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Flashlight BLZ2010

Short introduction to Video Technology

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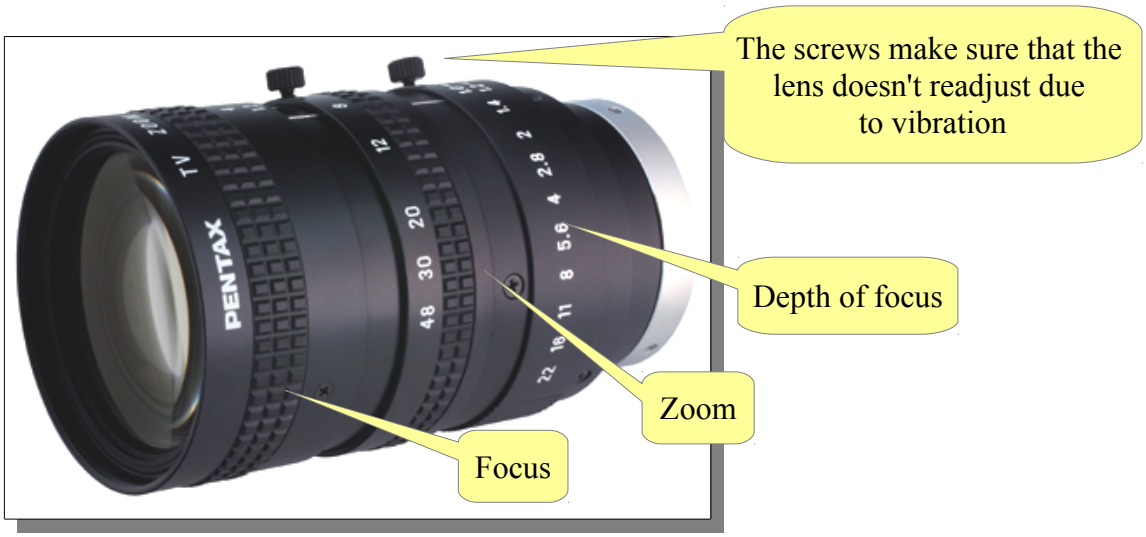
1.0 Short introduction to Video Technology

This is a general condensed introduction. Use the information at your own risk.

Requirements are:

- Scharpness
- Depth of focus
- Zoom
- Low web movement / Exposure time
- Continuous acquisition of the web in MD

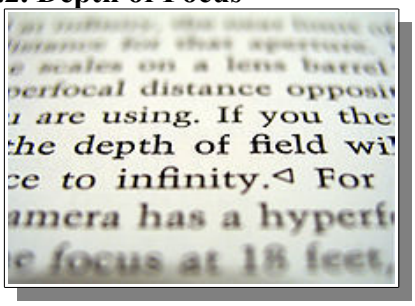
It is nearly impossible to account for all these requirements at the same time. A vario lens is very common.



1.1. Focus

Every lans lets you adjust the the sharpness.

1.2. Depth of Focus



The camera often looks into the machine from the side at a relatively flat angle. Therefore the depth of focus is important.

Small number, e.g. 1.5 ➔ low depth of focus, bright picture
Larger number, e.g. 8 ➔ high depth of focus, possibly darker picture.

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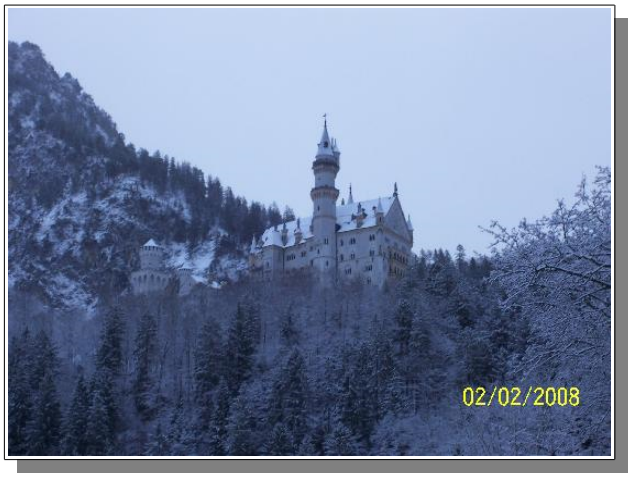
1.3. Zoom



Adjust to your requirements.

1.4. Web movement / Exposure time

The web moves while the camera takes a picture. This movement blurrs the picture and has nothin to do with focus (D1). The exposure time should be set to as short as possible. A short exposure time requires a lot of light to result in a bright picture.

Web movement and exposure time:
Ideally one would always select a 1/10,000 second. Often the amount of light is not sufficient.

Pm-Speed	Exposure Time (Sec)			
	1/2000	1/4000	1/5000	1/10000
1200 m/min	10,0 mm	5,0 mm	4,0 mm	2,0 mm
1500 m/min	12,5 mm	6,3 mm	5,0 mm	2,5 mm
1700 m/min	14,2 mm	7,1 mm	5,7 mm	2,8 mm
1900 m/min	15,8 mm	7,9 mm	6,3 mm	3,2 mm
2200 m/min	18,3 mm	9,2 mm	7,3 mm	3,7 mm

1.5. Continuous acquisition of the web in MD

„MD“ = Machine Direction. The camera must film the web continously and no gap between the pictures. The number of pictures per second reqired depends on the camera zoom selected.

PM Speed	50 Fps	100 Fps
800 m/min	270 mm	130 mm
1.200 m/min	400 mm	200 mm
1.500 m/min	500 mm	250 mm
1.800 m/min	600 mm	300 mm
2.000 m/min	670 mm	333 mm

Example: The camera “sees“ 500mm of the web in MD; then there will be gaps at a speed above 1500 m/min.

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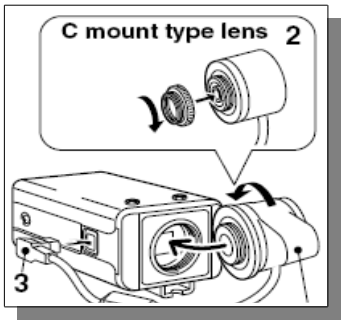
1.6. Light spot size and distanc to object

	Light Spot Size	
Distance	12,0 Degrees	30,0 Degrees
1,0 Meter	0,2 Meter	0,6 Meter
2,0 Meter	0,4 Meter	1,2 Meter
3,0 Meter	0,6 Meter	1,7 Meter
4,0 Meter	0,9 Meter	2,3 Meter
5,0 Meter	1,1 Meter	2,9 Meter

1.7. Setup example using the analog Sanyo VCC6574P camera

The camera has some dip switches behind the side panel.

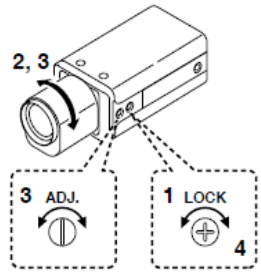


There are C und CS lens mounts.

- C-Lens requires an adaptor ring.
- CS-Lens are srewed in directly

1.7.1 Adjusting the Focus

First adjust the CCD chip position.



Flange-back adjustment

If the pick-up surface is not correctly positioned with relation to the lens focal point, the picture will be out of focus (in particular when using auto-iris power zoom lenses, sold separately). If that is the case, adjust the flange-back position as described below.

1. Using a + screwdriver, loosen the **FLANGE BACK LOCK** screw (**M2:+**).
2. Set the zoom lens to the maximum telephoto position, set the focus using the focus ring on the lens.
3. Set the zoom lens to the maximum wide angle position, set the focus using the **FLANGE BACK ADJ.** screw.
4. Repeat steps 2 and 3, until the image stays in focus when changing from a telephoto shot to a wide angle shot. When the setting is complete, tighten the **FLANGE BACK LOCK** screw.

1. Unlock screw (1)
2. Set lens zoom to infinity
3. Adjust screw (3) to focus picture
4. Set lens zoom to very near
5. Adjust screw (3) to focus picture
6. Find compromise

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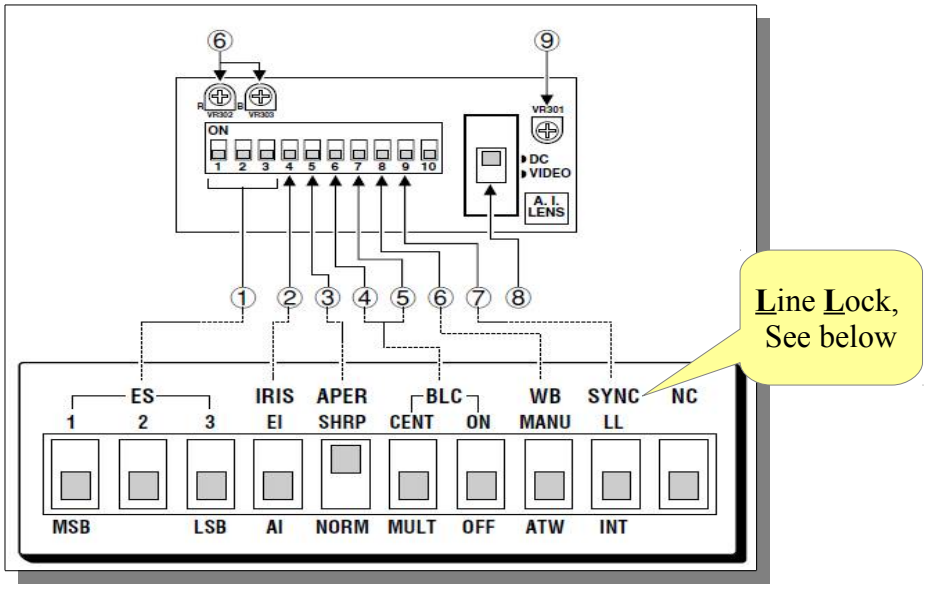
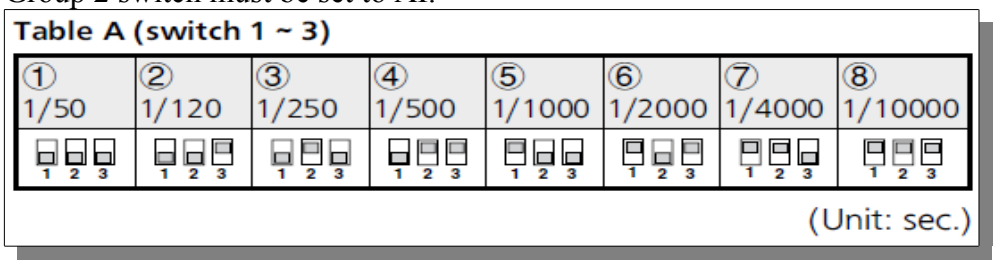
1.7.2 Othe Settings



1.7.2.1 Group 1, Expoosure Time

Group 2 switch must be set to AI.



1.7.2.2 Group 2, Iris

Must be set to „AI“.

1.7.2.3 Group 3, Aperture compensation

Must be set to „Norm“.

1.7.2.4 Group 4, Back light compensation

Doesn't matter.

1.7.2.5 Group 5, Hintergrundlichtkompensation

Should be set to „OFF“.

1.7.2.6 Group 6, White board

Should be set to „Manual“.

1.7.2.7 Group 7, Synchronization

Must be set to „Line Lock“

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1.7.2.8 Group 8, Motorised Auto-Iris-Lens

Not used.

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