

UNIBLITZ[®] By Vincent Associates

Helping you with your selection of an external shutter for a camera and/or imaging application.

Step #1 - determine the application which requires a shutter

Typical applications involving shutters with cameras include:

- CCD arrays
- vision systems
- photography

The application is useful in determining the shutter configuration in terms of aperture diameter, blade finish and mounting options. The shutter is commonly an external device and can be fitted with an “F” mount to accommodate a user’s lens.

Step #2 - identifying the camera manufacturer and model number

Each different camera manufacturer has its own mounting scheme for applicable shutters. Typically, an external shutter would be positioned before a camera’s lens.

The shutter can be equipped with a NIKON “F” mount on its output side to accommodate a lens. The input side of the shutter can be equipped with a mounting adapter that interfaces to the applicable camera body.

The external shutter along with appropriate mounting adapters is designed to provide the proper focal plane distance for an “F” mount.

Step 3 - determining the actual shutter model number

Applicable models for camera applications include (the aperture diameter, in mm, of each model is denoted by the two digits):

- VS14
- VS25
- VS35
- CS45

How to understand the model numbers:

The shutter series name (VS, CS or CSR designation) is the first part of the model number that would be specified. The VS and CS series are designations for a standard *normally-closed* shutter blade configuration. The VS series is a two-bladed design and the CS series is a rotary five-blade design. The CSR series is a designation for a *normally-open* blade configuration and is also five blades. The CSR45 shutter is typically recommended for CCD array applications because a faster “close” time is achieved when the closure is driven by the actuator coil.

The #2 case (or #3 for CS45) option would be recommended for all camera applications requiring

an external shutter. The shutter case provides the necessary mounting holes and threads for attachment to various mounting adapters. The shutter case, which is aluminum in material, also serves as a heat sink for the shutter's actuator coil.

A standard Teflon[®] blade ("T" designation) is recommended for **all camera shutters**. The "T" blade is comprised of a stainless-steel substrate and is coated with a black Teflon[®] coating on both sides. Be advised, the "T" blade is mostly absorbing and has a limited damage threshold.

The electronic synchronization output (1 or 0 designation) available for a shutter is an optional feature, but is NOT recommended for CCD array applications. This option, which is referred to as the "SYNC", is comprised of a matched photo-electric emitter/detector pair and serves as an optical switch. The emitter diode of this "SYNC" switch operates at a wavelength of 940 nm, which is at the near IR. CCD arrays are typically sensitive to IR light emissions and would be affected by the presence of a shutter's "SYNC" feature. The "SYNC" feature is useful for providing a feedback signal that is *synchronous* with the shutter's open/close state.

The mounting adapter, if required, is the last part of the shutter model number that would be specified. The NIKON "F" mount (17 designation) is currently the only lens mount attachment available for a camera /imaging application. The mounting adapter is a two-digit part number and is preceded with a dash when specified as part of the entire shutter model number. The VS14/25/35 and CS45 shutters can be equipped with an "F" mount on their output sides.

Step 4 - determine the mounting adapter for the shutter's input side

The input side is the side that would be adjacent to an applicable camera.

There are four different mounting adapters to choose from and they include:

- #105 - called a "C" mount (1"x32 tpi) and typically applies to the VS14 and VS25 shutters.
- #110 - a "T" mount (M42x0.75) and applies to the VS14, VS25 and VS35 shutters.
- #125 - (M51x0.75) is specifically designed for a CAMELIA type CCD camera and it can be used with a VS35 or CS45 shutter.
- #127 - (M72x0.75) is specifically designed for a DALSTAR type CCD camera and applies to a CS45 shutter.

If we do not have a standard mount to fit your particular application, please contact our expert technical staff at support@uniblitz.com or **1-800-828-6972**. We can work with you to design your required shutter/camera mounting system.