

PHELIX SHOT DATABASE (PSDB)

USER'S MANUAL FOR EXPERIMENTALISTS

Version 0.3 (03.05.2013), Udo Eisenbarth

OVERVIEW

The PHELIX Shot Database (PSDB) is a data logging system documenting laser operation. It can be accessed through a web interface available for both internal and public use. This manual describes the usage of PSDB for experimentalists.

LOGIN AND ACCOUNT SETTINGS

The web interface of the PSDB can be accessed using the URL

<https://psdb.gsi.de>

Please note that the protocol is „https“ (not „http“). The PSDB replies with the login screen as shown in Figure 1. Usually the login data is sent via email to the contact person of an experiment at the time a new experiment is set up by the PHELIX team. If not, contact the PHELIX team (or write an email to psdb@gsi.de) in order to setup an account or resend the login data.

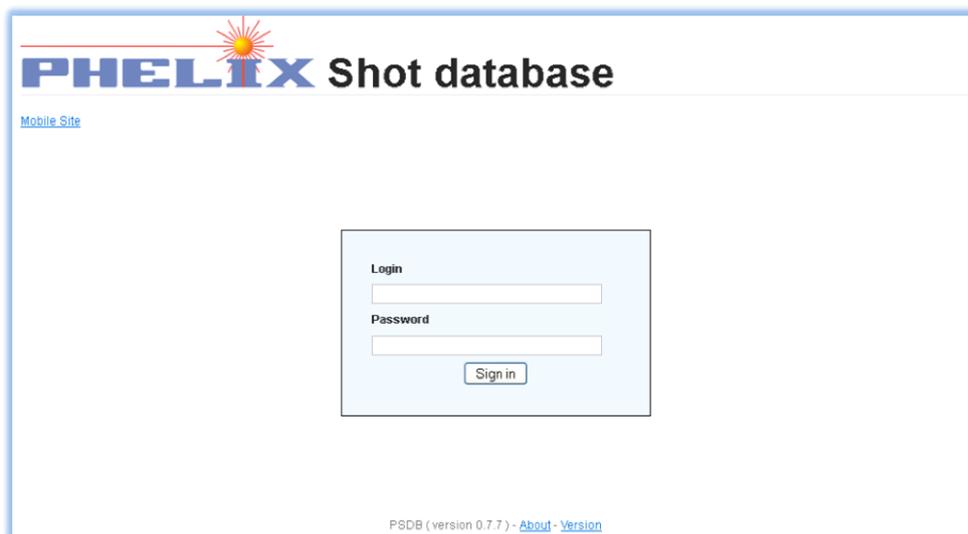


Figure 1: Login screen

After a successful login the main menu page is shown (Figure 2). Note that not all options might be available depending on the permissions of your account. Experimentalists normally have access to “Experiments” and “Shots”.



Figure 2: Main menu. Note that not all options might be available depending on the permissions of the user account.

While the account is set up a random password is assigned. This password can be changed by clicking on the user profile link in the upper left corner which opens the corresponding dialog (Figure 3).

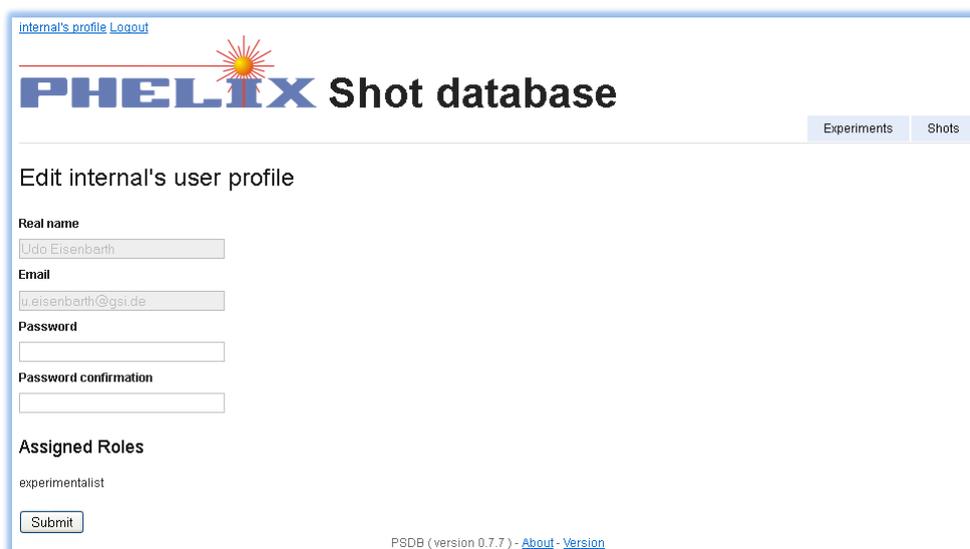


Figure 3: User profile settings.

Note that the login name, real name and the email address cannot be changed by the user. If this is necessary contact the PHELIX team.

SHOT DATA RETRIEVAL

General experiment data can be accessed through the “Experiments” menu. A list of experiments available to the user is shown (Figure 4). Usually only one experiment (the experiment belonging to the user account) is shown here.

internal's profile Logout

PHELIX Shot database

Experiments Shots

Available Experiments

Name	Description	Contact person	Active?
Internal	internal shots of PHELIX	Udo Eisenbarth <u.eisenbarth@gsi.de>	yes

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Figure 4: List of available experiments.

A click on the experiment name gives an overview including some shot statistics (if any) (Figure 5). Furthermore, arbitrary documents (e.g. experiment design reviews etc.) can be attached here (see “File attachments” later in this manual).

Sometimes an experiment is split up in two or more beamtimes / measurement campaigns. For easy access of the corresponding shots of such a period, the experiment overview page provides links for the respective date spans. Since beamtimes are not explicitly marked by the PHELIX team, the database application automatically splits up an experiment in beamtimes if there a more than 7 days between successive two shots.

internal's profile Logout

PHELIX Shot database

Experiments Shots

Experiment Internal

Description: Internal shots of PHELIX
Contact person: Udo Eisenbarth <u.eisenbarth@gsi.de>
Created at: 07.12.2011 11:28:26
Updated at: 07.12.2011 11:28:26
Active: yes

Attached documents

Shot statistics

First shot was: 07.12.2011 14:18:58
 Latest shot was: 29.04.2013 18:32:39
 # of beamtimes: 16

Date	first shot#	last shot#
07.12.2011 - 07.12.2011	3500	3501
05.01.2012 - 05.01.2012	3502	3502
12.01.2012 - 30.01.2012	3503	3677
08.02.2012 - 16.03.2012	3678	4626
26.03.2012 - 30.03.2012	4701	4772
19.04.2012 - 24.04.2012	4860	5127
02.05.2012 - 08.06.2012	5263	5866
19.06.2012 - 11.07.2012	5967	6090
24.07.2012 - 12.09.2012	6116	6433
19.09.2012 - 19.12.2012	6463	7093
09.01.2013 - 09.01.2013	7094	7094
23.01.2013 - 08.02.2013	7095	7273
20.02.2013 - 20.02.2013	7284	7291
05.03.2013 - 06.03.2013	7292	7294
19.03.2013 - 28.03.2013	7295	7377
05.04.2013 - 29.04.2013	7378	7500

Shot type

Shot type	# of shots
experiment shot	134
test shot	1029
snapshot	63
Total	1226

Comments

User	Comment	Date
udo	Der erste Kommentar vom Udo :-)	12.12.2012 08:47:45

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Figure 5: Experiment details.

Laser shots can be displayed in the shot list (Main menu -> Shots) as depicted in Figure 6. Displayed are the shot id, the date, some configuration data (waveplate settings for energy control, used amplifier heads) as well as shot energies and a comment. Various filters can be applied in order to find a particular shot using the filter

dialog at the top of the list. Shots can be filtered with respect to a date span and/or a given shot id range or the shot type. For the shot type one typically distinguishes between “experiment shot” and “test shot”. An “experiment shot” denotes a shot on the experiment target while a “test shot” is typically a shot “without light” such as a trigger test etc.

A red line in the shots list denotes a failed shot which might happen if it was manually or automatically aborted because of hardware or interlock condition failures. In rare cases this shot might still be successful from the experimentalist’s view because only an “after shot condition” was not fulfilled. You should contact the PHELIX team in this case.

A black horizontal line denotes a day break. This way it is easier to see which shots have been made at the same day.

In addition a table row with a paper clip denotes a shot with attached files (see “File Attachments” later in this manual).

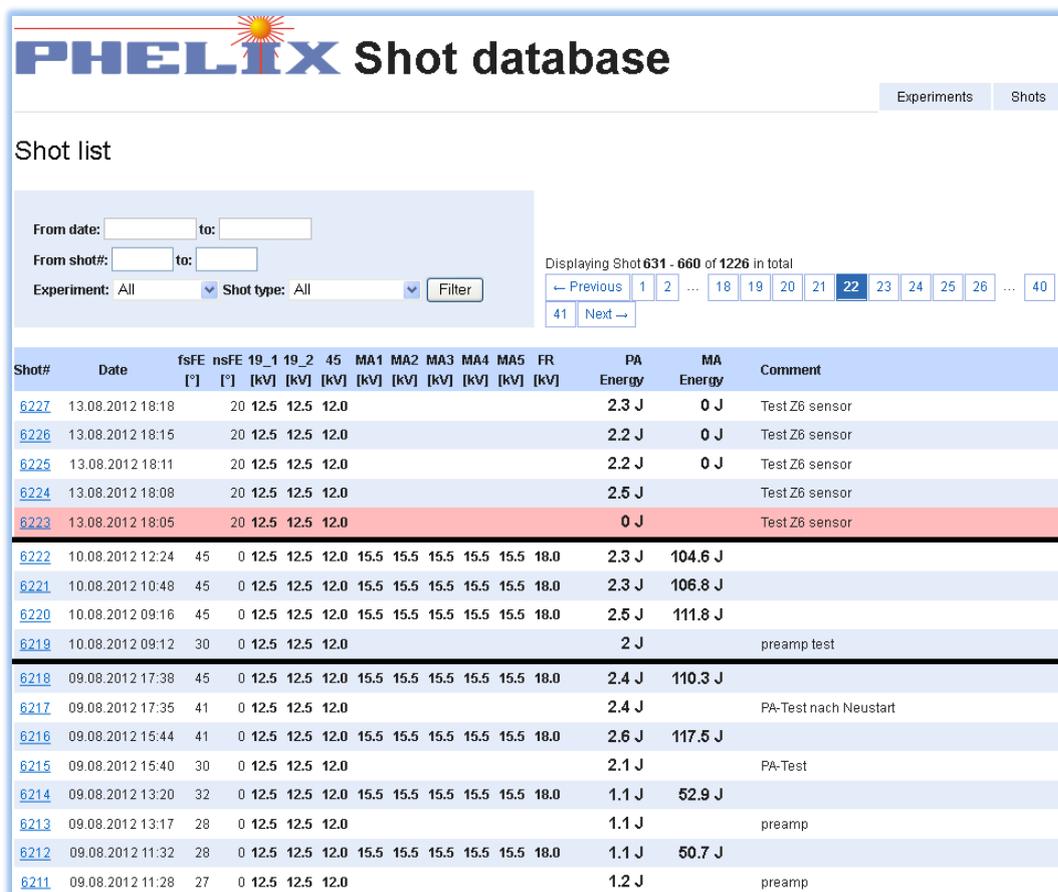


Figure 6: Shot list.

Measurement details for a particular shot are shown with a click on the shot id as seen in Figure 7. A brief overview of the measurements (and some results) is shown in the table on the right side. The lists on the left side are filter options in order to restrict the displayed measurements to either a subsystem (such as “MainAmplifier”) or a device type (such as “IEEE 1394-Camera”). Note that some combinations do not exist (e.g. there is no device “Spectrometer” at the subsystem “PreAmp”). In this case the list of measurement data is empty.

Internal's profile Logout

PHELIX Shot database

Experiments Shots

Shot #6390 <- Shot 6389 Shot 6391 ->

Timestamp: 05.09.2012 14:49:51
 Experiment: Internal
 Shot type: test shot
 Comment: Z6 calibration shot

pta

Attached documents

Comments

Subsystems

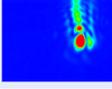
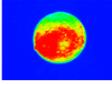
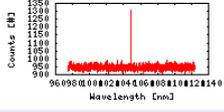
Displaying Instancevalueset 1 - 30 of 141 in total

← Previous 1 2 3 4 5 Next →

- All
- Beamline
- Experiment Z6
- MAS
- MainAmp
- Miscellaneous
- PreAmp
- Pulsed Power
- Timing
- ns-Frontend

Class types

- All
- BNC555
- PH_AxisGUI_6P
- PH_BackreflectionMeas
- PH_BlackBox
- PH_CurrentMeas
- PH_IEEE1394Camera
- PH_ImageOperator
- PH_KOBO-LF
- PH_Mercury_Monitor
- PH_O2_Watch
- PH_OceanOpticsSpectrometer
- PH_PA_Chiller
- PH_PPMA_PowerUnit
- PH_PPPA_PowerUnit
- PH_SSAC
- PH_Sequencer
- PH_Sixpack
- PH_Sixpack_Switch
- PH_Switch
- PH_VacuumControl
- PH_Waveplate-GUI_6P
- PH_gentec_Powermeter
- SRD0535

Device	Result
BL-Z6-Bearndump	OUT
BL-Z6-CH10	OUT
BL-Z6-CH11	OUT
BL-Z6-CH9	OUT
BL_Position_MM5	OUT
Calorimeter_Switch	OUT
FR+MT Flowbox_off	ON/TRUE
MA01_CH1	OUT
MA01_CH2	OUT
MA01_CH3	OUT
MA01_CH4	OUT
MA01_O2_Beamline_MM1	0.08 %
MA01_O2_Beamline_MM3	0.05 %
MA01_O2_Lab_North	20.93 %
MA01_O2_Lab_South	20.65 %
MAS_6P_1	Details
MAS_6P_2	Details
MAS_6P_3	Details
MAS_Attenuator_1_BB	OUT
MAS_Attenuator_2_BB	IN
MAS_Attenuator_3_BB	IN
MAS_Beam_Fine_Attenuator_6PWpGUI	12 *
MAS_Discrete_Spectro_6PGUI	120 *
MAS_Farfield_High_Res_Cam	
MAS_Nearfield_Cam	
MAS_Nearfield_ImageOperator	Fill factor: 75.9 %
MAS_OO_Spectrometer	
MAS_Powermeter	96.4 J
MAS_Spectro_6PGUI	0 *
MA_6P_1	Details

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Figure 7: Details of a shot.

A click on a device name in the measurement list gives further details about the particular device such as shown in Figure 8. The look of this page depends on the device type. In the given example a camera device is displayed. All images and 2d data (i.e. spectrometers, oscilloscopes etc.) can be exported to a file in various formats.

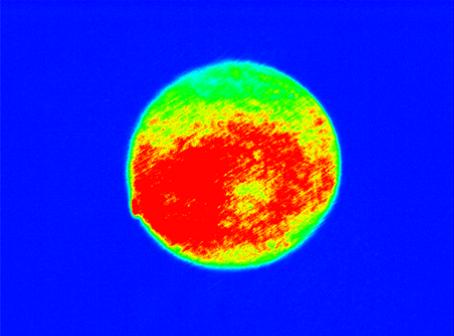
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PHELIX Shot database

Experiments Shots

MAS_Nearfield_Cam Shot# 6390

Image



Acquisition Parameters

- Camera State: ontrue
- Camera Model: A601f
- Camera Mode: 640 x 480 Mono 8 15.00 fps
- Brightness: 727
- Shutter: 498
- Gain: 110
- Trigger Mode: 0
- Trigger Timeout: 10000000 ms
- Trigger Polarity: 
- Serial Number: 20409987

Colour depth: 8 bit

Format: PNG Save with color palette:

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Figure 8: Measurement details of a single device (camera) for a given shot.

Most of the measurements stored in the database represent internal data of the laser system which are generally not relevant for experimentalists. For this reason, a short overview of the most relevant data (such as pulse energies) for a given target area can be displayed as a “shot report” (Figure 9). This report can be accessed on the “shot details” page (Figure 7) by pressing the “Generate Report” button. The type of report can be set in the drop down menu left to the button. Currently two reports are available: PTA (“Petawatt target area”) and Z6 (“Z6 target area”). The pattern in the upper right edge (QR-Code) can be scanned (e.g. by a smart phone) which displays the corresponding website of the shot on this device.



Figure 9: Shot report for a given shot.

FILE ATTACHMENTS

As mentioned earlier, the PHELIX shot database allows for attaching arbitrary documents to either an experiment or a shot. Experiment attachments are created through the “experiment details” page (Figure 5). These are typically documents with general aspects (design reviews, drawings, general documentation, etc...). In addition, documents can be attached to each shot (measurement data which are not (yet) automatically stored by the control system, target configurations, comments, etc...). The number of attachments is not restricted. The maximum file size however is 5 MByte.

Attachments can be uploaded following the “Add attachment” link. A dialog with a file selector button as well as a description field is displayed. Pressing the “Add Attachment” button starts the upload process. Please note that this might take a while depending on the file size and the connection speed.

Existing attachments can also be edited by clicking the respective icon behind an attachment. Leave the “Content” field empty if you only want to update the file description.

The image shows a web-based interface for the PHELIX Shot database. At the top left is the logo, which consists of the word "PHELIX" in a bold, blue, sans-serif font, followed by "Shot database" in a smaller, black, sans-serif font. To the right of the logo is a navigation menu with five tabs: "Experiments", "Shots", "Instances", "Statistics", and "Administration". Below the navigation menu is a section titled "Add attachment". Under this title, it states "Maximum file size is 5 MB." followed by the label "Content". There is a text input field for the content, which is currently empty, and a button labeled "Durchsuchen..." to its right. Below the content field is the label "Description" and a larger text input field for the description. At the bottom of the form are two buttons: "Add Attachment" and "Cancel".

Figure 10: File upload dialog.

Attachments can be deleted using the „trash can“ icon. Note that there is no way to recover deleted attachments!