Camera Calibration Certificate

Camera Name	Phase One iXM-RS100F-RMA141788
Back Serial Number	MI010007
Sensor Resolution	11608 x 8708 (100 MP) (X Axis; Y Axis)
Pixel Size	4.6 µm
Lens Type & Focal Length	50 MM
Lens Serial Number	12537936
C	51.6121 mm (Australis format)
Xp, Yp, Kn, Pn, Bn	0 (for images corrected in iX Capture)
Distance Setting	Infinity [m]
Date Of Calibration	20-January-2022

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Calibration results

(Australis Format)

PARAMETER	VALUE	STD Deviation
FOCAL LENGTH	51.6121 (mm)	0.0001 (mm)
PRINCIPAL POINT OFFSET		
XP	0.0252 (mm)	0.0001 (mm)
YP	-0.0122 (mm)	0.0000 (mm)
RADIAL DISRORTION		
K1	1.43528e-05	3.33442e-09
K2	-3.13334e-09	7.59676e-12
K3	-4.30485e-13	5.19688e-15
RADIAL-ASYMMETRIC AND TANGENTIAL DISTORTION		
P1	-3.79523e-06	6.47704e-09
P2	-1.43319e-06	5.33606e-09
AFFINITY AND NON-ORTHOGONALITY		
B1	2.71802e-06	1.40653e-07
B2	-2.67450e-06	1.42077e-07

Calibration pictures exported using iX-Capture 3.4
Lens distortion correction parameter used in exporting raw Tiffs – 0% correction.

The coefficients follow the model used by the photogrammetric software Australis where the corrected image coordinates (x_{corr}, y_{corr}) can be calculated from the measured coordinates (x_{meas}, y_{meas}) by using the following formulas:

$$x = x_{meas} - x_p$$

$$y = y_{meas} - y_p$$

$$r^2 = x^2 + y^2 \qquad \text{Where x and y are now with respect to the principal point.}$$

$$dr = K1 * r^3 + K2 * r^5 + K3 * r^7$$

$$x_{corr} = x + x * {dr}/{r} + P1 * (r^2 + 2 * x^2) + 2 * P2 * x * y + B1 * x + B2 * y$$

$$y_{corr} = y + y * {dr}/{r} + P2 * (r^2 + 2 * y^2) + 2 * P1 * x * y$$

Calibration results

(USGS format)

Camera	iXM-RS100F (50 MM)
Width	11608
Height	8708
PW	0.0046
PH	0.0046
F	51.6119
XP	0.025206
YP	-0.0121527
K0	0
K1	1.43195e-05
K2	-3.01235e-09
K3	-5.89601e-13
K4	6.94529e-17
P1	-3.67932e-06
P2	-1.39139e-06
P3	5.148e-05
P4	-1.41669e-08

Calibration results
(INPHO format)

Camera	iXM-RS100F (50 MM)
CCD_COLUMNS	11608
CCD_ROWS	8708
Pixel Width	0.0046
Pixel Height	0.0046
Focal length	51.612
PIXEL_REFERENCE	Center Top Left
PPA X	5808.97
PPA Y	4356.14
K0	0
K1	-1.4328e-05
K2	3.04347e-09
K3	5.5334e-13
K4	-5.61184e-17
P1	3.79522e-06
P2	1.43316e-06
P3	0
P4	0