

Quintic Software

Tutorial 2

Make a Mark

v35

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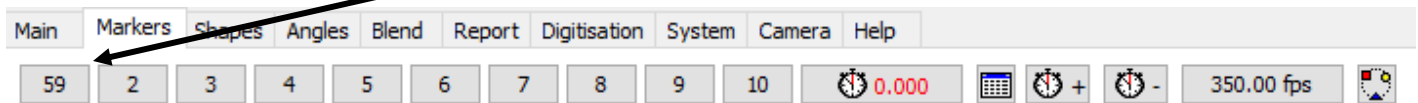
5. Distance/Angular Display Settings



1. Markers and Stopwatch

Open the video '400m Hurdles' in the 'Athletics' folder.

Open the markers tab. Markers are used to jump between key frames of a video file. Use the video scroll bar to advance the video to frame 59. Once you have done this press Marker number '1'. This will now change to show frame number 59, see below.



Set the marker's name by right clicking on the frame number and typing in the box to the right, then click the tick box. See an example below.




Repeat this process and set the other markers to the key frames: 65, 71, 77, and 85.

The markers are automatically saved each time you add/remove one.

If you close the whole program and reload this video, the saved markers will be automatically loaded.

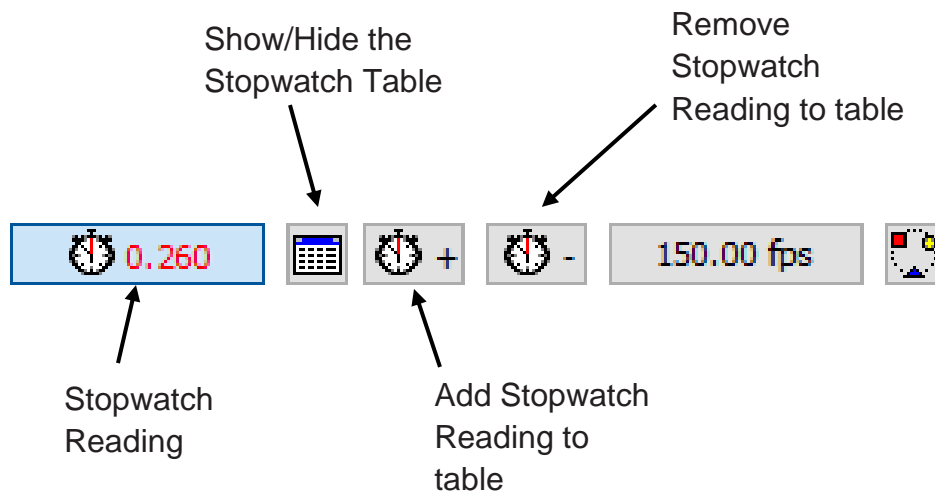
If you want to delete a marker, click on the marker, and press the 'CTRL' button on your keyboard to reset this marker.

Click on Marker 1 (frame 59) the moment of take-off. Click on the  0.000 button. This has set the stopwatch to measure the time elapsed from Marker 1 (frame 59). If you then click on Marker 4 (frame 77), this will show the elapsed time between the two frames (0.36 seconds) and advance the video to this frame. It can measure to six decimal places at very high frame rates.

Users can also put any stopwatch readings into the stopwatch table.

Once you have made a stopwatch reading, simply click the 'Add Stopwatch to Table' button which will add the time to the stopwatch table.

To remove a stopwatch reading from the table, simply click the 'Remove Stopwatch from Table' button and the most recent stopwatch reading will be removed.



If the stopwatch table is not already open, the Quintic software will automatically open the table when a stopwatch reading is added.

As well as the time, users will also be able to see the first frame used for the reading, the last frame used for the reading and will also be able to name the stopwatch reading e.g. Step time.

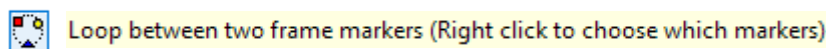
Please see an example table below.

Stopwatch Table			
Times			
FIRST	LAST	SECS	NAME
10	48	0.253	Left
62	101	0.260	Right

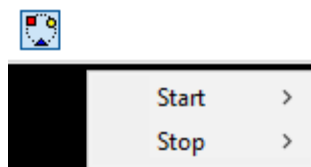
Users can save the stopwatch table to either an excel or word file. This can be done by clicking the save button on the table, then by selecting either 'Save Table to .txt File' or 'Save Table to Excel file.'

N.B. If a non-Quintic camera has been used you may need to set the correct recording speed. This can be done by clicking on the frames per second button shown within the 'Markers' Tab. Then, simply enter the correct frame rate. The correct recording speed can also be changed via the '**Digitisation**' menu (see Tutorial 7A for more details), otherwise elapsed times will be calculated at the default speed of 30fps.

The video can also be played in a loop between two frame markers. Click the button below to try this.



If you have more than two frame markers set, you are able to choose the two markers you would like to loop between. This can be set by right clicking on the loop button within the markers tab.



This will bring up the option to choose the starting loop point and the ending loop point.

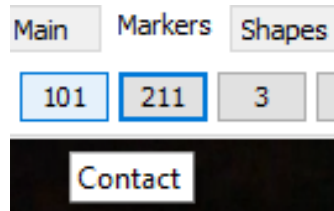
Frame markers added to synchronised videos are linked automatically, saving time.



If more than one video is synchronised within the software (either manually using the synchronisation button OR Automatically when Quintic Cameras are used), then any frame markers that are set within the main window will be added to any other synchronised videos.

a. Default Frame Marker Names

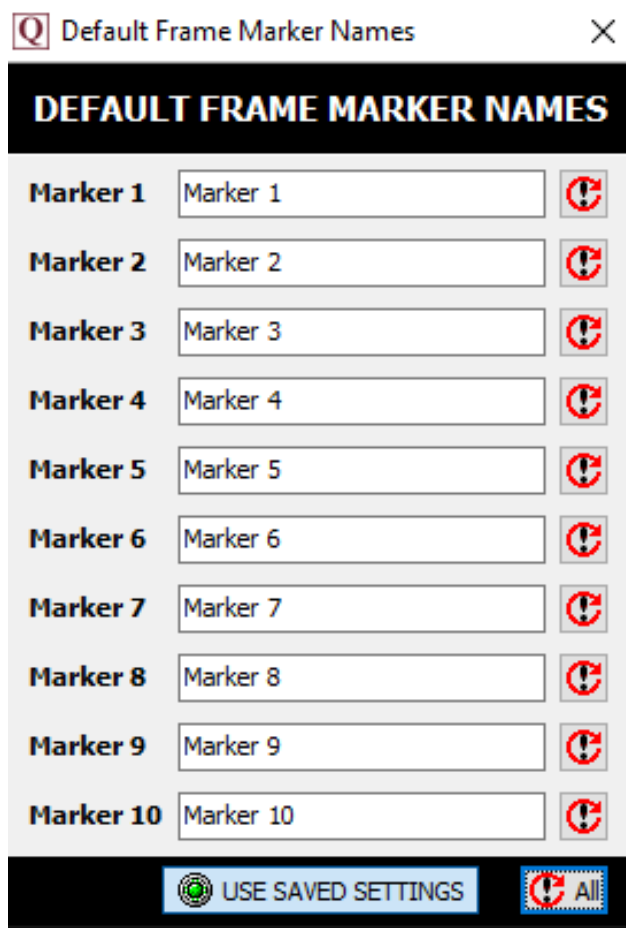
The user also has the option to set default marker names for video windows. Great if you are always identifying the same key frames – no need to re-type the names for each video.



To create your own Default Frame Marker Names, please click on the ‘Default Frame Markers Names’ option within the Help menu. It is recommended that this should be done without a video being open within the software.

[Default Frame Marker Names](#)

Once clicked, this will bring up the Default Frame Marker Names window



Simply type in your preferred default frame marker names.

Once you are happy with the marker names you have typed in, ensure that the 'Use Saved Settings' is clicked, in order for the default markers to be remembered.

 Default Frame Markers will be used.

 Default Frame Markers will not be used.



This will reset an individual frame marker name.



This will reset all the frame marker names.

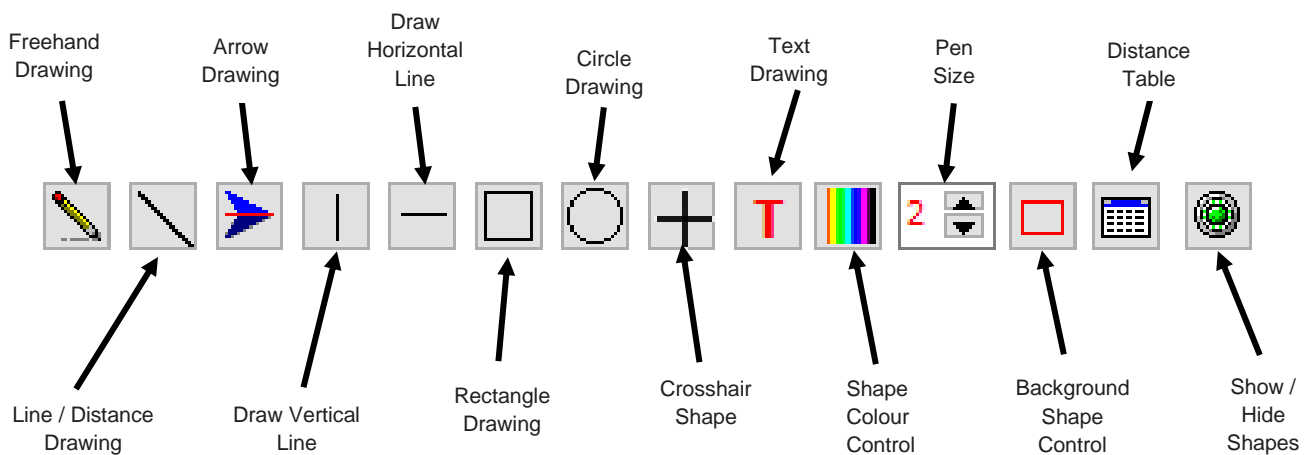
2. Creating Lines, Shapes and Text

Reset the '400m Hurdles' video clip to the beginning and click on the 'Shapes' tab as shown below.



A number of the buttons under this tab allow you to draw shapes on the video. The shapes will stay on throughout the video clip unless you remove them. Try them out.

Draw any of the shapes by clicking on the shape button you require, moving the cursor over the screen to where you want the shape to be, then holding down the left mouse button and dragging the shape across the screen.



Play the video through once you have added some shapes. Once a shape is added to the video, the software will automatically save this for you.

When you are within the shapes tab but have no shape selected, you can move existing shapes (except freehand drawing) and reposition them. If you hover over a shape on the video, this will highlight the shape and it will change colour. If you then single left click and hold, you can drag the shape into a new position.

If you double click on a highlighted shape, it will be deleted. Again, the software will automatically save when a shape has been moved or deleted.

Please note you must be within the shapes tab for the shape highlighter to work.

The following buttons allow you to change the thickness and colour of the lines you draw.



The buttons below allow you to decide whether the shapes drawn (circle and rectangle drawing only) have a clear or coloured background.

When the background shape control button is unfilled the shape will have a clear background. When the background shape button is filled in the shape will have a coloured background.



Unfilled Background
shape button

(Clear Background)



Filled Background
shape button

(Coloured Background)

Click on the button with a red 'T' on it and you can place some writing anywhere on the video image. Click the 'F' that appears underneath the sample text box and you can change its font, colour and style etc. Write the text you require on the video in the sample text box, then click OK.



The software will remember the most recent font choice, meaning users will not have to select this each time.

If you left click and hold on the video, your written text will be displayed on the video. Position this as you wish whilst still holding the left button on the mouse down. Once in position, simply let go of the left button and the text will be displayed on the video.

The Show / Hide button will show and hide all the shapes which are drawn onto the video. When the green light on the Show/Hide button is on, the shapes will be shown. When the green light is off, the shapes will be hidden.



Show / Hide Button on
(Shapes will be shown)

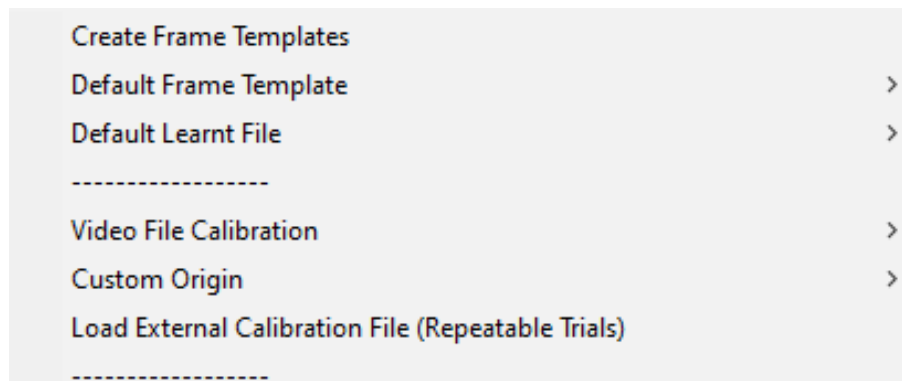


Show / Hide Button off
(Shapes will be hidden)

3. Calibrating and Measuring Linear Distances

To measure a desired distance on a video, the video first needs to be calibrated.

Click on the '**Digitisation**' tab and then on the '**Digitisation**' menu.



Either:

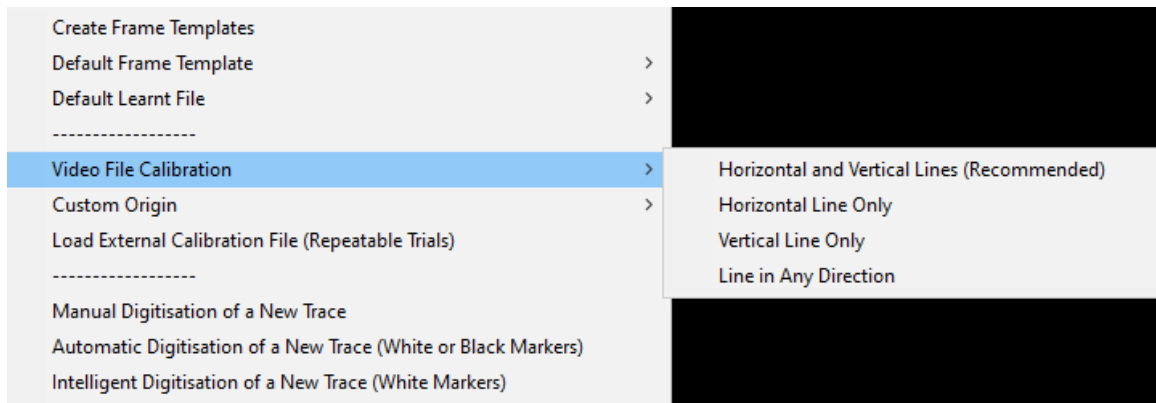
a) Select '**Video File Calibration**' from the drop down menu, if you know the length of something that is part of the action (e.g. a javelin, cricket bat, leg length or stump height).

Choose one of the options presented:

- If you know certain distances in both the horizontal and vertical directions then choose '**Horizontal and Vertical Lines**'
- If only the horizontal distance is known then choose '**Horizontal Line only**'
- If only the vertical distance is known then choose '**Vertical Line only**'
- If any other distance is known then choose '**Line in any Direction**'

Hold the cursor over one end of the known distance, click the left mouse button and drag the cursor to the other end. Enter the distance and click '**Accept**'


Once the distance has been completed, the software will ask for the frames per second (FPS) of the video. If a Quintic High Speed Camera is used, this will be the true frames per second of the video. If a mainstream camera is used, you may be required to input the frames per second that was used.



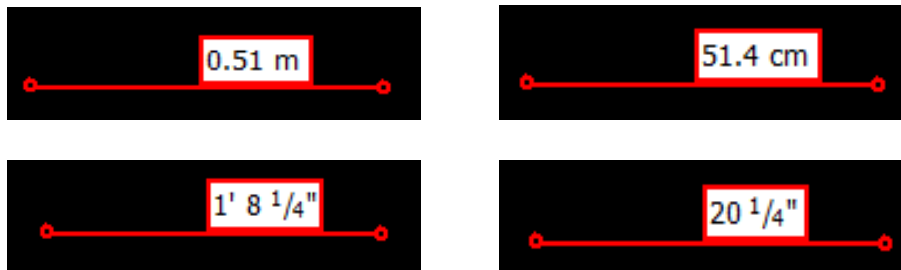
Or

b) Select '**Load External Calibration File**' if you have used the same background and camera position as a previous video that has already been calibrated.

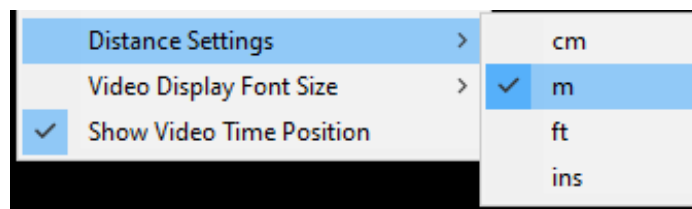
Important: The camera must not have been moved between the filming of the two clips.

After the calibration process has been completed a desired distance can be measured by left clicking on the  button and drawing a straight line between the two points you wish to measure. When the line has been drawn on the video, the distance in metres or feet (depending on calibration) will appear on the line that has been drawn.

Drawn distances can be displayed in centimetres, metres, feet or inches, irrespective of which unit was used at calibration.



To change the units, go to the settings option within the help menu. Then go to Distance Settings and choose your preferred unit. This will update any distances already measured on the video.



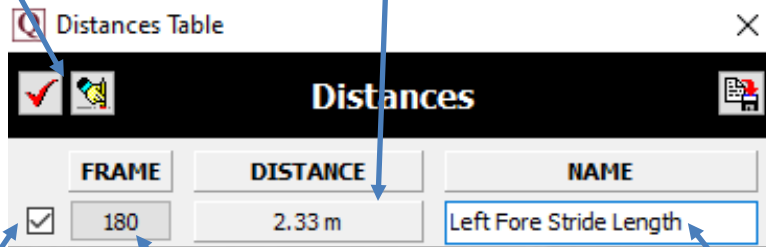
Distance measurements are also displayed in the Distances Table.

Press the Distance Table  button to display the table.

These buttons will either show all the distances in the table on top of the video or hide all the distances.

This is the distance the user has drawn onto the video.

The Distances table can be saved to a text file or excel file.



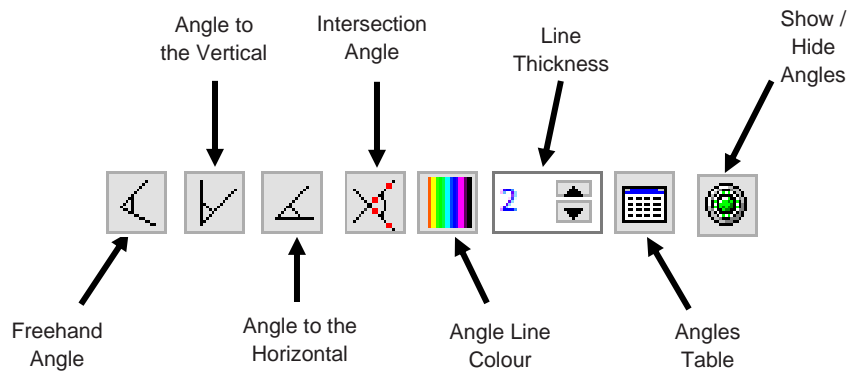
	FRAME	DISTANCE	NAME
<input checked="" type="checkbox"/>	180	2.33 m	Left Fore Stride Length

Users are able to select which distances are to be displayed on the video at any one time.

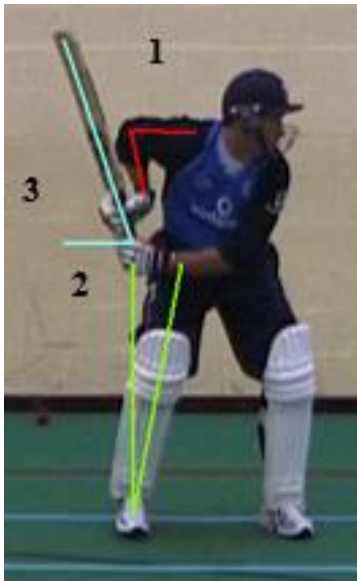
Users are able to press the associated frame number for a distance and the video will jump to that frame.

Users can name the distance in question

4. Angles



There are four different types of angles that can be created. For each one, hold down the left mouse button and drag on the screen the length of the object for which you wish to measure an angle, then release the mouse button. Examples of these angles are shown below:



1. The angle between two straight lines e.g. Elbow angle.





2. The angle between a line you specify and an exact vertical line e.g. angle of body lean. Left mouse button will draw the vertical line up, the right mouse button will draw the vertical line down.




3. The angle between a line you specify and an exact horizontal line e.g. angle at which the bat is being held. Left mouse button will draw the horizontal line to the left, the right mouse button will draw the horizontal line to the right.



The intersection angle. Draw two straight lines anywhere on the video (they do not have to join) and the intersection angle will be calculated and displayed.

In the same way as the shapes, the line colour and thickness of the angles can be changed using the   buttons.

These angles have automatically been calculated for you and can be displayed by clicking the  button.

This will open the Angles table.

These buttons will either show all the angles in the table on top of the video or hide all the angles.

This is the angle the user has drawn onto the video, regardless of which angle method was used (freehand, angle to horizontal, angle to vertical or intersection angle).

Users can control the angle display on the table and video. Users can display the drawn angle only, drawn angle and straight line (180 degrees) or drawn angle and opposite angle (360 degrees).

Q Angles Table X

Angles

	FRAME	ANGLE	NAME
<input checked="" type="checkbox"/>	1	67.77°	Knee
<input checked="" type="checkbox"/>	51	33.91°	Ankle
<input checked="" type="checkbox"/>	161	41.60°	Hip

The Angles table can be saved to a text file or excel file.

Users are able to select which angles are to be displayed on the video at any one time.

Users are able to press the associated frame number for an angle and the video will jump to that frame.

Users can name the angle in question

The Angle table can display up to 20 angles, with the ability to add frame numbers and show/hide individual angles.

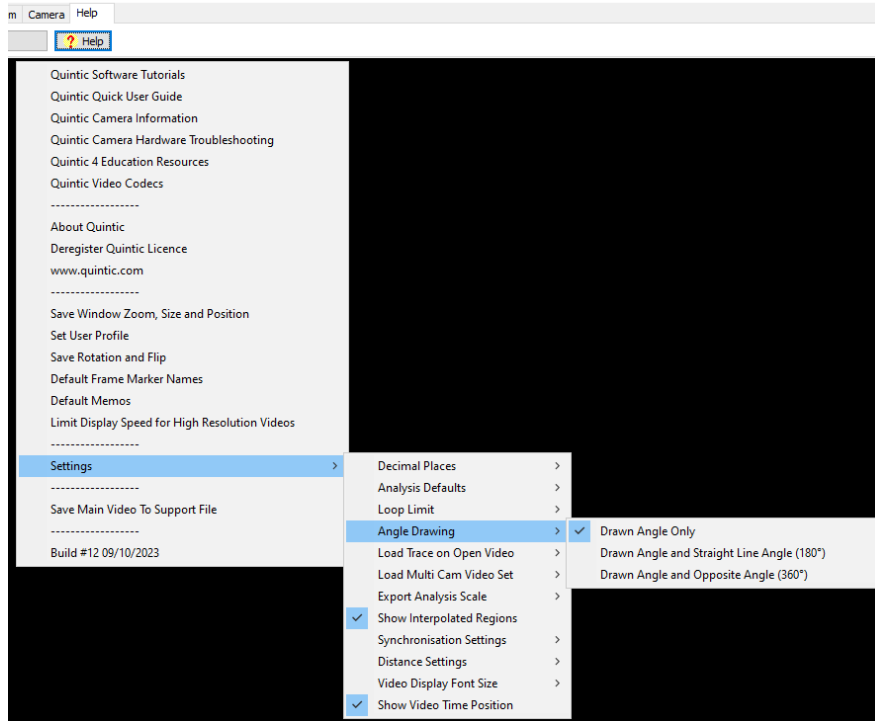
Once an angle is added to the video, the software will automatically save this for you.

When you are within the angles tab but have no angle selected and hover over an angle on the video, this will highlight the angle (which will also highlight the angle in the angles table if it is open) and it will change colour.

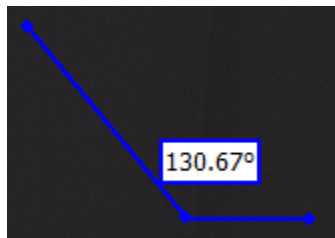
If you double click on a highlighted angle, it will be deleted. Again, the software will automatically save when an angle has been deleted.

Please note you must be within the angles tab for the angle highlighter to work.

Within the Help tab, Help, under Settings, Angle Drawing there are a range of different angle options available. These include:



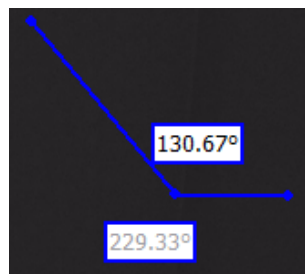
Drawn Angle only



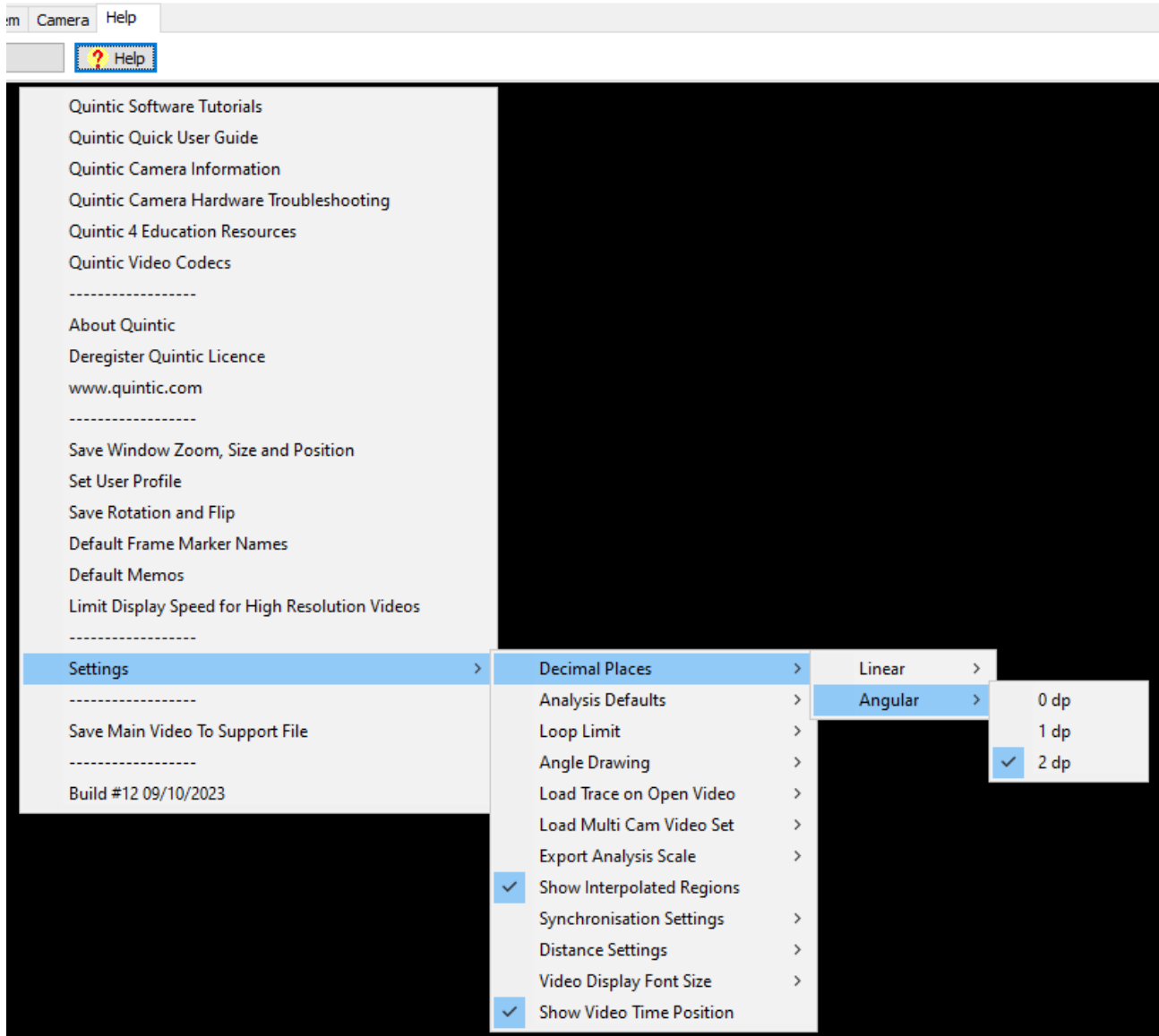
Drawn Angle and Straight Line Angle (180°)



Drawn Angle and Opposite Angle (360°)

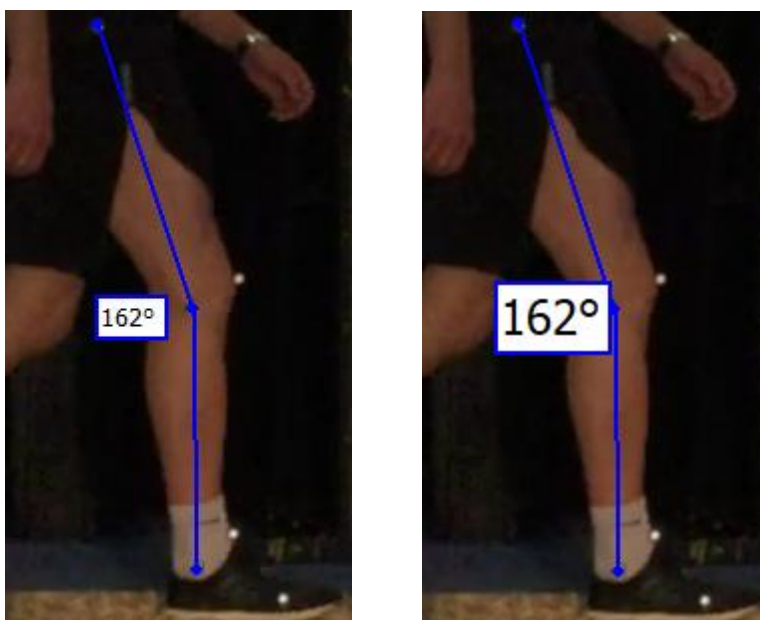


Users are also able to control how many decimal places are displayed for the drawn angle.



5. Distance/Angular Display Settings

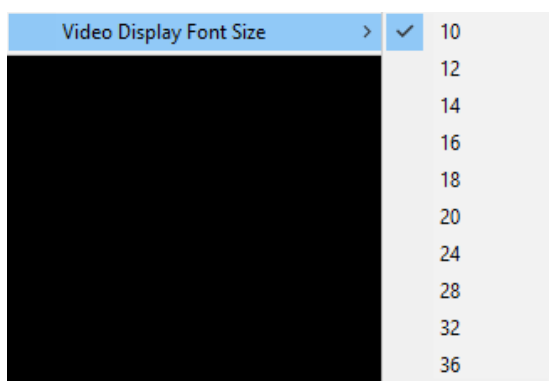
Users are able to alter the size of the font when using the distance measurement and angular analysis. Ideal when used with the photo sequence



To alter the size of the font for the distance measurements/angular analysis, click on the 'Video Display Font Size' option within the settings menu.

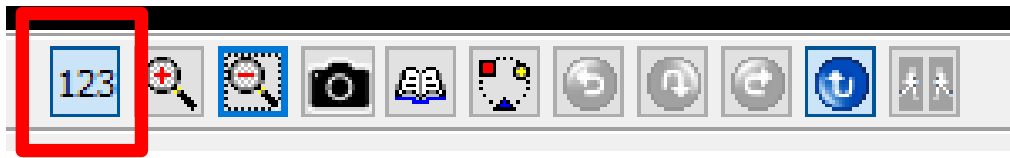
Video Display Font Size >

Users are able to choose between the following font sizes:

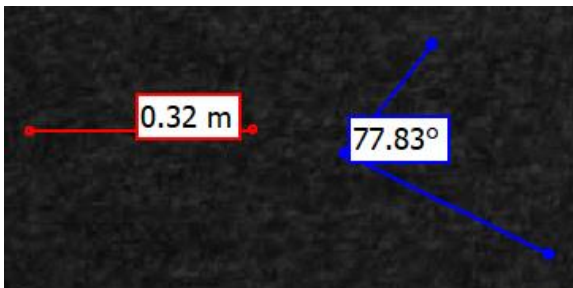


Simply click on your preferred font size.

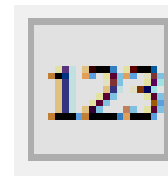
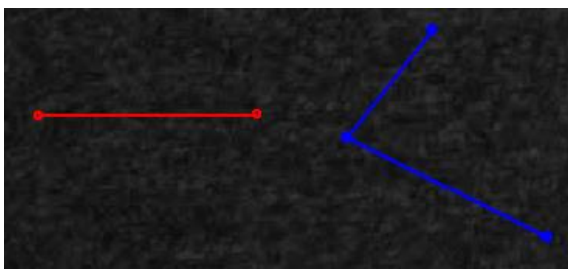
Users can now turn off and on the distance and angle labels for drawings. This can be done by pressing the 123 button towards the bottom right hand corner of the main screen.



When the 123 button is turned on (lit up blue), the labels for any distance/angle drawings will be displayed on the video.



When the 123 button is turned off, the labels for any distance/angle drawings will be hidden from the video.



As default, the distance and angle labels are turned on.