PRIOR Scientific

PUREFOCUS850 SOFTWARE GUIDE

More to PRIOR than meets the eye

SETTINGS
Load, save or create new objective settings. Factory reset also available

MODE
Switch the mode of the PureFocus unit between stepper and piezo.

SETUP
Ability to live-view the PureFocus sensor directly, running at a significantly lower update rate.

PID
Sets servo proportional, integral, differential parameters for optimum performance.

OFFSETS
Move between 5 stored offset positions.

PINHOLE
Allows for manual adjustment of the pinhole centre and width. Used for a full manual setup.

LASER
Allows manual adjustment of the laser power to any level between 0 and 4000.

FLAGS
Adjust the threshold levels that define the 3 flag conditions.

Z-SCAN
Troubleshoot or assess error signals, using simple Z scans with sensor measurements saved at each Z point.

SEARCH
Two features which allow focus to be found in two different situations. Used when the Focus flag is false.

Z-SPEED
Settings to adjust Z speed and acceleration.

DIAG
Troubleshoot a PureFocus system during customer support. Log coms between the GUI and PureFocus.

ABOUT
Information on current version number.

PRIOR SCIENTIFIC RANGE

Queensgate Nanopositioning Devices & Sensors

Motorized Stages

Controllers

Metal Halide/LED Illumination Systems

OBJECTIVES
OBJ1 to OBJ6 are shown on the display of the controller. When an objective is selected, parameters for that objective are loaded and restored.

Objective parameters can be saved and loaded to and from external files via the settings drop down menu.

FLAGS
Utilises three flags that are updated in real time to help inform the user of the current state of the system.
IN FOCUS
The unit has a sample in focus.
SAMPLE DETECTED
The unit recognises a sample via light reaching the sensor, and or the sample is in focus
CORRECT INTEFACE
Focus locked on the correct interface

SERVO
Toggles servo on and off. When servo is active SRV is shown on the display of the controller and Z position control becomes automated by the PureFocus.

When servo is inactive MAN is shown on the display of the controller, when in this focus mode the Z position can be manually adjusted using the digipot.

Prior PureFocus850

Settings Mode Setup PID Offsets Pinhole Laser Flags Z-Scan Search Z-Speed Diag About

Objectives
1:
2:
3:
4:
5:
6:

Measurement

70157	A	
68401	B	
138558	A+B	
1756	A-B	

$$ERROR = TARGET-((A-B)/(A+B))$$

Down   0.016849

Zero target   Target   Target   0

Flags
InFocus?
Sample Detected?
Correct Interface?

Servo
Servo OFF   Servo ON
0   Correction

Z-position (x100nm)
Z position   0
Zero z / Set Home
Go Home
Lift to load   Distance 0
Step Up   Step Size
Step Down   100
Halt z

Digipot Function
Focus
Offset
Speed - 100

Offset Position
Default 0
Current 0

PureFocus850

MEASUREMENTS
Shows the signals and measurements coming from the PureFocus sensor: A, B, A+B, A-B and ERROR which is the error signal used to steer the focus when the servo is active. Some of these values have visual and numeric indicators to aid the eye.

ZERO TARGET & TARGET
Value of TARGET can be set as the current error signal value via the `Target` button.
Current target value can be set to zero by pressing the `Zero target` button.

OFFSET POSITION
Shows the current and default offset position values. Changing the offset this will provide optimum sharpness of the image.

OFFSET/FOCUS
Toggles between Offset and Focus mode. When Offset mode is selected an OFF is shown on the controller display and the digipot adjusts the offset, when Focus mode is selected a FOC is shown on the controller display and the digipot adjusts the Z position.

SPEED
Sensitivity of the digipot can be adjusted for offset and z control independently using speed option.

UPDATES CAN BE DOWNLOADED FREE

HALT Z
Emergency stop button to instantly stop motion of the Z-axis

STEP DOWN
Basic funtionality to step the Z-axis down by desired step size.

STEP UP
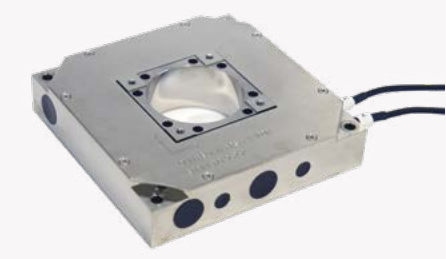Basic funtionality to step the Z-axis up by desired step size.

LIFT TO LOAD
Moves the Z-axis to a fixed distance to insert or remove a sample.

GO HOME
Moves the Z position to the home position.

ZERO Z / SET HOME
Set a Z-axis home position.

Runs on Windows 7 to 10, 32-bit and 64-bit.

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Version issue No. - 1

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