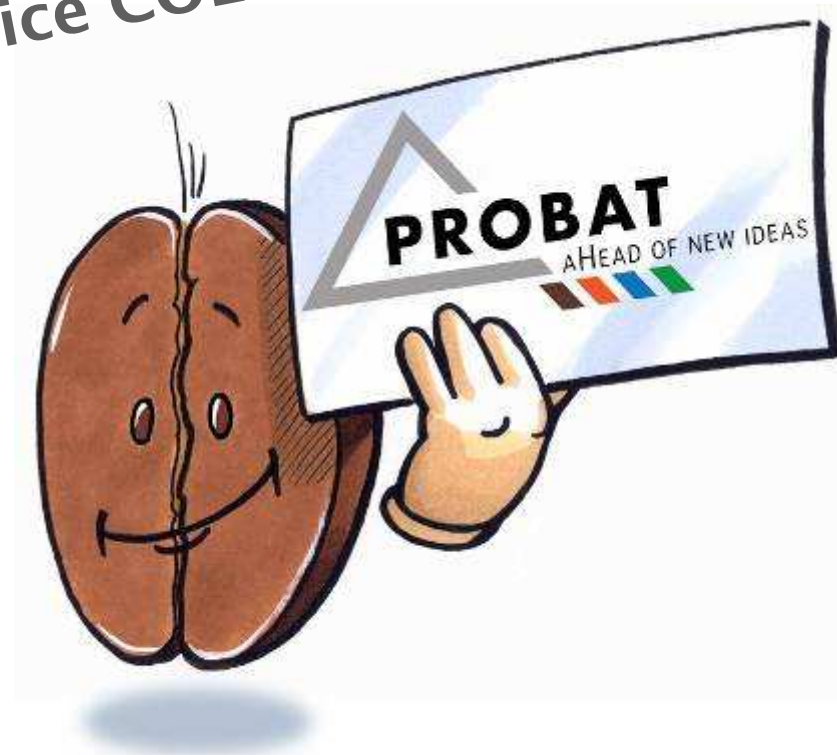


# Welcome



Colour measuring device COLORETTE 3b



Presentation of  
PROBAT-WERKE  
von Gimborn Maschinenfabrik GmbH



# Colour measuring device COLORETTE 3b



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## General re. Colour measuring device

The degree of roast of the coffee is an extremely important criterion for the coffee quality.

The colour of the coffee – measured in ground condition – is an indication of the degree of roast. This enables the customer to control and monitor the roasting process.

There does not exist any worldwide standard respectively any standardized measuring procedure for the colour definition of the roasted coffee.



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## Functioning of the colorimeter

The Colorette 3 and 3a does operate according to the reflection measuring principle (optical measuring system with two clocked sending unit and one receiving unit).

The coffee to be measured is illuminated and clocked by LED's with two wave lengths (red light and infra-red light). The sum of the light quantity reflected in both wave length ranges is evaluated by the software and indicated in the display as a colour value.

# Colour measuring device COLORETTE 3b



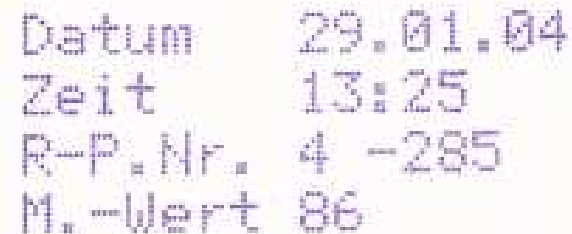
## Software of the colorimeter

- Adjustment of date and hour
- Adjustment of roaster and measuring numbers
- Adjustment of language (5 languages)
- Calibration with integrated hinged reference plate
- Two-point calibration
- Factory calibration
- Print mode for paper print or data transfer to PC



Display

Key field

A screenshot of the colorimeter's monochrome display showing calibration data. The text is as follows:

Datum 29.01.04  
Zeit 13:25  
R-P.Nr. 4 -285  
M.-Wert 86

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## LED block

The LED's of the Colorette 3b are subject to ageing so that the intensity decreases among other things in the course of time. The decrease in intensity can be balanced up to a certain degree via the incorporated reference plate. The LED's life is approx. 2.5 to 3 years depending on the utilization.



Contrary to the Colorette 3, the Colorette 3b contains a replaceable optics LED module and enables the operator to carry out the replacement by himself (in accordance with instruction manual and password interrogation at PROBAT!!). Thus the customer does always possess a colorimeter ready to operate.

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## Sample preparation / degree of grind

The degree of grind has a significant influence on the colour measuring result.

A fineness of grind similar to espresso is taken as a basis by PROBAT for the colour measuring. Within this “fine” grinding range a larger scope concerning the degree of fineness is warranted with same colour tolerance than with coarser grinds.





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## Calibration with incorporated hinged reference plate

After switch-on (ready to operate after approximately 3 minutes) and every two hours the operator is invited for calibration on the hinged reference plate.



After a certain operating period, the parameters of the LED block can change (e.g. caused by temperature drift of the LED or intensity ageing). During the current operation this is compensated via the calibration on the hinged reference plate.



## Two-point calibration

For the preparation of the two-point calibration both new grey reference plates are required.

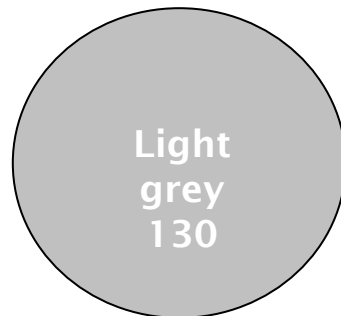
The light and dark grey reference plates render possible the two-point calibration on the Colorettes with fixed basic values (execution is recommended 1 x per month).

Through this the two-point calibration with light and dark ground coffees is deleted, which could lead to different colour measuring results owing to the different sample preparations (degree of grind, grain spectrum of sample, with/without wiping-off device, ageing of coffees).

The colour numbers for input are located on the back side of the grey reference plates.

=> K1 = colour number *dark* grey reference plate

=> K2 = colour number *light* grey reference plate



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## Procedure:

- Carry out the calibration very carefully!!!
- Press and hold the CL key; then additionally press the SET key to access the *SPEC* menu.
- Press the ▲ key until the *2P Calibr.* indication appears on the display; afterwards press the ENT key
- The *PASSWORD indication appears on the display*; afterwards the password number 1027 has to be set via the ▲ arrow keys and to be acknowledged with the ENT key.
- The colour value of the dark grey reference plate K1 (see back side of the grey reference plate) has to be set with the arrow keys ▼▲ and to be acknowledged with the ENT key.
- Put the dark grey reference plate with the registered value K1 on the measuring table and acknowledge at last with the ENT key.
- The colour value of the light grey reference plate K2 (see back side of the grey reference plate) has to be set with the arrow keys ▼▲ and to be acknowledged with the ENT key.
- Put the light grey reference plate with the registered value K2 on the measuring table and acknowledge at last with the ENT key.
- The dialog box for the two-point calibration can be closed by pressing the RUN key.

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## Procedure:

- Two-point calibration with the previous reference coffees of the customer
- Measure colour value of the dark grey reference plate and note it on the back side of the plate
- Measure colour value of the light grey reference plate and note it on the back side of the plate

Can the customer use his previously utilized colour curve, which might perhaps deviate from the PROBAT colour curve?

**Yes**

The values ascertained by the colorimeter are the customer's new reference values according to his previous colour curve.

Thus the customer will no longer need any reference coffee in the future. He can carry out a monthly two-point calibration only with the grey reference plates and the ascertained and noted values.

