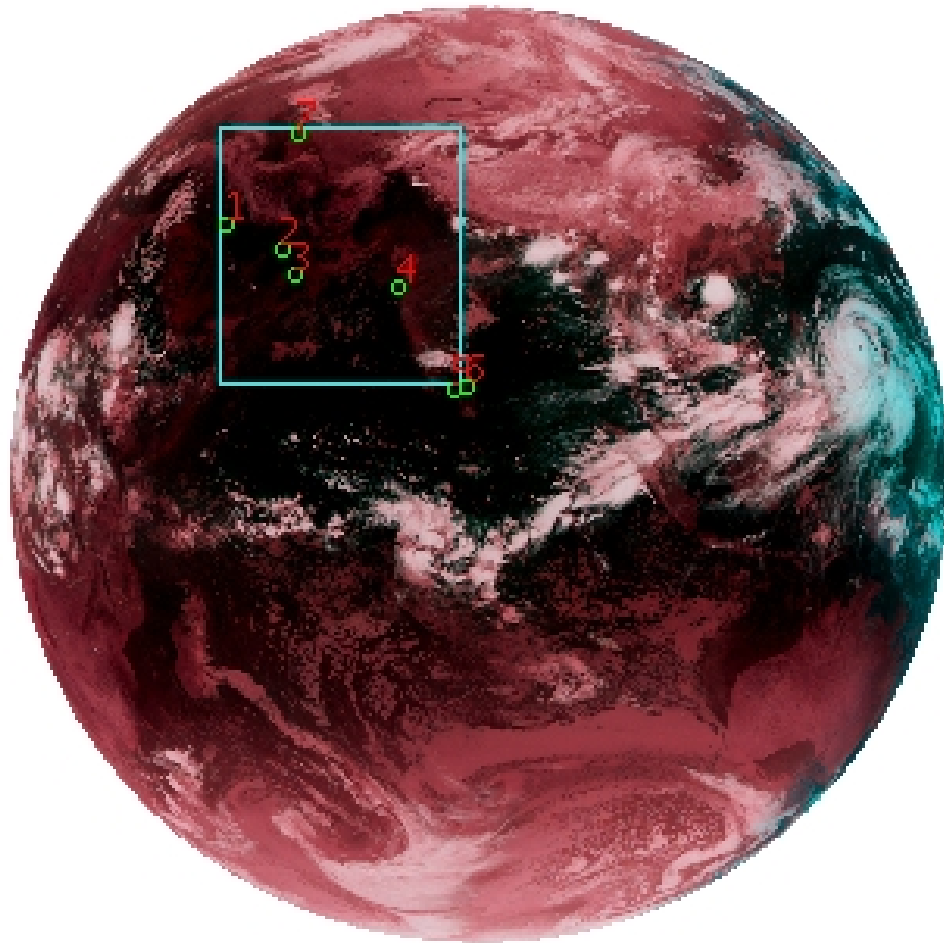


DQE Report: Location Accuracy of INSAT-3D-IMG STANDARD(FULL DISK) Product 3DIMG_12SEP2018_2130

Satellite INSAT-3D **No Of Bands** 6 **Product Type** STANDARD
Sensor IMG **LvlOfProcess** L1B **Selected Band** 2-TIR1
DOP/Time 12-09-18/21:30 **Station ID** BES **Field View(deg)** 17.974
Res(Y,X) [Km] (4.0,4.0) **Res(Y,X) [uRad]** (112.0,112.0)

(81.042N,0.843W)

(81.042N,163.157E)



(-81.042S,0.843W)

(-81.042S,163.157E)

GCP Distribution overview for 3DIMG12SEP20182130L1BSTD

Image Width: 2805 **Image Height:** 2816 **No Of GCPs:** 7

GCP Coverage(%) 26.14 **(N-S)** 24.74 **(E-W)**

Location Error(E)

Legend — 0Km < E <= 50Km — 50Km < E <= 100Km — E >100Km

Location Error (In IR Pixels)

| | Mean | Direction | Stddev | RMS |
|--------|--------|-----------|--------|-------|
| Along | -1.545 | S | 1.424 | 2.101 |
| Across | -3.387 | W | 2.897 | 4.457 |

Scale (Km)

| | Pixel Size | Stddev | %variation |
|---------|------------|--------|------------|
| Average | 5.158 | 0.799 | 28.958 |
| Along | 7.870 | 7.120 | 96.748 |
| Across | 7.721 | 10.309 | 93.026 |

Internal Distortion (in IR Pixels)

| | PeakToPeak | Mean | Stddev | RMS |
|--------|------------|-------|--------|-------|
| Along | 3.453 | 0.388 | 1.16 | 1.223 |
| Across | 7.302 | 3.317 | 2.32 | 4.049 |

Attitude Residuals (Deg)

| Pitch | Roll | Yaw |
|----------|---------|---------|
| -0.03532 | 0.00002 | 0.18494 |

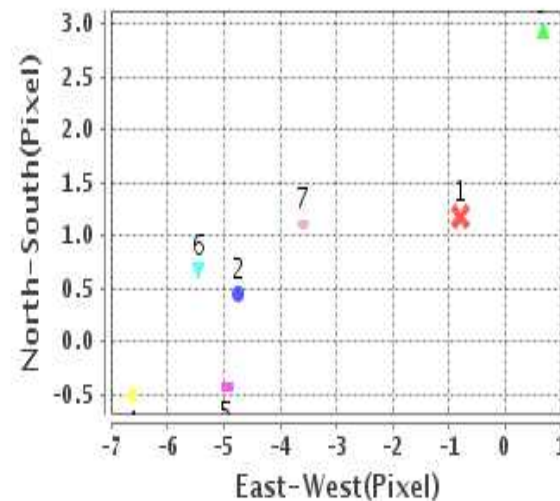
Reference Used

| Sensor | Resolution | Projection |
|--------|------------|------------|
| ETM | 500.00 | GGP |

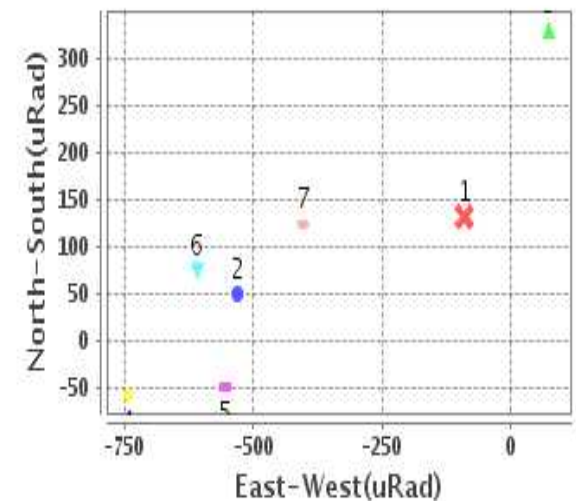
Radial Error (in IR Pixels)

| | |
|-------------|-------|
| Mean | 4.753 |
| Min | 2.383 |
| Max | 6.805 |
| CE90 | 5.789 |

Location Error For GCPs(Pixel)



Location Error For GCPs(uRad)



Detailed Product Information

Ancillary Info

| | | | |
|--------------------------|---------------|----------------------------------|------------|
| Satellite | INSAT-3D | Generation Date | 13-09-18 |
| Sensor | IMG | DQE Date | 17-09-2018 |
| PassType | NONE | Aquisition Date | 12-09-18 |
| Imaging Mode | FULL_FRAME | Aquisition Time(GMT) | 21:30 |
| Sat Altitude(m) | 3.6E7 | Nominal Altitude(Km) | 3.6E7 |
| Station | BES | Predicted Altitude(Km) | -999.99 |
| Sat Location(deg) | -999.99 E | Nominal Center Lat(deg) | 0.0 |
| Format | hdf5-1.8.8 | Nominal Center Lon(deg) | 82.0 |
| LvlOfProcessing | STANDARD(FULL | Predicted Center Lat(deg) | -999.99 |
| DP JobId | 3DIMG_12SEP20 | Predicted Center Lon(deg) | -999.99 |
| ProductCode | NONE | | |
| Field View(deg) | 17.974 | | |

Projection Parameters

| | |
|--------------------------------------|----------|
| Projection | None |
| Ellipsoid | WGS_84 |
| Datum | WGS_84 |
| Zone | NotAvail |
| Semi_Major_Axis(Km) | 6378.14 |
| Semi_Minor_Axis(Km) | 6356.75 |
| Standard_Parallel1(deg) | -999.99 |
| Standard_Parallel2(deg) | -999.99 |
| Projection_Origin_Lon(deg) | -999.99 |
| Projection_Origin_Lat(deg) | -999.99 |
| Projection_False_Easting(Km) | -999.99 |
| Projection_False_Northing(Km) | -999.99 |

Scene Center Desc

| | |
|--------------------------|---------|
| Centre Lat(deg) | 0.0 |
| Center Lon(deg) | 82.0 |
| Centre Roll(deg) | -999.0 |
| Centre Pitch(deg) | -999.0 |
| Center Yaw(deg) | -999.0 |
| SunElevation(deg) | -999.99 |
| SunAzimuth(deg) | -999.99 |
| SatElevation(deg) | -999.99 |
| SatAzimuth(deg) | -999.99 |

Scene Corner Desc

| | |
|--------------------|---------|
| NW_Lat(deg) | 81.042 |
| NW_Lon(deg) | 0.843 |
| SW_Lat(deg) | -81.042 |
| SW_Lon(deg) | 0.843 |
| NE_Lat(deg) | 81.042 |
| NE_Lon(deg) | 163.157 |
| SE_Lat(deg) | -81.042 |
| SE_Lon(deg) | 163.157 |

Band Wise Details

| | Res_AL(Km) | Res_AX(Km) | Image Height | Image Width |
|-------------|------------|------------|--------------|-------------|
| MIR | 4.0 | 4.0 | 2816 | 2805 |
| SWIR | 1.0 | 1.0 | 11264 | 11220 |
| TIR1 | 4.0 | 4.0 | 2816 | 2805 |
| TIR2 | 4.0 | 4.0 | 2816 | 2805 |
| VIS | 1.0 | 1.0 | 11264 | 11220 |
| WV | 8.0 | 8.0 | 1408 | 1402 |

GDQE Computation Base

| | | | | | | | |
|-------------------|----------------|--------------------------------------|--------|-------------------------------|------------|----------------------------|-----------|
| Projection | MER | Wildpoint Rejection Threshold | 2.60 | SemiMajorAxis(m) | 6378137.00 | Mode Of Computation | grid |
| Ellipsoid | WGS_84 | | -sigma | SemiMinorAxis(m) | 6356752.31 | Used Reference Type | REFINSREF |
| Datum | WGS_84 | Unit | meters | Standardparallel1(deg) | 17.0 | | |
| Zone | Not Applicable | | | Standardparallel2(deg) | 17.0 | | |

* -999.99 : Not Applicable/Not Available

References

JobId : 3DIMG12SEP20182130L1BSTD

(-999.99 - Not Available/Not Computed)

| Ref.No | Source | File Name | Resolution (m) | Projection |
|--------|--------|-----------------|------------------|------------|
| 1 | ETM | world_Band1.img | 500.0 | GGP |

Location Accuracy

GCP Distribution Statistics

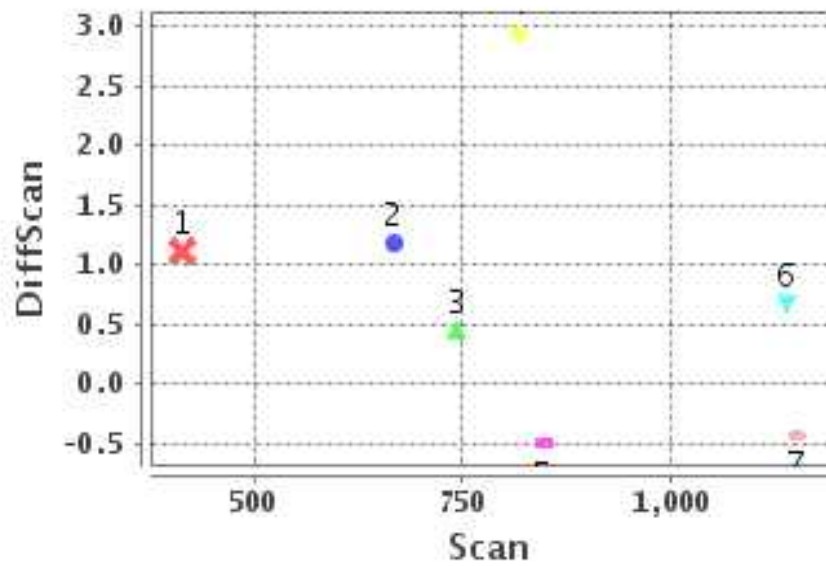
Image Width (pixels) : 2805 Image Height (pixels) : 2816 No of GCPs : 7

| | Mean | StdDev | Min | Max | Coverage(in %) |
|-----------------|--------|--------|-------|---------|----------------|
| GCP Scan | 825.2 | 240.5 | 413.5 | 1149.50 | 26.14 (N-S) |
| GCP Pix | 1007.1 | 249.0 | 664.2 | 1358.25 | 24.74 (E-W) |

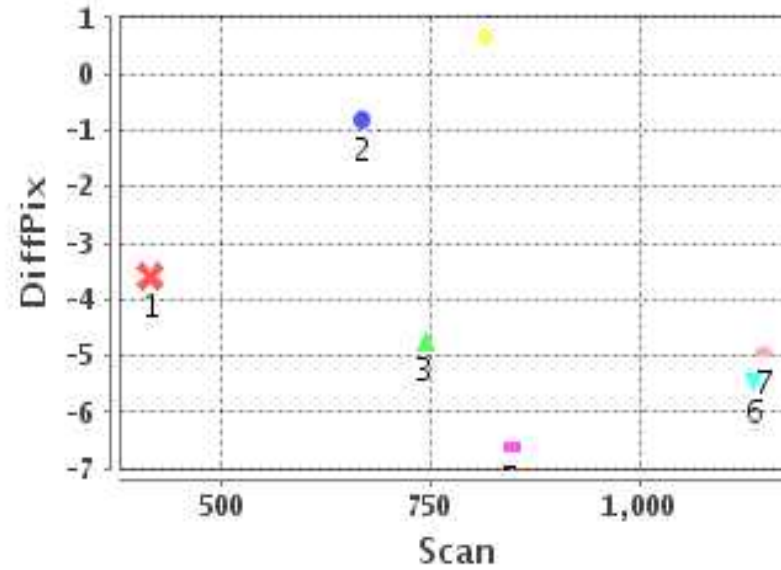
Identified Control Point details : (Differences are Reference - Product)

| No | Scan | Pix | DiffScan (line) | DiffPix (pixel) | DifLat (Km) | Dir | DifLon (Km) | Dir | Status |
|----|--------|--------|-----------------|-----------------|-------------|-----|-------------|-----|----------|
| 1 | 667.5 | 664.2 | 1.2 | -0.80 | 9.530 | S | 0.120 | E | Accepted |
| 2 | 743.8 | 827.0 | 0.5 | -4.74 | 4.908 | S | 22.630 | W | Accepted |
| 3 | 816.2 | 859.2 | 2.9 | 0.67 | 15.362 | S | 7.163 | E | Accepted |
| 4 | 847.5 | 1152.2 | -0.5 | -6.64 | 1.151 | N | 27.198 | W | Accepted |
| 5 | 1149.5 | 1320.8 | -0.4 | -4.94 | 0.270 | N | 16.160 | W | Accepted |
| 6 | 1138.2 | 1358.2 | 0.7 | -5.45 | 3.486 | S | 20.013 | W | Accepted |
| 7 | 413.5 | 868.2 | 1.1 | -3.60 | 11.408 | S | 16.127 | W | Accepted |

Error(Pixels) Vs. GCPScan



Error(Pixels) Vs. GCPScan



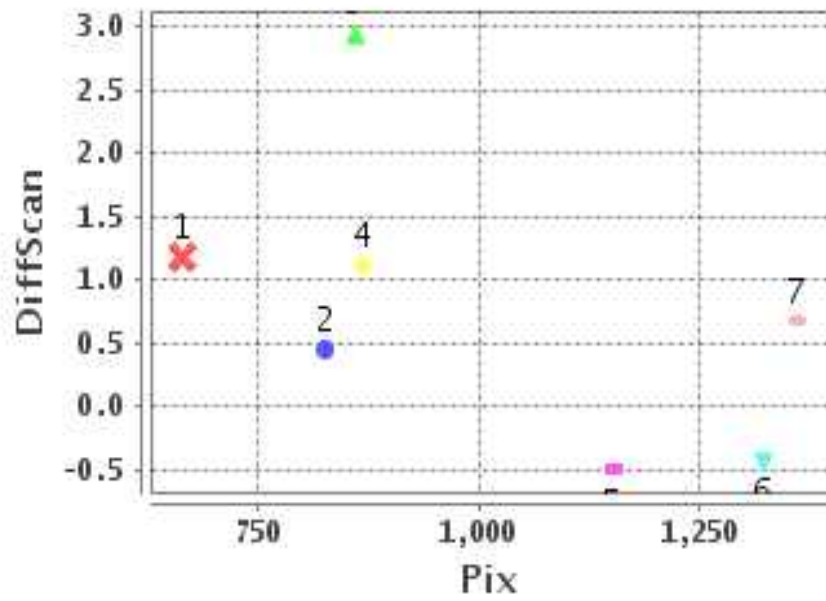
Number Of Points

| | |
|-------|---|
| North | 2 |
| South | 5 |
| East | 2 |
| West | 5 |

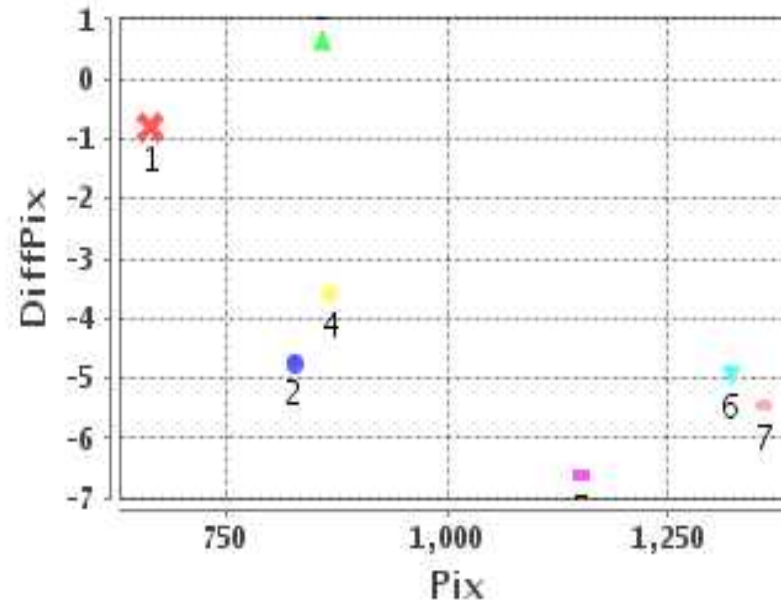
Radial Error (Km)

| | |
|------|-------|
| Mean | 4.753 |
| Min | 2.383 |
| Max | 6.805 |
| CE90 | 5.789 |

Error(Pixels) Vs. GCPPix



Error(Pixels) Vs. GCPPix



Location Accuracy

| | Mean | StdDev | RMS | Dir | * MinRMS | * MaxRMS |
|---------------|--------|--------|-------|-----|----------|----------|
| Along(Km) | -1.545 | 1.424 | 2.101 | S | 1.641 | 2.270 |
| Across (Km) | -3.387 | 2.897 | 4.457 | W | 3.933 | 4.814 |

Block-Wise Geo location Error Statistics

Location Accuracy,Scale,ID

| | | | |
|--|----------|-------|--|
| Scan Range-0-937; Pix Range-0-934 | | | |
| Number of GCPs | 4 | | |
| Location Error(Km) | | | |
| Along(Mean,Dir) | -10.3025 | S | |
| Across(Mean,Dir) | -7.87 | W | |
| Scale(Km) | | | |
| Average Scale (Mean,%Variation) | 6.04 | 51.12 | |
| Internal Distortion(Pixel) | | | |
| Along(Mean,Stddev) | -0.42 | 1.05 | |
| Across(Mean,Stddev) | 1.76 | 2.33 | |

| | | | |
|---|---------|---------|--|
| Scan Range-0-937; Pix Range-934-1869 | | | |
| Number of GCPs | 1 | | |
| Location Error(Km) | | | |
| Along(Mean,Dir) | 1.15 | N | |
| Across(Mean,Dir) | -27.20 | W | |
| Scale(Km) | | | |
| Average Scale (Mean,%Variation) | -999.99 | -999.9 | |
| Internal Distortion(Pixel) | | | |
| Along(Mean,Stddev) | -999.99 | -999.99 | |
| Across(Mean,Stddev) | -999.99 | -999.99 | |

| | | | |
|--|---------|----------|--|
| Scan Range-0-937; Pix Range-1869-2805 | | | |
| Number of GCPs | -999 | | |
| Location Error(Km) | | | |
| Along(Mean,Dir) | -999.99 | NotAvail | |
| Across(Mean,Dir) | -999.99 | NotAvail | |
| Scale(Km) | | | |
| Average Scale (Mean,%Variation) | -999.99 | -999.9 | |
| Internal Distortion(Pixel) | | | |
| Along(Mean,Stddev) | -999.99 | -999.99 | |
| Across(Mean,Stddev) | -999.99 | -999.99 | |

| | | | |
|---|---------|----------|--|
| Scan Range-937-1876; Pix Range-0-934 | | | |
| Number of GCPs | -999 | | |
| Location Error(Km) | | | |
| Along(Mean,Dir) | -999.99 | NotAvail | |
| Across(Mean,Dir) | -999.99 | NotAvail | |
| Scale(Km) | | | |
| Average Scale (Mean,%Variation) | -999.99 | -999.9 | |
| Internal Distortion(Pixel) | | | |
| Along(Mean,Stddev) | -999.99 | -999.99 | |
| Across(Mean,Stddev) | -999.99 | -999.99 | |

| | | | |
|--|--------|------|--|
| Scan Range-937-1876; Pix Range-934-1869 | | | |
| Number of GCPs | 2 | | |
| Location Error(Km) | | | |
| Along(Mean,Dir) | -1.61 | S | |
| Across(Mean,Dir) | -18.09 | W | |
| Scale(Km) | | | |
| Average Scale (Mean,%Variation) | 3.82 | 4.43 | |
| Internal Distortion(Pixel) | | | |
| Along(Mean,Stddev) | 1.11 | 0.00 | |
| Across(Mean,Stddev) | 0.51 | 0.00 | |

| | | | |
|---|---------|----------|--|
| Scan Range-937-1876; Pix Range-1869-2805 | | | |
| Number of GCPs | -999 | | |
| Location Error(Km) | | | |
| Along(Mean,Dir) | -999.99 | NotAvail | |
| Across(Mean,Dir) | -999.99 | NotAvail | |
| Scale(Km) | | | |
| Average Scale (Mean,%Variation) | -999.99 | -999.9 | |
| Internal Distortion(Pixel) | | | |
| Along(Mean,Stddev) | -999.99 | -999.99 | |
| Across(Mean,Stddev) | -999.99 | -999.99 | |

| | | | |
|--|---------|----------|--|
| Scan Range-1876-2816; Pix Range-0-934 | | | |
| Number of GCPs | -999 | | |
| Location Error(Km) | | | |
| Along(Mean,Dir) | -999.99 | NotAvail | |
| Across(Mean,Dir) | -999.99 | NotAvail | |
| Scale(Km) | | | |
| Average Scale (Mean,%Variation) | -999.99 | -999.9 | |
| Internal Distortion(Pixel) | | | |
| Along(Mean,Stddev) | -999.99 | -999.99 | |
| Across(Mean,Stddev) | -999.99 | -999.99 | |

| | | | |
|---|---------|----------|--|
| Scan Range-1876-2816; Pix Range-937-1869 | | | |
| Number of GCPs | -999 | | |
| Location Error(Km) | | | |
| Along(Mean,Dir) | -999.99 | NotAvail | |
| Across(Mean,Dir) | -999.99 | NotAvail | |
| Scale(Km) | | | |
| Average Scale (Mean,%Variation) | -999.99 | -999.9 | |
| Internal Distortion(Pixel) | | | |
| Along(Mean,Stddev) | -999.99 | -999.99 | |
| Across(Mean,Stddev) | -999.99 | -999.99 | |

| | | | |
|--|---------|----------|--|
| Scan Range-1876-2816; Pix Range-1869-2805 | | | |
| Number of GCPs | -999 | | |
| Location Error(Km) | | | |
| Along(Mean,Dir) | -999.99 | NotAvail | |
| Across(Mean,Dir) | -999.99 | NotAvail | |
| Scale(Km) | | | |
| Average Scale (Mean,%Variation) | -999.99 | -999.9 | |
| Internal Distortion(Pixel) | | | |
| Along(Mean,Stddev) | -999.99 | -999.99 | |
| Across(Mean,Stddev) | -999.99 | -999.99 | |

*-999 : no gcp available

* -999.99 : values are not computed