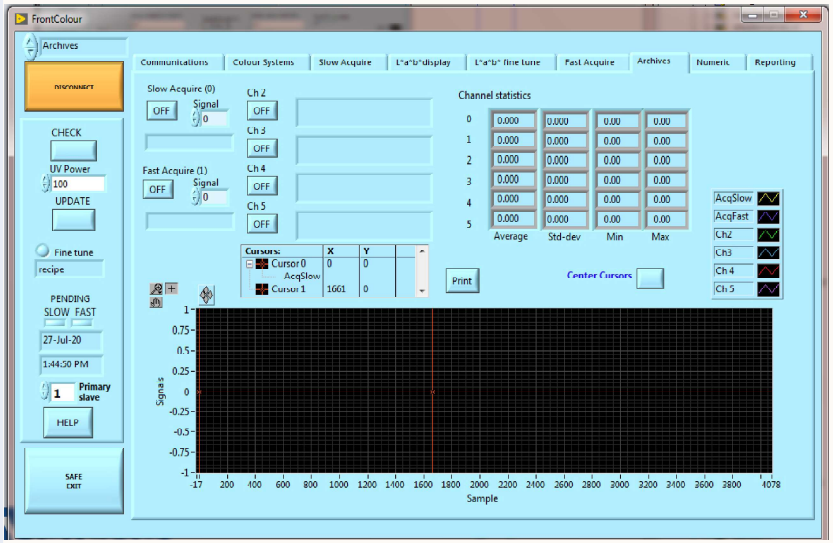


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The look & feel of the program may change

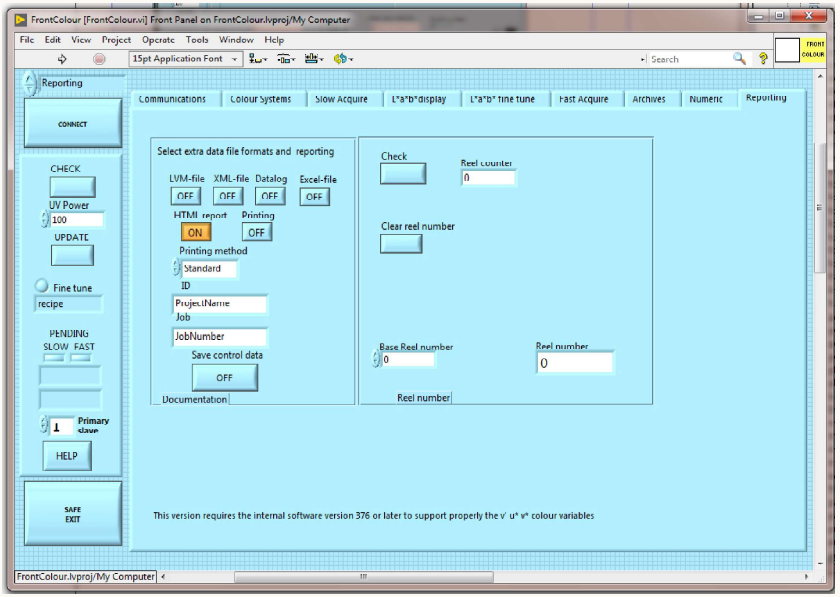
Numeric display of a selectable signal + display





Archives page with statistics between the two cursors

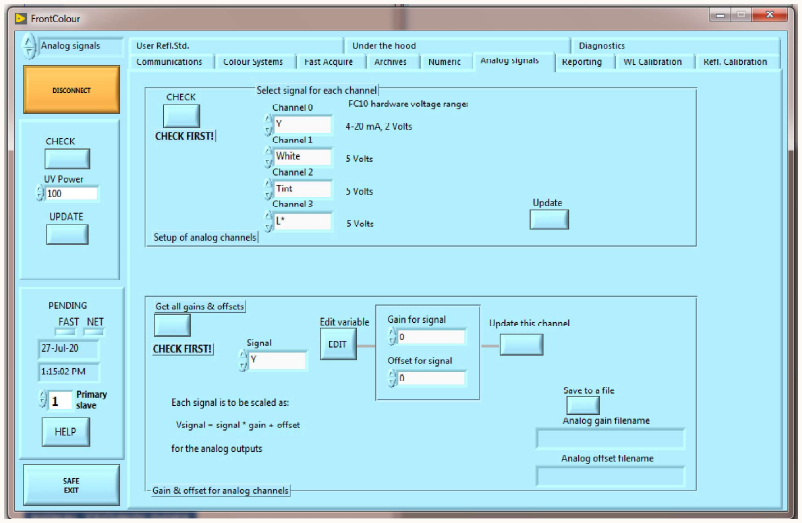
Reporting selections in the program. The incoming data can be saved in a few other additional formats. The basic data files are readable with editors and spreadsheet programs too. When the Print button is pressed, the graphics is copied to a JPG file and a HTML file for further use in customer reporting



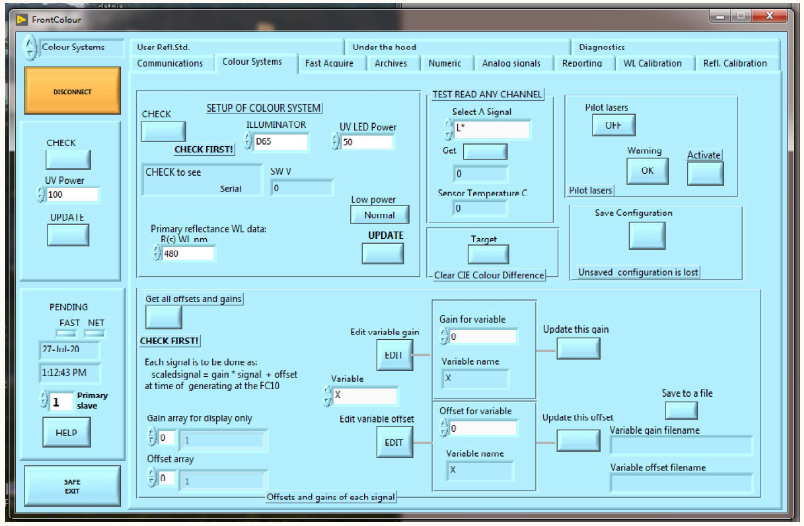
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Below are two excerpts from FrontColourConfig which covers all system configurations from analog signal output selection and scaling to all calibration needs. Data acquisition is possible with the configuration program as well.

Analog signal output selection



Colour system selection and setup, the same in both programs



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Are these specifications sufficient for you?

Now, what is keeping you from asking for more data and an offer?

FrontColour 10 is the best on-line colour meter:

- ➤ Offers a great number of CIE variables plus more
- ➤ Simplest to use, practical features
- ➤ Lowest cost, small and most compact
- ➤ Contains a large number of useful features for practical work in QC and research
- ➤ Easy-to use support software
- ➤ A large number of field applications
- ➤ Wireless communication with a PC
- ➤ Highly stable and reliable, very little service needs
- ➤ Versatility in applications

Sensors made by Visilab Signal Technologies have been sold to a large variety of applications since 1994: From paper and machine research to troubleshooting and regular quality control and rough field use. Check our brochures for available models.

Find latest news and other up-to date material on our web pages:

www.visilab.fi

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