



## Calibration Target – 16 mm pitch (8.5 x 11)

### How to print and validate the calibration target

1. Print the target document on a printer with a minimum of 600 dots per inch (dpi) resolution. Set Page Scaling to "None."
2. To verify that the target printed correctly without distortion, measure the outside diameter of one of the dots. The outside diameter measurement should be 9.6 millimeters.
3. Measure the distance from the center of one dot to the center of the dot next to it (the pitch). The pitch measurement should be 16 millimeters.
4. Measure the scale on the right side of the document.
5. If the measurements are not correct, check the printer settings or reprint the document on a different printer.
6. To make the target more permanent, you can glue it to a stiff piece of material such as light cardboard or foamcore board. Be sure that the target lies flat and smooth on the material.

### How to calibrate the camera

For more detailed instructions, refer to the IMPACT Reference Guide (PPT Publication 843-0093.)

NOTE: If you want to use partial scanning on an image, you must calibrate the entire image first and then set the partial scan parameters.

1. Open VPM or the Settings module.
2. Click the Settings tab, click the Camera icon, click the Setup tab at the bottom of the image display area, then click the Calibration radio button.
3. Click the Calibrate drop-down and select "From Target."
4. Select the correct Target Dot Pattern type (Hexagon or Grid).
5. Be sure that the camera is mounted securely.
6. Place the printed target in front of the camera. Be sure it is well lit, but not saturated. Click the Live button.
7. Move the target so it is fully included in the field of view (FOV). Calibration works best when the target's dot pattern fills the camera's FOV. The dot target should cover all parts of the FOV where any inspection measurements will be made. It is not critical to center the calibration target in the FOV. It is important, however, that the center of the image corresponds to the center of the lens (optical axis).  
When the target is placed correctly, focus the camera so that the target dots are clear and sharp.
8. Click the Snap button.
9. Type the dot pitch measurement into the Target Pitch (units) field. This measurement is indicated on the target.
10. Click the Calibrate button.

The Scale Factor (in Units per Pixel) is displayed when the calibration is complete. Scale Factor is the number of pixels in the image window per "real world" unit on the target. This value will be used to automatically calibrate measurements in VPM tools with the physical dimensions of the image.