

ImgBeamAnalyzer Tango Cpp Class

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Contact : at synchrotron-soleil.fr - leclercq
 Class Family : Calculation
 Platform : All Platforms
 Bus : Not Applicable
 Manufacturer : none
 Manufacturer ref. :

ImgBeamAnalyzer Class Inheritance :

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

ImgBeamAnalyzer Class Description :

The device analyzes images accessible on another remote device, and proposes the following (selectable) features :

- in preprocessing : rotation, mirroring, gamma correction
- ROI (Region Of Interest), either user-defined or automatic by blob analysis
- image moments (mean intensity, centroid, variance, skew)
- maximal intensity (to monitor saturation for example)
- ellipse fitting when automatic ROI is desired
- profiles with corresponding gaussian fit
- 2D gaussian fit of the image

ImgBeamAnalyzer Properties :

There is no class properties

Device Properties

Name	Description	Type	Default Value
AutoROIMagFactorX	initial value of AutoROIMagFactorX attribute. if not defined, it is set to 1	double	1
AutoROIMagFactorY	initial value of AutoROIMagFactorY attribute. if not defined, it is set to 1	double	none
AutoROIMethod	the method used for computing the AutoROI. can be `PROFILES` or `THRESHOLD`. PROFILES method means the AutoROI is computed from the profiles fitted to gaussian functions. THRESHOLD means that the image is first thresholded using the `AutoROIthreshold` attribute then the largest blob is selected.	String	PROFILES
AutoStart	if set to `true` and mode is `CONTINUOUS`, the computation starts automatically when the device is launched	boolean	true
BitsPerPixel	the initial value of the BitsPerPixel attribute	int	none
ComputationPeriod	the initial value of the ComputationPeriod attribute	int	1000
Enable2DGaussianFit	the initial value of the Enable2DGaussianFit attribute	boolean	false
EnableAutoROI	the initial value of the EnableAutoROI attribute	boolean	false
EnableHistogram	the initial value of the EnableHistogram attribute	boolean	none
EnableImageStats	the initial value of the EnableImageStats attribute	boolean	true
EnableProfiles	the initial value of the EnableProfiles attribute	boolean	true
EnableUserROI	the initial value of the EnableUserROI attribute	boolean	true
GammaCorrection	the initial value of the GammaCorrection attribute	double	none
HistogramNbBins	the initial value of the HistogramNbBins attribute	int	none
HistogramRangeMax	the upper bound of the histogram bins. must be $\leq 2^{\text{BitsPerPixel}}$	int	none
HistogramRangeMin	the lower bound of the histogram bins. must be ≥ 0	int	none
HorizontalFlip	the initial value of the HorizontalFlip attribute	boolean	none
ImageAttributeName	the name of the image attribute to take in ImageDevice	String	none
ImageCounterAttrName	the name of the imageCounter attribute to take in ImageDevice	String	none
ImageDevice	the device from which the image is taken	String	none
Mode	ONESHOT or CONTINUOUS	String	ONESHOT
OpticalMagnification	the initial value of the OpticalMagnification attribute	double	none
PixelSizeX	the initial value of the PixelSizeX attribute	double	none

PixelSizeY	the initial value of the PixelSizeY attribute	double	none
ProfileFitFixedBg	the initial value of the ProfileFitFixedBg attribute	boolean	none
Rotation	the initial value of the Rotation attribute	int	none
UserROIOriginX	The memorized value of userROIOriginX attribute when SaveCurrentSettings command is called.	int	none
UserROIOriginY	The memorized value of userROIOriginY attribute when SaveCurrentSettings command is called.	int	none
UserROIWidth	The memorized value of userROIWidth attribute when SaveCurrentSettings command is called.	int	none
UserROIHeight	The memorized value of userROIHeight attribute when SaveCurrentSettings command is called.	int	none
ChamberOffsetX	the initial value of the ChamberOffsetX attribute	double	none
ChamberOffsetY	the initial value of the ChamberOffsetY attribute	double	none
CentroidSaturationRegionSide	the initial value of the CentroidSaturationRegionSide attribute	int	5
CentroidSaturationRegionThreshold	the initial value of the CentroidSaturationRegionThreshold attribute	int	5

ImgBeamAnalyzer 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.
Start	DEV_VOID	DEV_VOID	OPERATOR	None.
Stop	DEV_VOID	DEV_VOID	OPERATOR	None.
Process	DEV_VOID	DEV_VOID	OPERATOR	None.
SaveCurrentSettings	DEV_VOID	DEV_VOID	OPERATOR	None.
GetVersionNumber	DEV_VOID	DEV_STRING	OPERATOR	None.

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	true	..
Polling Period	Not polled	..
Command allowed for	All states	..

Command Start :

Start 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 Stop :

Stop 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 Process :

Process Definition		
Input Argument	Tango::DEV_VOID	

Output Argument DisplayLevel	Tango::DEV_VOID OPERATOR	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
		..
Command allowed for	All states	..

Command SaveCurrentSettings :

SaveCurrentSettings 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 GetVersionNumber :

GetVersionNumber Definition		
Input Argument	Tango::DEV_VOID	
Output Argument	Tango::DEV_STRING	the Device Server version number
DisplayLevel	OPERATOR	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
		..
Command allowed for	All states	..

ImgBeamAnalyzer Class Attributes							
Name	Inherited	Abstract	Attr. type	R/W type	Data type	Level	Description
EnableImageStats	false	false	Scalar	READ_WRITE	Tango::DEV_BOOLEAN	OPERATOR	enables the computation of image moments (centroid, variance, skew) and maximal intensity
EnableProfiles	false	false	Scalar	READ_WRITE	Tango::DEV_BOOLEAN	OPERATOR	enables the computation of the X and Y profiles, and the corresponding gaussian fit
							enables the computation of

EnableHistogram	false	false	Scalar	READ_WRITE	Tango::DEV_BOOLEAN	OPERATOR	the histogram of the image
EnableUserROI	false	false	Scalar	READ_WRITE	Tango::DEV_BOOLEAN	OPERATOR	enables the use of the UserROIOriginX, UserROIOriginY, UserROIWidth, UserROIHeight to define the ROI that will be processed
EnableAutoROI	false	false	Scalar	READ_WRITE	Tango::DEV_BOOLEAN	OPERATOR	if true, the ROI is detected automatically to encompass the biggest particle in the image
Enable2DGaussianFit	false	false	Scalar	READ_WRITE	Tango::DEV_BOOLEAN	OPERATOR	enables the 2D gaussian fitting
ComputationPeriod	false	false	Scalar	READ_WRITE	Tango::DEV_LONG	OPERATOR	period in millisecond at which a new image is read and processed
EstimComputTime	false	false	Scalar	READ	Tango::DEV_LONG	OPERATOR	time spent, in ms, to process the image
Rotation	false	false	Scalar	READ_WRITE	Tango::DEV_LONG	OPERATOR	the rotation applied in preprocessing. only multiple of 90 are recognized as valid values
HorizontalFlip	false	false	Scalar	READ_WRITE	Tango::DEV_BOOLEAN	OPERATOR	if true, the image is flipped horizontally in preprocessing, after having been rotated
BitsPerPixel	false	false	Scalar	READ_WRITE	Tango::DEV_LONG	OPERATOR	the pixel depth for significative information in the image (usually 8 or 10).nit is used only in the gamma correction to keep a constant dynamic range of pixel values when raising these values to a power
HistogramNbBins	false	false	Scalar	READ_WRITE	Tango::DEV_LONG	OPERATOR	the number of bins in the histogram. if set to 0, the maximum possible number of bins is used
HistogramRangeMin	false	false	Scalar	READ_WRITE	Tango::DEV_LONG	OPERATOR	the lower bound of the histogram bins. must be >= 0
HistogramRangeMax	false	false	Scalar	READ_WRITE	Tango::DEV_LONG	OPERATOR	the upper bound of the histogram bins. must be <= 2 ^{BitsPerPixel} - 1\nif set to 0, the maximal possible value is taken (2 ^{BitsPerPixel} - 1)
GammaCorrection	false	false	Scalar	READ_WRITE	Tango::DEV_DOUBLE	OPERATOR	the gamma value of the camera, used to correct the ROI image by raising to its inverse power
AutoROIMagFactorX	false	false	Scalar	READ_WRITE	Tango::DEV_DOUBLE	OPERATOR	the scaling factor in the X direction applied to the AutoROI
AutoROIMagFactorY	false	false	Scalar	READ_WRITE	Tango::DEV_DOUBLE	OPERATOR	the scaling factor in the Y direction applied to the AutoROI
AutoROIThreshold	false	false	Scalar	READ_WRITE	Tango::DEV_LONG	OPERATOR	the threshold, used only if AutoROIMethod is set to THRESHOLD
BgSubstraction	false	false	Scalar	READ_WRITE	Tango::DEV_DOUBLE	OPERATOR	the scalar value to subtract to each pixel
AlarmZone	false	false	Scalar	READ_WRITE	Tango::DEV_LONG	OPERATOR	if EnableAutoROI is set to true and if the distance between a beam box corner and the border of the image falls below this threshold, attributes quality are set to

							ALARM
PixelSizeX	false	false	Scalar	READ_WRITE	Tango::DEV_DOUBLE	OPERATOR	the correspondence between pixel width and mm
PixelSizeY	false	false	Scalar	READ_WRITE	Tango::DEV_DOUBLE	OPERATOR	the correspondence between pixel height and mm
OpticalMagnification	false	false	Scalar	READ_WRITE	Tango::DEV_DOUBLE	OPERATOR	the magnification factor of the optical system (no unit)
ProfileFitFixedBg	false	false	Scalar	READ_WRITE	Tango::DEV_BOOLEAN	OPERATOR	if true, the background noise is estimated from the border of the whole image and this background value stays fixed during the fit
LineProfileOriginX	false	false	Scalar	READ_WRITE	Tango::DEV_LONG	OPERATOR	the X coordinate of the origin point of the line profile
LineProfileOriginY	false	false	Scalar	READ_WRITE	Tango::DEV_LONG	OPERATOR	the Y coordinate of the origin point of the line profile
LineProfileEndX	false	false	Scalar	READ_WRITE	Tango::DEV_LONG	OPERATOR	the X coordinate of the endpoint of the line profile
LineProfileEndY	false	false	Scalar	READ_WRITE	Tango::DEV_LONG	OPERATOR	the Y coordinate of the endpoint of the line profile
LineProfileThickness	false	false	Scalar	READ_WRITE	Tango::DEV_LONG	OPERATOR	defines the number of lines used to average a local line profile
ChamberOffsetX	false	false	Scalar	READ_WRITE	Tango::DEV_DOUBLE	OPERATOR	An offset to be subtracted to CentroidX and XProjFitCenter and get Chamber*
ChamberOffsetY	false	false	Scalar	READ_WRITE	Tango::DEV_DOUBLE	OPERATOR	An offset to be subtracted to CentroidY and YProjFitCenter and get Chamber*
ChamberCentroidX	false	false	Scalar	READ	Tango::DEV_DOUBLE	OPERATOR	the X coordinate of the centroid, relative to Chamber.
ChamberCentroidY	false	false	Scalar	READ	Tango::DEV_DOUBLE	OPERATOR	the Y coordinate of the centroid, relative to Chamber.
ChamberXProjFitCenter	false	false	Scalar	READ	Tango::DEV_DOUBLE	OPERATOR	the X position of the center of the fitted gaussian corresponding to the X projection relative to Chamber
ChamberYProjFitCenter	false	false	Scalar	READ	Tango::DEV_DOUBLE	OPERATOR	the Y position of the center of the fitted gaussian corresponding to the Y projection relative to Chamber
UserROIOriginX	false	false	Scalar	READ_WRITE	Tango::DEV_LONG	OPERATOR	the X coordinate of the origin of the ROI (up-left corner) in pixels
UserROIOriginY	false	false	Scalar	READ_WRITE	Tango::DEV_LONG	OPERATOR	the Y coordinate of the origin of the ROI (up-left corner)
UserROIWidth	false	false	Scalar	READ_WRITE	Tango::DEV_LONG	OPERATOR	the width of the ROI in pixels
UserROIHeight	false	false	Scalar	READ_WRITE	Tango::DEV_LONG	OPERATOR	the height of the ROI in pixels
AutoROIFound	false	false	Scalar	READ	Tango::DEV_BOOLEAN	OPERATOR	true if the AutoROI algorithm was used and did found a beam inside the image
AutoROIOriginX	false	false	Scalar	READ	Tango::DEV_LONG	OPERATOR	the X coordinate of the origin of the ROI (up-left corner) in pixels

AutoROIOriginY	false	false	Scalar	READ	Tango::DEV_LONG	OPERATOR	the Y coordinate of the origin of the ROI (up-left corner) in pixels
AutoROIWidth	false	false	Scalar	READ	Tango::DEV_LONG	OPERATOR	the width of the automatically detected ROI
AutoROIHeight	false	false	Scalar	READ	Tango::DEV_LONG	OPERATOR	the height of the automatically detected ROI
MaxIntensity	false	false	Scalar	READ	Tango::DEV_DOUBLE	OPERATOR	the maximal intensity inside the ROI
MeanIntensity	false	false	Scalar	READ	Tango::DEV_DOUBLE	OPERATOR	the mean intensity inside the ROI
CentroidX	false	false	Scalar	READ	Tango::DEV_DOUBLE	OPERATOR	the X coordinate of the centroid
CentroidY	false	false	Scalar	READ	Tango::DEV_DOUBLE	OPERATOR	the Y coordinate of the centroid
CentroidSaturated	false	false	Scalar	READ	Tango::DEV_BOOLEAN	OPERATOR	Is the pixel area around the centroid saturated?
CentroidSaturationRegionSide	false	false	Scalar	READ_WRITE	Tango::DEV_LONG	OPERATOR	
CentroidSaturationRegionThreshold	false	false	Scalar	READ_WRITE	Tango::DEV_LONG	OPERATOR	
VarianceX	false	false	Scalar	READ	Tango::DEV_DOUBLE	OPERATOR	the variance along the X axis
VarianceY	false	false	Scalar	READ	Tango::DEV_DOUBLE	OPERATOR	the variance along the Y axis
CovarianceXY	false	false	Scalar	READ	Tango::DEV_DOUBLE	OPERATOR	the covariance with respect to the X and Y axis
CorrelationXY	false	false	Scalar	READ	Tango::DEV_DOUBLE	OPERATOR	the correlation coefficient between the X and Y axes
SkewX	false	false	Scalar	READ	Tango::DEV_DOUBLE	OPERATOR	the skew along the X axis
SkewY	false	false	Scalar	READ	Tango::DEV_DOUBLE	OPERATOR	the skew along the Y axis
SkewX2Y	false	false	Scalar	READ	Tango::DEV_DOUBLE	OPERATOR	the skew cross coefficient for $X\bar{I}_i^{1/2}.Y$
SkewXY2	false	false	Scalar	READ	Tango::DEV_DOUBLE	OPERATOR	the skew cross coefficient for $X.Y\bar{I}_i^{1/2}$
XProjFitConverged	false	false	Scalar	READ	Tango::DEV_BOOLEAN	OPERATOR	true of the projection fitting algorithm has converged
XProjFitCenter	false	false	Scalar	READ	Tango::DEV_DOUBLE	OPERATOR	the X position of the center of the fitted gaussian corresponding to the X projection
XProjFitMag	false	false	Scalar	READ	Tango::DEV_DOUBLE	OPERATOR	the magnitude of fitted gaussian corresponding to the X projection
XProjFitSigma	false	false	Scalar	READ	Tango::DEV_DOUBLE	OPERATOR	the standard deviation of fitted gaussian corresponding to the X projection
XProjFitFWHM	false	false	Scalar	READ	Tango::DEV_DOUBLE	OPERATOR	the full width at half maximum of the fitted gaussian corresponding to the X projection, calculated as approximately $2.35 * XProjFitSigma$
XProjFitBG	false	false	Scalar	READ	Tango::DEV_DOUBLE	OPERATOR	the background of fitted gaussian corresponding to the X projection
XProjFitChi2	false	false	Scalar	READ	Tango::DEV_DOUBLE	OPERATOR	the chi-2 of fitted gaussian corresponding to the X projection
YProjFitConverged	false	false	Scalar	READ	Tango::DEV_BOOLEAN	OPERATOR	true of the projection fitting algorithm has converged
YProjFitCenter	false	false	Scalar	READ	Tango::DEV_DOUBLE	OPERATOR	the Y position of the center of the fitted gaussian corresponding to the Y projection

YProjFitMag	false	false	Scalar	READ	Tango::DEV_DOUBLE	OPERATOR	the magnitude of fitted gaussian corresponding to the Y projection
YProjFitSigma	false	false	Scalar	READ	Tango::DEV_DOUBLE	OPERATOR	the standard deviation of fitted gaussian corresponding to the Y projection
YProjFitFWHM	false	false	Scalar	READ	Tango::DEV_DOUBLE	OPERATOR	the full width at half maximum of the fitted gaussian corresponding to the Y projection, calculated approximately as $2.35 * YProjFitSigma$
YProjFitBG	false	false	Scalar	READ	Tango::DEV_DOUBLE	OPERATOR	the background of fitted gaussian corresponding to the Y projection
YProjFitChi2	false	false	Scalar	READ	Tango::DEV_DOUBLE	OPERATOR	the chi-2 of fitted gaussian corresponding to the Y projection
LineProfileFitConverged	false	false	Scalar	READ	Tango::DEV_BOOLEAN	OPERATOR	true of the profile fitting algorithm has converged
LineProfileFitCenter	false	false	Scalar	READ	Tango::DEV_DOUBLE	OPERATOR	the Y position of the center of the fitted gaussian corresponding to the line profile
LineProfileFitMag	false	false	Scalar	READ	Tango::DEV_DOUBLE	OPERATOR	the magnitude of fitted gaussian corresponding to the line profile
LineProfileFitSigma	false	false	Scalar	READ	Tango::DEV_DOUBLE	OPERATOR	the standard deviation of fitted gaussian corresponding to the line profile
LineProfileFitFWHM	false	false	Scalar	READ	Tango::DEV_DOUBLE	OPERATOR	the full width at half maximum of the fitted gaussian corresponding to the line profile, calculated approximately as $2.35 * LineProfileFitSigma$
LineProfileFitBG	false	false	Scalar	READ	Tango::DEV_DOUBLE	OPERATOR	the background of fitted gaussian corresponding to the line profile
LineProfileFitChi2	false	false	Scalar	READ	Tango::DEV_DOUBLE	OPERATOR	the chi-2 of fitted gaussian corresponding to the line profile
GaussianFitConverged	false	false	Scalar	READ	Tango::DEV_BOOLEAN	OPERATOR	true of the 2D gaussian fitting algorithm has converged
GaussianFitMagnitude	false	false	Scalar	READ	Tango::DEV_DOUBLE	OPERATOR	the magnitude of the fitted gaussian
GaussianFitCenterX	false	false	Scalar	READ	Tango::DEV_DOUBLE	OPERATOR	the X coordinate of the centroid of the 2D gaussian fitted to the image
GaussianFitCenterY	false	false	Scalar	READ	Tango::DEV_DOUBLE	OPERATOR	the Y coordinate of the centroid of the 2D gaussian fitted to the image
GaussianFitVarianceX	false	false	Scalar	READ	Tango::DEV_DOUBLE	OPERATOR	the variance of the 2D gaussian along the X axis
GaussianFitVarianceY	false	false	Scalar	READ	Tango::DEV_DOUBLE	OPERATOR	the variance of the 2D gaussian along the Y axis
GaussianFitCovarianceXY	false	false	Scalar	READ	Tango::DEV_DOUBLE	OPERATOR	the covariance of the 2D gaussian
GaussianFitMajorAxisFWHM	false	false	Scalar	READ	Tango::DEV_DOUBLE	OPERATOR	the FWHM along the major axis of the fitted gaussian, calculated approximately as $2.35 * \sqrt{GaussianFitVarianceX}$
GaussianFitMinorAxisFWHM	false	false	Scalar	READ	Tango::DEV_DOUBLE	OPERATOR	the FWHM along the minor axis of the fitted gaussian, calculated approximately

							as 2.35 * sqrt(GaussianFitVarianceY)
GaussianFitTilt	false	false	Scalar	READ	Tango::DEV_DOUBLE	OPERATOR	the angle made by the major axis of the gaussian and the X axis
GaussianFitBG	false	false	Scalar	READ	Tango::DEV_DOUBLE	OPERATOR	the background of the fitted gaussian
GaussianFitChi2	false	false	Scalar	READ	Tango::DEV_DOUBLE	OPERATOR	the chi-2 of the fitted gaussian
Fit1DNbIterMax	false	false	Scalar	READ_WRITE	Tango::DEV_LONG	EXPERT	the maximal number of iteration to converge to a solution
Fit1DMaxRelChange	false	false	Scalar	READ_WRITE	Tango::DEV_DOUBLE	EXPERT	optimization stops when the relative change between 2 iterations falls below this threshold
Fit2DNbIterMax	false	false	Scalar	READ_WRITE	Tango::DEV_LONG	EXPERT	the maximal number of iteration to converge to a solution
Fit2DMaxRelChange	false	false	Scalar	READ_WRITE	Tango::DEV_DOUBLE	EXPERT	optimization stops when the relative change between 2 iterations falls below this threshold
XProjFitNbIter	false	false	Scalar	READ	Tango::DEV_LONG	EXPERT	the number of iterations needed to converge to the fitted profile
XProjFitRelChange	false	false	Scalar	READ	Tango::DEV_DOUBLE	EXPERT	the relative change in the fit parameters between the two last iterations
YProjFitNbIter	false	false	Scalar	READ	Tango::DEV_LONG	EXPERT	the number of iterations needed to converge to the fitted profile
YProjFitRelChange	false	false	Scalar	READ	Tango::DEV_DOUBLE	EXPERT	the relative change in the fit parameters between the two last iterations
LineProfileFitNbIter	false	false	Scalar	READ	Tango::DEV_LONG	EXPERT	the number of iterations needed to converge to the fitted profile
LineProfileFitRelChange	false	false	Scalar	READ	Tango::DEV_DOUBLE	EXPERT	the relative change in the fit parameters between the two last iterations
GaussianFitNbIter	false	false	Scalar	READ	Tango::DEV_LONG	EXPERT	the number of iterations needed to converge to the fitted image
GaussianFitRelChange	false	false	Scalar	READ	Tango::DEV_DOUBLE	EXPERT	the relative change in the fit parameters between the two last iterations
RmsX	false	false	Scalar	READ	Tango::DEV_DOUBLE	OPERATOR	the variance square root along the X axis
RmsY	false	false	Scalar	READ	Tango::DEV_DOUBLE	OPERATOR	the variance square root along the Y axis
SumImagePixels	false	false	Scalar	READ	Tango::DEV_DOUBLE	EXPERT	Represents the total sum of the image pixels.\n
XProj	false	false	Spectrum	READ	Tango::DEV_DOUBLE	OPERATOR	the mean value along the X axis
XProjFitted	false	false	Spectrum	READ	Tango::DEV_DOUBLE	EXPERT	the gaussian fit result of XProj
XProjError	false	false	Spectrum	READ	Tango::DEV_DOUBLE	EXPERT	the fitted profile error along the X axis
YProj	false	false	Spectrum	READ	Tango::DEV_DOUBLE	OPERATOR	the mean value along the Y axis
YProjFitted	false	false	Spectrum	READ	Tango::DEV_DOUBLE	EXPERT	the gaussian fit result of XProj
YProjError	false	false	Spectrum	READ	Tango::DEV_DOUBLE	EXPERT	the fitted profile error along the Y axis
LineProfile	false	false	Spectrum	READ	Tango::DEV_DOUBLE	OPERATOR	the line profile values

LineProfileFitted	false	false	Spectrum	READ	Tango::DEV_DOUBLE	EXPERT	the fitted line profile
LineProfileError	false	false	Spectrum	READ	Tango::DEV_DOUBLE	EXPERT	the fitted line profile error
Histogram	false	false	Spectrum	READ	Tango::DEV_FLOAT	OPERATOR	
InputImage	false	false	Image	READ_WRITE	Tango::DEV_ULONG	OPERATOR	raw copy of the input image
ROIImage	false	false	Image	READ	Tango::DEV_ULONG	OPERATOR	the effective image on which are done all the calculation
LineProfileHelperImg	false	false	Image	READ	Tango::DEV_FLOAT	EXPERT	the intermediate image used in the calculation of the Line Profile. this corresponds to the input rectangle defined by origin, end and thickness, affine transformed to fit in a rectangular image. The columns of this image are averaged to give the LineProfile attribute
GaussianFitParameterCovariance	false	false	Image	READ	Tango::DEV_DOUBLE	EXPERT	the covariance matrix of the best fit parameters (7x7). the 7 parameters are ordered as [A, xc, yc, s_xx, s_xy, s_yy, b]

There is no dynamic attribute defined.

Attribute EnableImageStats :

enables the computation of image moments (centroid, variance, skew) and maximal intensity

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	Not set
Read allowed for	All states
Write allowed for	All states

Attribute Properties	
label	EnableImageStats
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 EnableProfiles :

enables the computation of the X and Y profiles, and the corresponding gaussian fit

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	Not set
Read allowed for	All states
Write allowed for	All states

Attribute Properties	
label	EnableProfiles
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 EnableHistogram :

enables the computation of the histogram of the image

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	Not set
Read allowed for	All states
Write allowed for	All states

Attribute Properties	
label	Enable Histogram
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 EnableUserROI :

enables the use of the UserROIOriginX, UserROIOriginY, UserROIWidth, UserROIHeight to define the ROI that will be processed

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ_WRITE
Data Type	Tango::DEV_BOOLEAN

Attribute Properties	
label	EnableUserROI
unit	
standard unit	

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

Display Level Inherited	OPERATOR false
Abstract	false
Polling Period	Not polled
Memorized	Not set
Read allowed for	All states
Write allowed for	All states

display unit	
format	
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 EnableAutoROI :

if true, the ROI is detected automatically to encompass the biggest particle in the image

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	Not set
Read allowed for	All states
Write allowed for	All states

Attribute Properties	
label	EnableAutoROI
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 Enable2DGaussianFit :

enables the 2D gaussian fitting

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	Not set

Attribute Properties	
label	Enable2DGaussianFit
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

Read allowed for	All states
Write allowed for	All states

min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

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 ComputationPeriod :

period in millisecond at which a new image is read and processed

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	Not set
Read allowed for	All states
Write allowed for	All states

Attribute Properties	
label	ComputationPeriod
unit	ms
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 EstimCompuTime :

time spent, in ms, to process the image

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

Attribute Properties	
label	EstimCompuTime
unit	ms
standard unit	
display unit	
format	%5d
max_value	
min_value	
max_alarm	
min_alarm	
max_warning	
min_warning	

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

delta_time	
delta_val	

Attribute Rotation :

the rotation applied in preprocessing. only multiple of 90 are recognized as valid values

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	Not set
Read allowed for	All states
Write allowed for	All states

Attribute Properties	
label	Rotation
unit	1/2
standard unit	
display unit	
format	%4d
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 HorizontalFlip :

if true, the image is flipped horizontally in preprocessing, after having been rotated

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	Not set
Read allowed for	All states
Write allowed for	All states

Attribute Properties	
label	HorizontalFlip
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 BitsPerPixel :

the pixel depth for significant information in the image (usually 8 or 10).nit is used only in the gamma correction to keep a constant dynamic range of pixel values when raising these values to a power

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	Not set
Read allowed for	All states
Write allowed for	All states

Attribute Properties	
label	BitsPerPixel
unit	
standard unit	
display unit	
format	%2d
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 HistogramNbBins :

the number of bins in the histogram. if set to 0, the maximum possible number of bins is used

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	Not set
Read allowed for	All states
Write allowed for	All states

Attribute Properties	
label	HistogramNbBins
unit	
standard unit	
display unit	
format	%4d
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 HistogramRangeMin :

the lower bound of the histogram bins. must be >= 0

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	Not set
Read allowed for	All states
Write allowed for	All states

Attribute Properties	
label	HistogramRange Min
unit	
standard unit	
display unit	
format	%4d
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 HistogramRangeMax :

the upper bound of the histogram bins. must be $\leq 2^{\text{BitsPerPixel}} - 1$ \nif set to 0, the maximal possible value is taken ($2^{\text{BitsPerPixel}} - 1$)

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	Not set
Read allowed for	All states
Write allowed for	All states

Attribute Properties	
label	HistogramRange Max
unit	
standard unit	
display unit	
format	%4d
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 GammaCorrection :

the gamma value of the camera, used to correct the ROI image by raising to its inverse power

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

Attribute Properties	
label	GammaCorrection
unit	
standard unit	

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

Display Level Inherited	OPERATOR false
Abstract	false
Polling Period	Not polled
Memorized	Not set
Read allowed for	All states
Write allowed for	All states

display unit	
format	%4.2f
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 AutoROIMagFactorX :

the scaling factor in the X direction applied to the AutoROI

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	Not set
Read allowed for	All states
Write allowed for	All states

Attribute Properties	
label	AutoROI Magnification Factor X
unit	
standard unit	
display unit	
format	%4.2f
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 AutoROIMagFactorY :

the scaling factor in the Y direction applied to the AutoROI

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

Attribute Properties	
label	AutoROI Magnification Factor Y
unit	
standard unit	
display unit	

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
Write allowed for	All states

format	%4.2f
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 AutoROIThreshold :

the threshold, used only if AutoROIMethod is set to THRESHOLD

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	Not set
Read allowed for	All states
Write allowed for	All states

Attribute Properties	
label	AutoROIThreshold
unit	
standard unit	
display unit	
format	%4d
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 BgSubstraction :

the scalar value to subtract to each pixel

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

Attribute Properties	
label	Background Substraction
unit	
standard unit	
display unit	
format	%5.2f
max_value	

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

Polling Period Memorized	Not polled Not set
Read allowed for	All states
Write allowed for	All states

min_value	
max_alarm	
min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

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 AlarmZone :

if EnableAutoROI is set to true and if the distance between a beam box corner and the border of the image falls below this threshold, attributes quality are set to ALARM

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	Not set
Read allowed for	All states
Write allowed for	All states

Attribute Properties	
label	AlarmZone
unit	pix
standard unit	
display unit	
format	%3d
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 PixelSizeX :

the correspondence between pixel width and mm

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	Not set
Read allowed for	All states

Attribute Properties	
label	PixelSizeX
unit	1/2mm/pix
standard unit	
display unit	
format	%5.2f
max_value	
min_value	
max_alarm	
min_alarm	
max_warning	

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

Write allowed for	All states
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min_warning	
delta_time	
delta_val	

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

Attribute PixelSizeY :

the correspondence between pixel height and mm

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	Not set
Read allowed for	All states
Write allowed for	All states

Attribute Properties	
label	PixelSizeY
unit	$\bar{i}_0 \frac{1}{2} \text{m/pix}$
standard unit	
display unit	
format	%5.2f
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 OpticalMagnification :

the magnification factor of the optical system (no unit)

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	Not set
Read allowed for	All states
Write allowed for	All states

Attribute Properties	
label	OpticalMagnification
unit	
standard unit	
display unit	
format	%5.2f
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 ProfileFitFixedBg :

if true, the background noise is estimated from the border of the whole image and this background value stays fixed during the fit

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	Not set
Read allowed for	All states
Write allowed for	All states

Attribute Properties	
label	Profiles Fit with Fixed Background
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 LineProfileOriginX :

the X coordinate of the origin point of the line profile

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	Not set
Read allowed for	All states
Write allowed for	All states

Attribute Properties	
label	LineProfile Origin X
unit	pix
standard unit	
display unit	
format	%4d
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 LineProfileOriginY :

the Y coordinate of the origin point of the line profile

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	Not set
Read allowed for	All states
Write allowed for	All states

Attribute Properties	
label	LineProfile Origin Y
unit	pix
standard unit	
display unit	
format	%4d
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 LineProfileEndX :

the X coordinate of the endpoint of the line profile

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	Not set
Read allowed for	All states
Write allowed for	All states

Attribute Properties	
label	LineProfile End X
unit	pix
standard unit	
display unit	
format	%4d
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 LineProfileEndY :

the Y coordinate of the endpoint of the line profile

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	Not set
Read allowed for	All states
Write allowed for	All states

Attribute Properties	
label	LineProfile End Y
unit	pix
standard unit	
display unit	
format	%4d
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 LineProfileThickness :

defines the number of lines used to average a local line profile

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	Not set
Read allowed for	All states
Write allowed for	All states

Attribute Properties	
label	LineProfile Thickness
unit	pix
standard unit	
display unit	
format	%4d
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 ChamberOffsetX :

An offset to be subtracted to CentroidX and XProjFitCenter and get Chamber*

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

Attribute Properties	
label	Chamber Center Offset X
unit	$\bar{i} \frac{1}{2}m$
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	Not set
Read allowed for	All states
Write allowed for	All states

display unit	
format	%6.2f
max_value	
min_value	
max_alarm	
min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

	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 ChamberOffsetY :

An offset to be subtracted to CentroidY and YProjFitCenter and get Chamber*

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	Not set
Read allowed for	All states
Write allowed for	All states

Attribute Properties	
label	Chamber Center Offset Y
unit	$\tilde{i}_z \frac{1}{2}m$
standard unit	
display unit	
format	%6.2f
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 ChamberCentroidX :

the X coordinate of the centroid, relative to Chamber.

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ
Data Type	Tango::DEV_DOUBLE

Attribute Properties	
label	Ch Centroid X
unit	$\tilde{i}_x \frac{1}{2}m$
standard unit	
display unit	

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

Display Level Inherited	OPERATOR false
Abstract	false
Polling Period	Not polled
Memorized	Not set
Read allowed for	All states

format	%10.2f
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 ChamberCentroidY :

the Y coordinate of the centroid, relative to Chamber.

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

Attribute Properties	
label	Ch Centroid Y
unit	$\bar{z} \frac{1}{2}m$
standard unit	
display unit	
format	%10.2f
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 ChamberXProjFitCenter :

the X position of the center of the fitted gaussian corresponding to the X projection relative to Chamber

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

Attribute Properties	
label	X Proj Fit Center
unit	$\bar{z} \frac{1}{2}m$
standard unit	
display unit	
format	%10.2f
max_value	
min_value	
max_alarm	
min_alarm	
max_warning	

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

min_warning	
delta_time	
delta_val	

Push DataReady event by user code	Not set
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Attribute ChamberYProjFitCenter :

the X position of the center of the fitted gaussian corresponding to the X projection relative to Chamber

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

Attribute Properties	
label	X Proj Fit Center
unit	$\bar{t}_c \frac{1}{2}m$
standard unit	
display unit	
format	%10.2f
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 UserROIOriginX :

the X coordinate of the origin of the ROI (up-left corner) in pixels

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	Not set
Read allowed for	All states
Write allowed for	All states

Attribute Properties	
label	User ROI Origin X
unit	pix
standard unit	
display unit	
format	%4d
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 UserROIOriginY :

the Y coordinate of the origin of the ROI (up-left corner)

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	Not set
Read allowed for	All states
Write allowed for	All states

Attribute Properties	
label	User ROI Origin Y
unit	pix
standard unit	
display unit	
format	%4d
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 UserROIWidth :

the width of the ROI in pixels

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	Not set
Read allowed for	All states
Write allowed for	All states

Attribute Properties	
label	User ROI Width
unit	pix
standard unit	
display unit	
format	%4d
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 UserROIHeight :

the height of the ROI in pixels

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	Not set
Read allowed for	All states
Write allowed for	All states

Attribute Properties	
label	User ROI Height
unit	pix
standard unit	
display unit	
format	%4d
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 AutoROIFound :

true if the AutoROI algorithm was used and did find a beam inside the image

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

Attribute Properties	
label	AutoROI Found
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 AutoROIOriginX :

the X coordinate of the origin of the ROI (up-left corner) in pixels

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ

Attribute Properties	
label	Auto ROI Origin X
unit	pix
standard unit	

Attribute Event Criteria	
Periodic	Not set
Relative Change	Not set

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

display unit	
format	%4d
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 AutoROIOriginY :

the Y coordinate of the origin of the ROI (up-left corner) in pixels

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

Attribute Properties	
label	Auto ROI Origin Y
unit	pix
standard unit	
display unit	
format	%4d
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 AutoROIWidth :

the width of the automatically detected ROI

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ
Data Type	Tango::DEV_LONG
Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	Not set

Attribute Properties	
label	Auto ROI Width
unit	pix
standard unit	
display unit	
format	%4d
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
Archive Absolute Change	Not set
Push Change event by user code	false

Read allowed for	All states
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min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

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

Attribute AutoROIHeight :

the height of the automatically detected ROI

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

Attribute Properties	
label	Auto ROI Height
unit	pix
standard unit	
display unit	
format	%4d
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 MaxIntensity :

the maximal intensity inside the ROI

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

Attribute Properties	
label	MaxIntensity
unit	
standard unit	
display unit	
format	%10d
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 MeanIntensity :

the mean intensity inside the ROI

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

Attribute Properties	
label	MeanIntensity
unit	
standard unit	
display unit	
format	%10.2f
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 CentroidX :

the X coordinate of the centroid

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

Attribute Properties	
label	CentroidX
unit	\bar{x} 1/2m
standard unit	
display unit	
format	%10.2f
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 CentroidY :

the Y coordinate of the centroid

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

Attribute Properties	
label	CentroidY
unit	$\bar{y} \frac{1}{2}m$
standard unit	
display unit	
format	%10.2f
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 CentroidSaturated :

Is the pixel area around the centroid saturated?

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

Attribute Properties	
label	CentroidSaturated
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 CentroidSaturationRegionSide :

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ_WRITE
Data Type	Tango::DEV_LONG

Attribute Properties	
label	
unit	
standard unit	

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

Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	Not set
Read allowed for	All states
Write allowed for	All states

display unit
format
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 CentroidSaturationRegionThreshold :

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	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 VarianceX :

the variance along the X axis

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

Attribute Properties	
label	VarianceX
unit	$\bar{i}_{\frac{1}{2}}m\bar{i}_{\frac{1}{2}}$
standard unit	
display unit	
format	%10.2f
max_value	
min_value	
max_alarm	
min_alarm	
max_warning	

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

min_warning	
delta_time	
delta_val	

Push DataReady event by user code	Not set
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Attribute VarianceY :

the variance along the Y axis

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

Attribute Properties	
label	VarianceY
unit	$\bar{i}_z \frac{1}{2} m \bar{i}_z \frac{1}{2}$
standard unit	
display unit	
format	%10.2f
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 CovarianceXY :

the covariance with respect to the X and Y axis

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

Attribute Properties	
label	Covariance X-Y
unit	$\bar{i}_z \frac{1}{2} m \bar{i}_z \frac{1}{2}$
standard unit	
display unit	
format	%10.2f
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 CorrelationXY :

the correlation coefficient between the X and Y axes

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

Attribute Properties	
label	Correlation Coefficient
unit	
standard unit	
display unit	
format	%10.4f
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 SkewX :

the skew along the X axis

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

Attribute Properties	
label	Skew X^3
unit	$\sqrt[3]{\frac{1}{2}m^3}$
standard unit	
display unit	
format	%10.2f
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 SkewY :

the skew along the Y axis

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

Attribute Properties	
label	Skew Y^3
unit	$\bar{t}_{\frac{1}{2}m3}$
standard unit	
display unit	
format	%10.2f
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 SkewX2Y :

the skew cross coefficient for $X\bar{t}_{\frac{1}{2}Y}$

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

Attribute Properties	
label	Skew $X\bar{t}_{\frac{1}{2}Y}$
unit	$\bar{t}_{\frac{1}{2}m3}$
standard unit	
display unit	
format	%10.2f
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 SkewXY2 :

the skew cross coefficient for $X.Y\bar{t}_{\frac{1}{2}}$

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ

Attribute Properties	
label	Skew $X.Y\bar{t}_{\frac{1}{2}}$
unit	$\bar{t}_{\frac{1}{2}m3}$

Attribute Event Criteria	
Periodic	Not set

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

standard unit	
display unit	
format	%10.2f
max_value	
min_value	
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 XProjFitConverged :

true of the projection fitting algorithm has converged

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

Attribute Properties	
label	X Projection Fit Converged
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 XProjFitCenter :

the X position of the center of the fitted gaussian corresponding to the X projection

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

Attribute Properties	
label	X Projection Fit Center
unit	$\tilde{\mu} \pm \frac{1}{2}\sigma$
standard unit	

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

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

display unit	
format	%10.2f
max_value	
min_value	
max_alarm	
min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

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 XProjFitMag :

the magnitude of fitted gaussian corresponding to the X projection

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

Attribute Properties	
label	X Projection Fit Magnitude
unit	
standard unit	
display unit	
format	%10.2f
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 XProjFitSigma :

the standard deviation of fitted gaussian corresponding to the X projection

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

Attribute Properties	
label	X Projection Fit Sigma
unit	$\sqrt{\frac{1}{2}}m$
standard unit	
display unit	

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

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

format	%10.2f
max_value	
min_value	
max_alarm	
min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

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 XProjFitFWHM :

the full width at half maximum of the fitted gaussian corresponding to the X projection, calculated as approximately $2.35 * XProjFitSigma$

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

Attribute Properties	
label	X Projection Fit FWHM
unit	$\tilde{\Gamma}_c \frac{1}{2}m$
standard unit	
display unit	
format	%10.2f
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 XProjFitBG :

the background of fitted gaussian corresponding to the X projection

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

Attribute Properties	
label	X Projection Fit Background
unit	
standard unit	
display unit	

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

format	%10.2f
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 XProjFitChi2 :

the chi-2 of fitted gaussian corresponding to the X projection

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

Attribute Properties	
label	X Projection Fit Chi2
unit	
standard unit	
display unit	
format	%10.2f
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 YProjFitConverged :

true of the projection fitting algorithm has converged

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

Attribute Properties	
label	Y Projection Fit Converged
unit	
standard unit	
display unit	
format	
max_value	

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

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

min_value	
max_alarm	
min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

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 YProjFitCenter :

the Y position of the center of the fitted gaussian corresponding to the Y projection

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

Attribute Properties	
label	Y Projection Fit Center
unit	$\tilde{z} \frac{1}{2}m$
standard unit	
display unit	
format	%10.2f
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 YProjFitMag :

the magnitude of fitted gaussian corresponding to the Y projection

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

Attribute Properties	
label	Y Projection Fit Magnitude
unit	
standard unit	
display unit	
format	%10.2f
max_value	
min_value	

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

Memorized	Not set
Read allowed for	All states

max_alarm	
min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

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 YProjFitSigma :

the standard deviation of fitted gaussian corresponding to the Y projection

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

Attribute Properties	
label	Y Projection Fit Sigma
unit	$\sqrt{2}$ m
standard unit	
display unit	
format	%10.2f
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 YProjFitFWHM :

the full width at half maximum of the fitted gaussian corresponding to the Y projection, calculated approximately as $2.35 * YProjFitSigma$

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

Attribute Properties	
label	Y Projection Fit FWHM
unit	$\sqrt{2}$ m
standard unit	
display unit	
format	%10.2f
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

Read allowed for	All states
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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 YProjFitBG :

the background of fitted gaussian corresponding to the Y projection

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

Attribute Properties	
label	Y Projection Fit Background
unit	
standard unit	
display unit	
format	%10.2f
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 YProjFitChi2 :

the chi-2 of fitted gaussian corresponding to the Y projection

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

Attribute Properties	
label	Y Projection Fit Chi2
unit	
standard unit	
display unit	
format	%10.2f
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
Archive Absolute Change	Not set
Push Change event by user code	false

Read allowed for	All states
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min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

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

Attribute LineProfileFitConverged :

true of the profile fitting algorithm has converged

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

Attribute Properties	
label	LineProfile Fit Converged
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 LineProfileFitCenter :

the Y position of the center of the fitted gaussian corresponding to the line profile

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

Attribute Properties	
label	LineProfile Fit Center
unit	pix
standard unit	
display unit	
format	%10.2f
max_value	
min_value	
max_alarm	
min_alarm	

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

max_warning	
min_warning	
delta_time	
delta_val	

Push DataReady event by user code	Not set
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Attribute LineProfileFitMag :

the magnitude of fitted gaussian corresponding to the line profile

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

Attribute Properties	
label	LineProfile Fit Magnitude
unit	
standard unit	
display unit	
format	%10.2f
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 LineProfileFitSigma :

the standard deviation of fitted gaussian corresponding to the line profile

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

Attribute Properties	
label	LineProfile Fit Sigma
unit	pix
standard unit	
display unit	
format	%10.2f
max_value	
min_value	
max_alarm	
min_alarm	
max_warning	

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

min_warning	
delta_time	
delta_val	

Attribute LineProfileFitFWHM :

the full width at half maximum of the fitted gaussian corresponding to the line profile, calculated approximately as $2.35 * \text{LineProfileFitSigma}$

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

Attribute Properties	
label	LineProfile Fit FWHM
unit	pix
standard unit	
display unit	
format	%10.2f
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 LineProfileFitBG :

the background of fitted gaussian corresponding to the line profile

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

Attribute Properties	
label	LineProfile Fit Background
unit	
standard unit	
display unit	
format	%10.2f
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
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Attribute LineProfileFitChi2 :

the chi-2 of fitted gaussian corresponding to the line profile

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

Attribute Properties	
label	LineProfile Fit Chi2
unit	
standard unit	
display unit	
format	%10.2f
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 GaussianFitConverged :

true of the 2D gaussian fitting algorithm has converged

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

Attribute Properties	
label	GaussianFitConverged
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 GaussianFitMagnitude :

the magnitude of the fitted gaussian

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

Attribute Properties	
label	GaussianFitMagnitude
unit	
standard unit	
display unit	
format	%10.2f
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 GaussianFitCenterX :

the X coordinate of the centroid of the 2D gaussian fitted to the image

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

Attribute Properties	
label	GaussianFitCenterX
unit	$\tilde{i} \frac{1}{2}m$
standard unit	
display unit	
format	%10.2f
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 GaussianFitCenterY :

the Y coordinate of the centroid of the 2D gaussian fitted to the image

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

Attribute Properties	
label	GaussianFitCenterY
unit	$\bar{i}_j \frac{1}{2} m$
standard unit	
display unit	
format	%10.2f
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 GaussianFitVarianceX :

the variance of the 2D gaussian along the X axis

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

Attribute Properties	
label	GaussianFitVarianceX
unit	$\bar{i}_j \frac{1}{2} m \bar{i}_j \frac{1}{2}$
standard unit	
display unit	
format	%10.2f
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 GaussianFitVarianceY :

the variance of the 2D gaussian along the Y axis

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

Attribute Properties	
label	GaussianFitVarianceY
unit	$\sqrt{\frac{1}{2}m}\sqrt{\frac{1}{2}}$
standard unit	
display unit	
format	%10.2f
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 GaussianFitCovarianceXY :

the covariance of the 2D gaussian

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

Attribute Properties	
label	GaussianFitCovarianceXY
unit	$\sqrt{\frac{1}{2}m}\sqrt{\frac{1}{2}}$
standard unit	
display unit	
format	%10.2f
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 GaussianFitMajorAxisFWHM :

the FWHM along the major axis of the fitted gaussian, calculated approximately as $2.35 * \sqrt{\text{GaussianFitVarianceX}}$

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

Attribute Properties	
label	GaussianFitMajorAxisFWHM
unit	$\tilde{i}_0 \frac{1}{2} m$
standard unit	
display unit	
format	%10.2f
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 GaussianFitMinorAxisFWHM :

the FWHM along the minor axis of the fitted gaussian, calculated approximately as $2.35 * \text{sqrt}(\text{GaussianFitVarianceY})$

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

Attribute Properties	
label	GaussianFitMinorAxisFWHM
unit	$\tilde{i}_0 \frac{1}{2} m$
standard unit	
display unit	
format	%10.2f
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 GaussianFitTilt :

the angle made by the major axis of the gaussian and the X axis

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

Attribute Properties	
label	GaussianFitTilt
unit	$\tilde{t}_c \frac{1}{2}$
standard unit	
display unit	
format	%10.2f
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 GaussianFitBG :

the background of the fitted gaussian

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

Attribute Properties	
label	GaussianFitBG
unit	
standard unit	
display unit	
format	%10.2f
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 GaussianFitChi2 :

the chi-2 of the fitted gaussian

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

Attribute Properties	
label	GaussianFitChi2
unit	
standard unit	
display unit	

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

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

format	%10.2f
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 Fit1DNbIterMax :

the maximal number of iteration to converge to a solution

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

Attribute Properties	
label	Fit1DNbIterMax
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 Fit1DMaxRelChange :

optimization stops when the relative change between 2 iterations falls below this threshold

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

Attribute Properties	
label	Fit1DMaxRelChange
unit	
standard unit	
display unit	
format	%8.7f
max_value	
min_value	
max_alarm	
min_alarm	

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

Read allowed for	All states
Write allowed for	All states

max_warning	
min_warning	
delta_time	
delta_val	

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

Attribute Fit2DNbIterMax :

the maximal number of iteration to converge to a solution

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

Attribute Properties	
label	Fit2DNbIterMax
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 Fit2DMaxRelChange :

optimization stops when the relative change between 2 iterations falls below this threshold

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

Attribute Properties	
label	Fit2DMaxRelChange
unit	
standard unit	
display unit	
format	%8.7f
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 XProjFitNbIter :

the number of iterations needed to converge to the fitted profile

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

Attribute Properties	
label	XProfile Nb Iter
unit	
standard unit	
display unit	
format	%10d
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 XProjFitRelChange :

the relative change in the fit parameters between the two last iterations

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

Attribute Properties	
label	XProfile Fit Rel. Change
unit	
standard unit	
display unit	
format	%10.6f
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 YProjFitNbIter :

the number of iterations needed to converge to the fitted profile

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

Attribute Properties	
label	YProfile Nb Iter
unit	
standard unit	
display unit	
format	%10d
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 YProjFitRelChange :

the relative change in the fit parameters between the two last iterations

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

Attribute Properties	
label	YProfile Fit Rel. Change
unit	
standard unit	
display unit	
format	%10.6f
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 LineProfileFitNbIter :

the number of iterations needed to converge to the fitted profile

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

Attribute Properties	
label	LineProfile Nb Iter
unit	
standard unit	
display unit	
format	%10d
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 LineProfileFitRelChange :

the relative change in the fit parameters between the two last iterations

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

Attribute Properties	
label	LineProfile Fit Rel. Change
unit	
standard unit	
display unit	
format	%10.6f
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 GaussianFitNbIter :

the number of iterations needed to converge to the fitted image

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

Attribute Properties	
label	GaussianFit Nb lter
unit	
standard unit	
display unit	
format	%10d
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 GaussianFitRelChange :

the relative change in the fit parameters between the two last iterations

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

Attribute Properties	
label	GaussianFit Rel. Change
unit	
standard unit	
display unit	
format	%10.6f
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 RmsX :

the variance square root along the X axis

Attribute Definition

Attribute Properties

Attribute Event Criteria

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

label	RmsX
unit	$\sqrt{\frac{1}{2}}m$
standard unit	
display unit	
format	%10.3f
max_value	
min_value	
max_alarm	
min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

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 RmsY :

the variance square root along the Y axis

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

Attribute Properties	
label	RmsY
unit	$\sqrt{\frac{1}{2}}m$
standard unit	
display unit	
format	%10.3f
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 SumImagePixels :

Represents the total sum of the image pixels.\n

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ
Data Type	Tango::DEV_DOUBLE
Display Level	EXPERT
Inherited	false
Abstract	false

Attribute Properties	
label	
unit	
standard unit	
display unit	
format	
max_value	

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

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

min_value	
max_alarm	
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 XProj :

the mean value along the X axis

Attribute Definition	
Attribute Type	Spectrum (131072)
R/W Type	READ
Data Type	Tango::DEV_DOUBLE
Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	Not set
Read allowed for	All states

Attribute Properties	
label	XProfile
unit	
standard unit	
display unit	
format	%10.4f
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 XProjFitted :

the gaussian fit result of XProj

Attribute Definition	
Attribute Type	Spectrum (131072)
R/W Type	READ
Data Type	Tango::DEV_DOUBLE
Display Level	EXPERT
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	Not set
Read allowed for	All states

Attribute Properties	
label	XProfileFitted
unit	
standard unit	
display unit	
format	%10.2f
max_value	
min_value	
max_alarm	
min_alarm	
max_warning	
min_warning	
delta_time	

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

delta_val	
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Attribute XProjError :

the fitted profile error along the X axis

Attribute Definition	
Attribute Type	Spectrum (131072)
R/W Type	READ
Data Type	Tango::DEV_DOUBLE
Display Level	EXPERT
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	Not set
Read allowed for	All states

Attribute Properties	
label	XProfileError
unit	
standard unit	
display unit	
format	%10.2f
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 YProj :

the mean value along the Y axis

Attribute Definition	
Attribute Type	Spectrum (131072)
R/W Type	READ
Data Type	Tango::DEV_DOUBLE
Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	Not set
Read allowed for	All states

Attribute Properties	
label	YProfile
unit	
standard unit	
display unit	
format	%10.4f
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 YProjFitted :

the gaussian fit result of XProj

Attribute Definition	
Attribute Type	Spectrum (131072)
R/W Type	READ
Data Type	Tango::DEV_DOUBLE
Display Level	EXPERT
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	Not set
Read allowed for	All states

Attribute Properties	
label	YProfileFitted
unit	
standard unit	
display unit	
format	%10.2f
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 YProjError :

the fitted profile error along the Y axis

Attribute Definition	
Attribute Type	Spectrum (131072)
R/W Type	READ
Data Type	Tango::DEV_DOUBLE
Display Level	EXPERT
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	Not set
Read allowed for	All states

Attribute Properties	
label	YProfileError
unit	
standard unit	
display unit	
format	%10.2f
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 LineProfile :

the line profile values

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Attribute Definition	
Attribute Type	Spectrum (131072)
R/W Type	READ
Data Type	Tango::DEV_DOUBLE
Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	Not set
Read allowed for	All states

Attribute Properties	
label	Line Profile
unit	
standard unit	
display unit	
format	%10.2f
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 LineProfileFitted :

the fitted line profile

Attribute Definition	
Attribute Type	Spectrum (131072)
R/W Type	READ
Data Type	Tango::DEV_DOUBLE
Display Level	EXPERT
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	Not set
Read allowed for	All states

Attribute Properties	
label	LineProfileFitted
unit	
standard unit	
display unit	
format	%10.2f
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 LineProfileError :

the fitted line profile error

Attribute Definition	
Attribute Type	Spectrum (131072)
R/W Type	READ
Data Type	Tango::DEV_DOUBLE
Display Level	EXPERT

Attribute Properties	
label	LineProfileError
unit	
standard unit	
display unit	
format	%10.2f

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

Inherited	false
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 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 Histogram :

Attribute Definition	
Attribute Type	Spectrum (131072)
R/W Type	READ
Data Type	Tango::DEV_FLOAT
Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	Not set
Read 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 InputImage :

raw copy of the input image

Attribute Definition	
Attribute Type	Image (131072 x 131072)
R/W Type	READ_WRITE
Data Type	Tango::DEV_ULONG
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	InputImage
unit	
standard unit	
display unit	
format	
max_value	
min_value	
max_alarm	
min_alarm	
max_warning	
min_warning	
delta_time	

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

delta_val	
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Attribute ROIImage :

the effective image on which are done all the calculation

Attribute Definition	
Attribute Type	Image (131072 x 131072)
R/W Type	READ
Data Type	Tango::DEV_ULONG
Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	Not set
Read allowed for	All states

Attribute Properties	
label	ROI Image
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 LineProfileHelperImg :

the intermediate image used in the calculation of the Line Profile. this corresponds to the input rectangle defined by origin, end and thickness, affine transformed to fit in a rectangular image. The columns of this image are averaged to give the LineProfile attribute

Attribute Definition	
Attribute Type	Image (131072 x 131072)
R/W Type	READ
Data Type	Tango::DEV_FLOAT
Display Level	EXPERT
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	Not set
Read allowed for	All states

Attribute Properties	
label	Line Profile Helper Image
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 GaussianFitParameterCovariance :

the covariance matrix of the best fit parameters (7x7). the 7 parameters are ordered as [A, xc, yc, s_xx, s_xy, s_yy, b]

Attribute Definition	
Attribute Type	Image (7 x 7)
R/W Type	READ
Data Type	Tango::DEV_DOUBLE
Display Level	EXPERT
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	Not set
Read allowed for	All states

Attribute Properties	
label	GaussianFitParameterCovariance
unit	
standard unit	
display unit	
format	%10.2f
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

ImgBeamAnalyzer Class States	
Name	Description
FAULT	an error has been caught either : - at initialisation - when reading the image attribute in the corresponding remote device - when configuring - when processing the image
RUNNING	the device is correctly initialized, configured, and is currently analysing images
STANDBY	the device is ready for processing and is waiting. In `CONTINUOUS` mode, it waits for the START command to begin analysis In `ONESHOT` mode, it waits either for the PROCESS command if a remote device is specified, either for the InputImage attribute to be written