PAPCO Instruments

Digital Shutter Speed Tester

Instructions for use

OVERVIEW: This instrument utilizes a visible red laser and a highly sensitive optical detector to measure the duration of time that a camera shutter is open. Resolution is in ten thousandths of a second. Time base stability is 100 ppm. Two function switches set the operating modes. Readings and annunciators are shown on one high contrast LCD display. Power is supplied by four AA cell batteries. Measurements are converted on the worksheet.

PREPARATION: Set up the camera by installing a piece of retro-reflective target material cut to the size of a piece of film, in the film gate. NOTE – do not remove the adhesive liner from the reflective material. Installation is not permanent. If the camera has a focal plane shutter and interchangeable lenses, remove the lens. Cameras with between the lens shutters, rangefinder and viewfinder cameras can be tested with the lenses in place. Large format lens and shutter assemblies can be tested on the lensboard.

Mount the camera on a swivel base. Large format and heavy medium format cameras can be mounted on a suitable tripod.

Mount the Digital Shutter Speed Tester on a swivel base. Position the camera and tester approximately 12 inches apart. The tester will operate at shorter and at longer distances, however this medium distance makes it easier to reach the controls on both devices.

ALIGNMENT: Aim the Digital Shutter Speed Tester at the camera.

CAUTION: This device emits a visible red laser light whenever the power switch is in the “ON” position. Never look directly into the laser beam. Never point the laser at other people. Never point the laser at animals.

Depress the function switch in the CALIBRATE position. Depress the POWER switch in the ON position**.** A single decimal point will indicate the ON status and the laser will be activated. Aim the laser into the center of the film plane. Tension the shutter. Set the shutter speed to “B” or “T”. Trip the shutter so that it remains open. When properly aligned, the tester LCD will display “ **C :** ”. This indicates a good reflection of the laser to the sensor. Actuate the shutter so that it closes.

MEASUREMENT: Without changing the position of the camera and the tester, tension the shutter and select a shutter speed to begin testing. Depress the function switch in the MEASURE position. The LCD will display a decimal point and four zeroes.

Press the shutter release and note the shutter speed indicated on the LCD display.

The decimal number in ten thousandths of a second can be compared to the speeds marked on the Digital Shutter Speed Conversion and Worksheet.

The worksheet has the camera shutter speeds listed fractionally along the bottom horizontal row. The correct decimal equivalent and degrees of error are listed in the vertical column above each camera shutter speed.

The reading remains on the LCD display until the next shutter speed measurement is performed. The display will reset automatically. Several tests of the same shutter speed can be performed as fast as the shutter can be tensioned and released.

Several tests at the same camera shutter speed will indicate the shutter consistency as well as accuracy.

When testing is complete, depress the POWER switch in the OFF position.

BATTERY: This tester uses 4 “AA” cell batteries. High quality Alkaline batteries are recommended. Rechargeable NiMh are also acceptable. The leftmost LCD character “**B**” indicates the need to change the batteries.