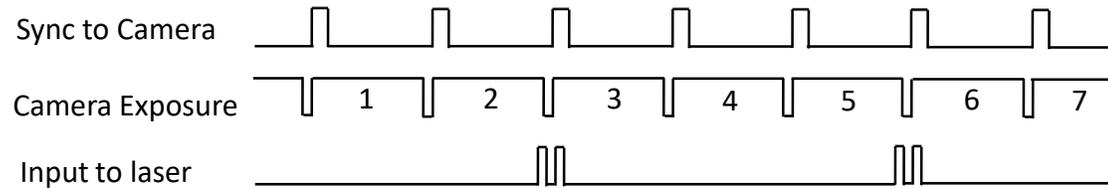


Whilst the i-SPEED DF (Dual Frame) camera is designed specifically for PIV the i-SPEED 3 can still be used for dual frame operation. The camera can be operated using two methods:

- Using constant input syncs
- Using 'Random Snapshot' mode

### Constant input syncs

The camera can be given a constant frequency and then the laser pulses aligned to the known start of the required exposures. The camera sync pulses must be continuous and must not stop between PIV double pulses.



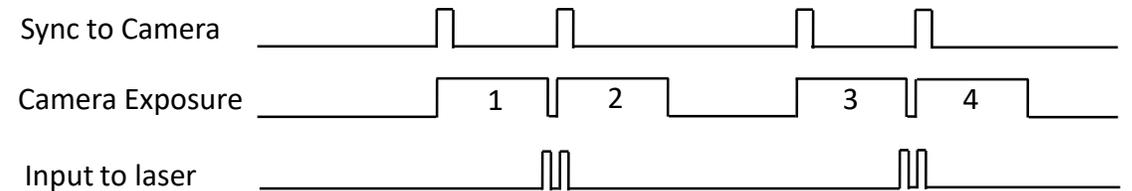
In the example above all frames 1 to 7 will be stored in camera memory but only frames 2 and 3 will contain the first illuminated pair and then frames 5 and 6 will contain the second pair, all the other frames will have no illumination.

Then using the i-SPEED Control software all the frames can be downloaded and saved as an image sequence, once all of the images are in a folder then black (non-illuminated) images can be removed.

### Random Snapshot mode

Random snapshot allows the camera to only expose a single image on receipt of a sync in signal. Live view is not possible during this time due to the sensor only framing on an incoming sync, so the last image grabbed will be held on the screen until the next sync.

This means that a double sync pulse is required per double laser pulse. The camera has a reaction time from the incoming sync and the start of exposure, this should be considered to ensure the laser fire is during the active exposure period.



Using random snapshot allows only the frames required to be stored (no black non-illuminated frames) and therefore allows much longer samples of PIV double frames to be stored in the cameras memory.

For both methods the connection to the cameras sync input is via the feature lead

