(3) Calibrated x, y values are

$(x_1, y_1) = (1098.7, 685.75)$
$(x_2, y_2) = (1129.5, 681.72)$

} the co-ordinates of image.

focal length: $f_x = 1431.7$, $f_y = 1430.8$

$$X_{real} = \left(\frac{x_{image}}{f_x}\right) z$$

$$Y_{real} = \left(\frac{y_{image}}{f_y}\right) z \qquad (\because z = 835.7\,mm)$$

$$x_{1real} = \left(\frac{1098.7}{1431.7}\right) \times 835.7 = 641.32$$

$$y_{1real} = \left(\frac{685.75}{1430.8}\right) \times 835.7 = 400.53$$

$$x_{2real} = \left(\frac{1129.5}{1431.7}\right) \times 835.7 = 659.30$$

$$y_{2real} = \left(\frac{681.72}{1430.8}\right) \times 835.7 = 398.17$$

→ Calculate Euclidian distance

$(x_1, y_1) = (641.32, 400.53)$

$(x_2, y_2) = (659.30, 398.17)$

$$= \sqrt{(659.30 - 641.32)^2 + (398.17 - 400.53)^2}$$

$$= \sqrt{323.28 + 5.56} \approx 18.13 \text{ mm}$$