SPECTRO3-MSM-SLA-Scope:
Changes due to software update
from V1.1 to V1.2

This manual summarises the changes that were made with the software update from **SPECTRO3-MSM-SLA V1.1 to V1.2.**

A software update from V1.1 to V1.2 can be performed quite easily.
All you need is the FirmwareLoader V1.1 and the firmware files for V1.2.
The FirmwareLoader V1.1 can be found on the software DVD that is provided with the sensor or can be downloaded from our homepage.
The firmware files are available from your sensor supplier.
The respective procedure is exactly described in the **"Manual FirmwareLoader V1_1"** file.

Change 1:

SET DP:
If an application involves both very bright and very dark surfaces, and the sensor is set such that it is not in saturation at the bright surfaces, the dark surfaces frequently provide only a very low signal.
Little variations with a very low signal lead to a large change in color space calculation **(C-SPACE).** To minimise this effect, the sensor in **POWER MODE = DOUBLE** automatically switches back and forth between 2 **DOUBLE PARAMETER sets**. Set 2 must be parameterised such that the signal is maximally amplified.
When the signal is too high (saturation), it automatically switches to set 1.
To get correct color space coordinates with set 2, a correction factor must be used for the signal.
The two **DOUBLE PARAMETER sets** must be set at the sensor in advance.
When you click on **SET DP** (Set Double Parameter) a window will open at the right side, where you can set two sets. A Double Parameter set is defined by **POWER, GAIN** and **INTEGRAL**.
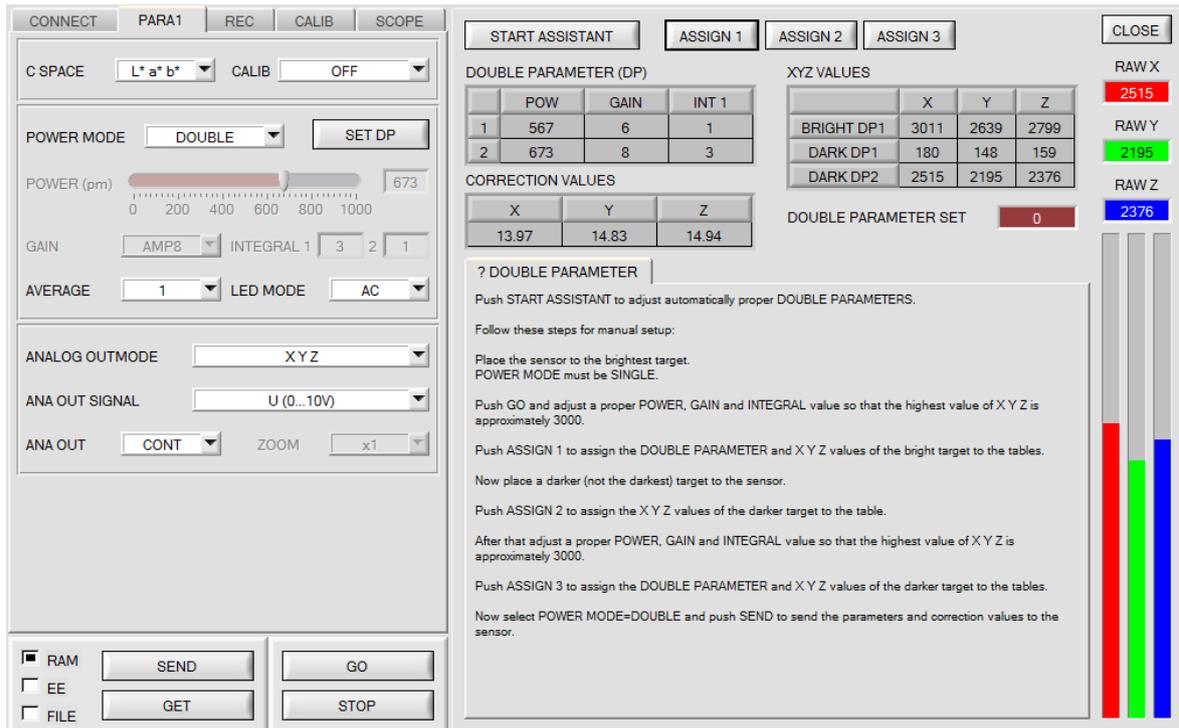
Automatic setting of the DOUBLE parameter sets:
Pressing **START ASSISTANT** starts menu navigation for the automatic setting of the double parameter sets. Simply follow the instructions.

Manual setting of the DOUBLE parameter sets:
Set **CALIB=OFF** and **POWER MODE=SINGLE** on.
Place the brightest surface in front of the sensor and select a fitting **POWER, GAIN** and **INTEGRAL** value in such a way that the brightest channel is at c. 3000 digits.
Now press **ASSIGN 1** to accept the double parameter in the **DP** table in line 1.
The X Y Z values are also entered in the **XYZ VALUES** table.
Now place the dark surface in front of the sensor.
The dark surface should be constituted so that the weakest channel has a signal greater than 100 digits.
After pressing **ASSIGN 2,** the X Y Z values are accepted in line DARK DP1 of the **XYZ VALUES** table.
Now **POWER, GAIN** and **INTEGRAL** must be set in such a fashion that the strongest value lies at c. 3000.
Press **ASSIGN 3** to accept the Double Parameter in the **DP** table in line 2 and to accept the X Y Z values in the **XYZ VALUES** table.
The correction value is calculated automatically and entered in the **CORRECTION VALUES** table.

INFO!
The double parameter sets are first activated after pressing **SEND**!
The tables are for display purposes only. They cannot be edited.
The **DOUBLE PARAMETER SET** and **DP SET** displays show which DOUBLE PARAMETER set the sensor currently uses.
When the display shows 0, the sensor in **POWER MODE = SINGLE** operates with the settings in the **PARA1** tab.
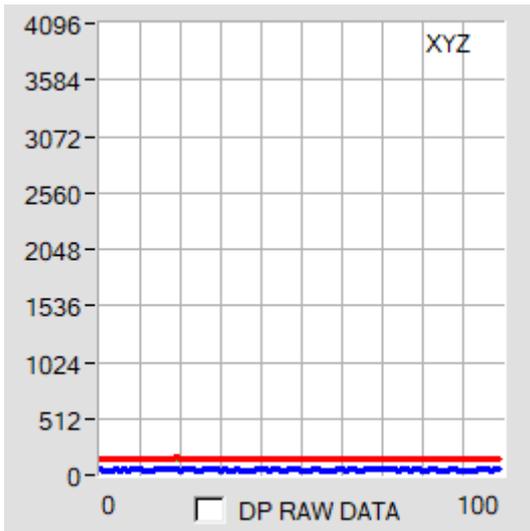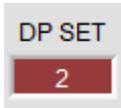
To understand with which **X, Y** and **Z** values the sensor works in parameter set 2, you can display this raw data in the tab **XYZ** using the **DP RAW DATA** check box.

As mentioned above, the color space coordinates are calculated using the raw data **X, Y** and **Z** received with parameter set 2.
At the end of the calculation, they are divided using the correction factor.
This method avoids rounding errors in the calculation and thus maintains accuracy.
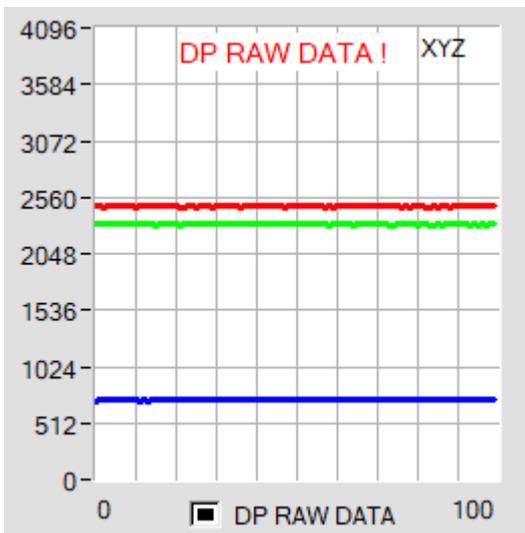
Change 2:

With **START CALIBRATION ASSISTANT** you can start an assistant that guides you through the calibration.

The following three conditions must be met:

1. You need **one** reference card. This is either the card RAL 9003-P, RAL 9010-P, or RAL 9016-P.

2. You need different RAL colors RAL from the *RAL CLASSIC* or *RAL DESIGN SYSTEM plus* series. These are available from the sensor supplier.

3. You need a file in which the L*a*b* values for the different RAL cards are stored. This file is also available from the supplier.