

Pilatus Tango Cpp Class

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Pilatus Class Identification :

Contact : at esrf.fr - meyer
 Class Family : Acquisition
 Platform : Unix Like
 Bus : Ethernet
 Manufacturer : none
 Manufacturer ref. :

Pilatus Class Inheritance :

- [Tango::DeviceImpl](#)
 - Pilatus

Pilatus Class Description :

Pilatus detectors are a series pixel detectors build by DECTRIS

http://www.dectris.com.

All detectors of this series can talk to the outside world via a socket connection. An ASCII protocol is used on this socket connection to communicate with the detector.

The server process which handles the socket on the detector PC is called camserver. Only one client can communicate with camserver. If the native client tvx is connected, the device server cannot connect until tvx gets disconnected.

Pilatus Properties :

There is no class properties

Device Properties			
Name	Description	Type	Default Value
SocketDevice	The name of the Tango socket device to use for the connection with the camserver process of the detector.	String	none
UseOldProtocol	If this property is set true, the device server will use an old camserver command enumeration. In this case the Send command will have the value 13 instead of 15 in recent command sets.	boolean	false
SetRolEnabled	1 if the possibility of setting Rols is enabled for this detector.	int	0
SimulationMode	1: device is simulated, 0: NOT	int	0

Pilatus Class Commands				
Name	Input type	Output type	Level	Description
State	DEV_VOID	DEV_STATE	OPERATOR	This command gets the device state (stored in its <i>device_state</i> data member) and returns it to the caller.
Status	DEV_VOID	CONST_DEV_STRING	OPERATOR	This command gets the device status (stored in its <i>device_status</i> data member) and returns it to the caller.
StartStandardAcq	DEV_VOID	DEV_VOID	OPERATOR	Start an acquisition with the propositioned parameters
StopAcq	DEV_VOID	DEV_VOID	OPERATOR	Stop the acquisition. This works only for multi images acquisitions. A single image acquisition will always finish.
Reset	DEV_VOID	DEV_VOID	OPERATOR	Reset a state

MXsettings	DEV_STRING	DEV_VOID	OPERATOR	Set crystallographic parameters in the image header.
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Command State :

This command gets the device state (stored in its *device_state* data member) and returns it to the caller.

State Definition		
Input Argument	Tango::DEV_VOID	none.
Output Argument	Tango::DEV_STATE	State Code
DisplayLevel	OPERATOR	..
Inherited	true	..
Abstract	true	..
Polling Period	Not polled	..
Command allowed for	All states	..

Command Status :

This command gets the device status (stored in its *device_status* data member) and returns it to the caller.

Status Definition		
Input Argument	Tango::DEV_VOID	none.
Output Argument	Tango::CONST_DEV_STRING	Status description
DisplayLevel	OPERATOR	..
Inherited	true	..
Abstract	false	..
Polling Period	Not polled	..
Command allowed for	All states	..

Command StartStandardAcq :

Start an acquisition with the propositioned parameters

StartStandardAcq Definition		
Input Argument	Tango::DEV_VOID	
Output Argument	Tango::DEV_VOID	
DisplayLevel	OPERATOR	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command NOT allowed for	<ul style="list-style-type: none"> • DISABLE • RUNNING • FAULT 	..

Command StopAcq :

Stop the acquisition. This works only for multi images acquisitions.
A single image acquisition will always finish.

StopAcq Definition		
Input Argument	Tango::DEV_VOID	
Output Argument	Tango::DEV_VOID	
DisplayLevel	OPERATOR	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command NOT allowed for	<ul style="list-style-type: none"> • DISABLE • FAULT 	..

Command Reset :

Reset a state

Reset Definition		
Input Argument	Tango::DEV_VOID	
Output Argument	Tango::DEV_VOID	
DisplayLevel	OPERATOR	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..

Command allowed for	All states	..

Command MXsettings :

Set crystallographic parameters in the image header.

MXsettings Definition		
Input Argument	Tango::DEV_STRING	The input string must be in the form:\n\n[parm_name value] [parm_name value] ... Possible parameter names are: Wavelength, Energy_range, Detector_distance, ... (see Pilatus manual for a complete list).
Output Argument	Tango::DEV_VOID	
DisplayLevel	OPERATOR	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command allowed for	All states	..

Pilatus Class Attributes							
Name	Inherited	Abstract	Attr. type	R/W type	Data type	Level	Description
ExposureTime	false	false	Scalar	READ_WRITE	Tango::DEV_DOUBLE	OPERATOR	The exposure time for the detector. In the External Enable mode this value is not used by camserver.
ExposurePeriod	false	false	Scalar	READ_WRITE	Tango::DEV_DOUBLE	OPERATOR	Controls the exposure period between to images in seconds. \nIt applies only in Internal or External Trigger modes when NbFrames> 1.
NbFrames	false	false	Scalar	READ_WRITE	Tango::DEV_LONG	OPERATOR	The number of images to acquire when starting the detector
NbExposures	false	false	Scalar	READ_WRITE	Tango::DEV_LONG	OPERATOR	The number of exposures per images.\nIt applies only in External Enable mode.

							images. The file number used when taking an image. When taking more than one frame, the detector creates the file numbers automatically from this number onwards. When saving multiple images (NImages>1) camserver has its own rules for increasing the names of the individual files. The following examples shows the interpretation of the basename. Basename - Files produced test6.tif - test6_00000.tif, test6_00001.tif, ... test6.tif - test6_00000.tif, test6_00001.tif, ... test6_00008.tif - test6_00008.tif, test6_00009.tif, ... test6_2_00035.tif - test6_2_00035.tif, test6_2_00036.tif, ... The numbers following the last `_` are taken as a format template, and as a start value. The format is also constrained by the requested number of images.
FileStartNum	false	false	Scalar	READ_WRITE	Tango::DEV_LONG	OPERATOR	
FilePostfix	false	false	Scalar	READ_WRITE	Tango::DEV_STRING	OPERATOR	The Pilatus detector allows the following postfix: .tif, .edf, .img, .cbf The postfix determines the image format for the saved image files. The camserver uses the file extension to determine what format to save the files in.
LastImageTaken	false	false	Scalar	READ	Tango::DEV_STRING	OPERATOR	The name of the last image file written.
Energy	false	false	Scalar	READ_WRITE	Tango::DEV_LONG	OPERATOR	Simplified method to set gain and threshold for the detector. The threshold will be set to half the photon energy. The detector loads the corresponding

							trim files\nwhen changing the energy.\nModifying the detector setting will take several\nseconds.
Threshold	false	false	Scalar	READ_WRITE	Tango::DEV_LONG	OPERATOR	The threshold energy for the detector.\nThe detector loads the corresponding trim files\nwhen changing the energy threshold.\nThe threshold energy will always be set together with the gain.\nModifying the detector setting will take several\nseconds.
Gain	false	false	Scalar	READ_WRITE	Tango::DEV_SHORT	OPERATOR	The gain controls the value of Vrf, which determines the shaping time and gain of\nthe input amplifiers.\nThe allowed gain values for the Pilatus detector are:\n\n 0 = lowG = Fastest shaping time (~125ns) and lowest gain.\n\n 1 = midG = Medium shaping time (~200ns) and medium gain.\n\n 2 = highG = Slow shaping time (~400ns) and high gain.\n\n 3 = uhighG = Slowest peaking time and highest gain.\n\nThe gain will always be set together with the threshold energy.\nModifying the detector setting will take several\nseconds.
Rol	false	false	Scalar	READ_WRITE	Tango::DEV_STRING	OPERATOR	0 -- full detector (default)\nC2 -- central 2 modules in 2M, 6M or 12M format\nC12 -- central 12 modules in 2M format\nC18 -- central 18 modules in 6M or 12M format\nL1 -- left central module in 1M format\nL3 -- left central 3 modules in 1M format\nR1 -- right central module in 1M format\nR3 -- right central 3 modules in 1M format
LastImagePath	false	false	Scalar	READ	Tango::DEV_STRING	OPERATOR	The last path where an image was written.

There is no dynamic attribute defined.

Attribute ExposureTime :

The exposure time for the detector.\n\nIn the External Enable mode this value is not used by camserver.

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ_WRITE
Data Type	Tango::DEV_DOUBLE
Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	true
Write hardware at init.	true
Read allowed for	All states
Write NOT allowed for	<ul style="list-style-type: none">• DISABLE• RUNNING

Attribute Properties	
label	Exposure Time
unit	s
standard unit	
display unit	
format	%10.8f
max_value	
min_value	0
max_alarm	
min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

Attribute Event Criteria	
Periodic	Not set
Relative Change	Not set
Absolute Change	Not set
Archive Periodic	Not set
Archive Relative Change	Not set
Archive Absolute Change	Not set
Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	Not set

Attribute ExposurePeriod :

Controls the exposure period between to images in seconds. \nIt applies only in Internal or External Trigger modes when NbFrames> 1.

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ_WRITE
Data Type	Tango::DEV_DOUBLE
Display Level	OPERATOR

Attribute Properties	
label	Exposure Period
unit	s
standard unit	

Attribute Event Criteria	
Periodic	Not set
Relative Change	Not set
Absolute Change	Not set

Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	true
Write hardware at init.	true
Read allowed for	All states
Write NOT allowed for	<ul style="list-style-type: none"> • DISABLE • RUNNING

display unit	
format	%10.8f
max_value	
min_value	0
max_alarm	
min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

Archive Periodic	Not set
Archive Relative Change	Not set
Archive Absolute Change	Not set
Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	Not set

Attribute NbFrames :

The number of images to acquire when starting the detector

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ_WRITE
Data Type	Tango::DEV_LONG
Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	true
Write hardware at init.	true
Read allowed for	All states
Write NOT allowed for	<ul style="list-style-type: none"> • DISABLE • RUNNING • FAULT

Attribute Properties	
label	Number of Frames
unit	
standard unit	
display unit	
format	%6d
max_value	
min_value	1
max_alarm	
min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

Attribute Event Criteria	
Periodic	Not set
Relative Change	Not set
Absolute Change	Not set
Archive Periodic	Not set
Archive Relative Change	Not set
Archive Absolute Change	Not set
Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	Not set

Attribute NbExposures :

The number of exposures per images.\nIt applies only in External Enable mode.

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ_WRITE
Data Type	Tango::DEV_LONG
Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	true
Write hardware at init.	true
Read allowed for	All states
Write NOT allowed for	<ul style="list-style-type: none">• DISABLE• RUNNING• FAULT

Attribute Properties	
label	Number of Exposures
unit	
standard unit	
display unit	
format	%6d
max_value	
min_value	1
max_alarm	
min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

Attribute Event Criteria	
Periodic	Not set
Relative Change	Not set
Absolute Change	Not set
Archive Periodic	Not set
Archive Relative Change	Not set
Archive Absolute Change	Not set
Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	Not set

Attribute DelayTime :

Delay in seconds between the external trigger and the start of image acquisition. \nIt only applies in External Trigger mode

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ_WRITE
Data Type	Tango::DEV_DOUBLE
Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	true

Attribute Properties	
label	Delay Time
unit	s
standard unit	
display unit	
format	%6.4f
max_value	
min_value	0
max_alarm	

Attribute Event Criteria	
Periodic	Not set
Relative Change	Not set
Absolute Change	Not set
Archive Periodic	Not set
Archive Relative Change	Not set

Write hardware at init.	true
Read allowed for	All states
Write NOT allowed for	<ul style="list-style-type: none"> • DISABLE • RUNNING • FAULT

min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

Archive Absolute Change	Not set
Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	Not set

Attribute ShutterEnable :

Enable the shutter control by the detector.

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ_WRITE
Data Type	Tango::DEV_BOOLEAN
Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	true
Write hardware at init.	true
Read allowed for	All states
Write NOT allowed for	<ul style="list-style-type: none"> • DISABLE • RUNNING • FAULT

Attribute Properties	
label	Enable Shutter Control
unit	
standard unit	
display unit	
format	
max_value	
min_value	
max_alarm	
min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

Attribute Event Criteria	
Periodic	Not set
Relative Change	Not set
Absolute Change	Not set
Archive Periodic	Not set
Archive Relative Change	Not set
Archive Absolute Change	Not set
Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	Not set

Attribute TriggerMode :

The possible trigger modes for the Pilatus detector are:\n

\n 0 = Internal (external signal not used)\n

\n 1 = External Enable (count while external trigger line is high, readout on high to low transition)\n
 \n 2 = External Trigger (begin acquisition sequence on high to low transition of external trigger line)\n
 \n 3 = Multiple External Trigger (high to low transition on external signal triggers a single acquisition for the programmed exposure time)\n

\nThe 4 modes correspond directly to the camserver \n commands Exposure, ExtEnable, ExtTrigger, and ExtMTrigger respectively.\n

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ_WRITE
Data Type	Tango::DEV_SHORT
Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	true
Write hardware at init.	true
Read allowed for	All states
Write NOT allowed for	<ul style="list-style-type: none"> • DISABLE • RUNNING • FAULT

Attribute Properties	
label	Trigger Mode
unit	
standard unit	
display unit	
format	%1d
max_value	3
min_value	0
max_alarm	
min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

Attribute Event Criteria	
Periodic	Not set
Relative Change	Not set
Absolute Change	Not set
Archive Periodic	Not set
Archive Relative Change	Not set
Archive Absolute Change	Not set
Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	Not set

Attribute MXparameters :

The crystallographic parameters in the image header.\nPossible parameter names are:\nWavelength, Energy_range, Detector_distance, ... (see\nPilatus manual for a complete list).

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ
Data Type	Tango::DEV_STRING
Display Level	OPERATOR
Inherited	false

Attribute Properties	
label	MX parameters
unit	
standard unit	
display unit	
format	

Attribute Event Criteria	
Periodic	Not set
Relative Change	Not set
Absolute Change	Not set

Abstract	false
Polling Period	Not polled
Memorized	Not set
Read allowed for	All states

max_value	
min_value	
max_alarm	
min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

Archive Periodic	Not set
Archive Relative Change	Not set
Archive Absolute Change	Not set
Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	Not set

Attribute UseRamDisk :

When true, will force image file to be written to /ramdisk.\nTherefore, attribute FileDir will be ignored.

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ_WRITE
Data Type	Tango::DEV_BOOLEAN
Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	true
Write hardware at init.	true
Read allowed for	All states
Write allowed for	All states

Attribute Properties	
label	Use RAM Disk
unit	
standard unit	
display unit	
format	
max_value	
min_value	
max_alarm	
min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

Attribute Event Criteria	
Periodic	Not set
Relative Change	Not set
Absolute Change	Not set
Archive Periodic	Not set
Archive Relative Change	Not set
Archive Absolute Change	Not set
Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	Not set

Attribute FileDir :

Path to the detector image files.

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ_WRITE
Data Type	Tango::DEV_STRING
Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	true
Write hardware at init.	true
Read allowed for	All states
Write NOT allowed for	<ul style="list-style-type: none"> • DISABLE • RUNNING • FAULT

Attribute Properties	
label	Image File Path
unit	
standard unit	
display unit	
format	
max_value	
min_value	
max_alarm	
min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

Attribute Event Criteria	
Periodic	Not set
Relative Change	Not set
Absolute Change	Not set
Archive Periodic	Not set
Archive Relative Change	Not set
Archive Absolute Change	Not set
Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	Not set

Attribute FilePrefix :

The prefix of the image files to be created.\n\nThe full image file name will be composed as\n\n\n**prefix_number.postfix** \n\n\nwhen acquiring images.

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ_WRITE
Data Type	Tango::DEV_STRING
Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	true
Write hardware	true

Attribute Properties	
label	Image File Prefix
unit	
standard unit	
display unit	
format	
max_value	
min_value	
max_alarm	

Attribute Event Criteria	
Periodic	Not set
Relative Change	Not set
Absolute Change	Not set
Archive Periodic	Not set
Archive Relative Change	Not set

at init.	
Read allowed for	All states
Write NOT allowed for	<ul style="list-style-type: none"> • DISABLE • RUNNING • FAULT

min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

Archive Absolute Change	Not set
Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	Not set

Attribute FileStartNum :

The file number used when taking an image.\n

\nWhen taking more than one frame, the detector creates\nthe file numbers automatically from this number onwards.\n

\nWhen saving multiple images (NImages>1) camserver has its own rules for \ncreasing the names of the individual files.\n\nThe following examples shows the interpretation of the basename.\n

\nBasename - Files produced\n

\ntest6.tif - test6_00000.tif, test6_00001.tif, ... \n

\ntest6_.tif - test6_00000.tif, test6_00001.tif, ... \n

\ntest6_00008.tif - test6_00008.tif, test6_00009.tif, ... \n

\ntest6_2_00035.tif - test6_2_00035.tif, test6_2_00036.tif, ... \n

\n\nThe numbers following the last `_` are taken as a format template, \nand as a start value. \n\nThe format is also constrained by the requested number of images.

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ_WRITE
Data Type	Tango::DEV_LONG
Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	true
Write hardware at init.	true
Read allowed for	All states
Write NOT allowed for	<ul style="list-style-type: none"> • RUNNING

Attribute Properties	
label	Image File Number
unit	
standard unit	
display unit	
format	%5d
max_value	
min_value	
max_alarm	
min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

Attribute Event Criteria	
Periodic	Not set
Relative Change	Not set
Absolute Change	Not set
Archive Periodic	Not set
Archive Relative Change	Not set
Archive Absolute Change	Not set
Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	Not set

Attribute FilePostfix :

The Pilatus detector allows the following postfix:\n

\n.tif, .edf, .img, .cbf\n

\nThe postfix determines the image format for the saved\nimage files.\n

\nThe camserver uses the file extension to determine what format to save \nthe files in.\n

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ_WRITE
Data Type	Tango::DEV_STRING
Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	true
Write hardware at init.	true
Read allowed for	All states
Write NOT allowed for	<ul style="list-style-type: none"> • DISABLE • RUNNING • FAULT

Attribute Properties	
label	Image File Postfix
unit	
standard unit	
display unit	
format	
max_value	
min_value	
max_alarm	
min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

Attribute Event Criteria	
Periodic	Not set
Relative Change	Not set
Absolute Change	Not set
Archive Periodic	Not set
Archive Relative Change	Not set
Archive Absolute Change	Not set
Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	Not set

Attribute LastImageTaken :

The name of the last image file written.

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ

Attribute Properties	
label	Last Image File Name

Attribute Event Criteria	
Periodic	Not set
Relative Change	Not

Data Type	Tango::DEV_STRING
Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	Not set
Read allowed for	All states

unit	standard unit
display unit	
format	
max_value	
min_value	
max_alarm	
min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

Absolute Change	Not set
Archive Periodic	Not set
Archive Relative Change	Not set
Archive Absolute Change	Not set
Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	Not set

Attribute Energy :

Simplified method to set gain and threshold for the detector. The threshold will be set to half the photon energy. The detector loads the corresponding trim files when changing the energy. Modifying the detector setting will take several seconds.

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ_WRITE
Data Type	Tango::DEV_LONG
Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	true
Write hardware at init.	Not set
Read allowed for	All states
Write NOT allowed for	<ul style="list-style-type: none"> • DISABLE • RUNNING • FAULT

Attribute Properties	
label	Photon Energy
unit	eV
standard unit	
display unit	
format	%5d
max_value	
min_value	
max_alarm	
min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

Attribute Event Criteria	
Periodic	Not set
Relative Change	Not set
Absolute Change	Not set
Archive Periodic	Not set
Archive Relative Change	Not set
Archive Absolute Change	Not set
Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	Not set

Attribute Threshold :

The threshold energy for the detector. The detector loads the corresponding trim files when changing the energy threshold. The threshold energy will always be set together with the gain. Modifying the detector setting will take several seconds.

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ_WRITE
Data Type	Tango::DEV_LONG
Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	true
Write hardware at init.	Not set
Read allowed for	All states
Write NOT allowed for	<ul style="list-style-type: none"> • DISABLE • RUNNING • FAULT

Attribute Properties	
label	Threshold Energy
unit	eV
standard unit	
display unit	
format	%5d
max_value	14337
min_value	2113
max_alarm	
min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

Attribute Event Criteria	
Periodic	Not set
Relative Change	Not set
Absolute Change	Not set
Archive Periodic	Not set
Archive Relative Change	Not set
Archive Absolute Change	Not set
Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	Not set

Attribute Gain :

The gain controls the value of V_{rf} , which determines the shaping time and gain of the input amplifiers. The allowed gain values for the Pilatus detector are:
 0 = lowG = Fastest shaping time (~125ns) and lowest gain.
 1 = midG = Medium shaping time (~200ns) and medium gain.
 2 = highG = Slow shaping time (~400ns) and high gain.
 3 = uhighG = Slowest peaking time and highest gain.
 The gain will always be set together with the threshold energy. Modifying the detector setting will take several seconds.

Attribute Definition	
	Scalar

Attribute Properties	
	Gain (Energy)

Attribute Event Criteria	
Periodic	Not set

Attribute Type	
R/W Type	READ_WRITE
Data Type	Tango::DEV_SHORT
Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	true
Write hardware at init.	Not set
Read allowed for	All states
Write NOT allowed for	<ul style="list-style-type: none"> • DISABLE • RUNNING • FAULT

label	Range)
unit	
standard unit	
display unit	
format	%1d
max_value	3
min_value	0
max_alarm	
min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

Relative Change	Not set
Absolute Change	Not set
Archive Periodic	Not set
Archive Relative Change	Not set
Archive Absolute Change	Not set
Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	Not set

Attribute Rol :

0 -- full detector (default)\nC2 -- central 2 modules in 2M, 6M or 12M format\nC12 -- central 12 modules in 2M format\nC18 -- central 18 modules in 6M or 12M format\nL1 -- left central module in 1M format\nL3 -- left central 3 modules in 1M format\nR1 -- right central module in 1M format\nR3 -- right central 3 modules in 1M format

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ_WRITE
Data Type	Tango::DEV_STRING
Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	Not set
Read allowed for	All states
Write allowed for	All states

Attribute Properties	
label	
unit	
standard unit	
display unit	
format	
max_value	
min_value	
max_alarm	
min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

Attribute Event Criteria	
Periodic	Not set
Relative Change	Not set
Absolute Change	Not set
Archive Periodic	Not set
Archive Relative Change	Not set
Archive Absolute Change	Not set
Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	Not set

Attribute LastImagePath :

The last path where an image was written.

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ
Data Type	Tango::DEV_STRING
Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	Not set
Read allowed for	All states

Attribute Properties	
label	Last Image Path
unit	
standard unit	
display unit	
format	
max_value	
min_value	
max_alarm	
min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

Attribute Event Criteria	
Periodic	Not set
Relative Change	Not set
Absolute Change	Not set
Archive Periodic	Not set
Archive Relative Change	Not set
Archive Absolute Change	Not set
Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	false

Pilatus Class States	
Name	Description
ON	The detector is ready to take images.
DISABLE	The device is disconnected from the camserver.
RUNNING	An acquisition is running.
FAULT	An error occurred on the detector during an acquisition. Confirm with a Reset command or execute the next command.