PANORAMA

N
NOVOFLEX

VR-System II
VR-System 6/8
VR-System PRO II

*Panorama
(Greek) the panorama,
unbroken view of an
entire surrounding area.*

Create images beyond the
limits of vision or format!
Start shooting at the point where
the scene begins and finish where
the scene ends or just reproduce
a complete space around you!
Perspective limits, which once were
set by the technology of your
camera or your lenses, no longer
exist – now it is your challenge
as a photographer!

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Panorama photography:
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Know-how

Entrance pupil = turning point

(1)

*NOVOFLEX ClassicBall 5
(not included in the scope of delivery)*

*Toolbox: Novoflex Panorama
VR System II, Canon EOS 40D with
EF-17-40/4 USM at 40 mm,
cylindrical projection, horizontal
field of view approx. 120°*

*With the stitching technique, several pictures are taken one
after another, with the camera being rotated around a specific
angle each time. Then, all pictures are merged together with
a stitching software, e.g. Panorama Studio, into a complete
panoramic image.*

Why do I need a panorama head?

The panorama head enables the rotation of the system around the centre of
the entrance pupil (1) of the lens, also called the "nodal point" or "optical
centre". By doing this, shifting of the foreground in relation to the background
is avoided which is of vital importance for the completion of the individual
images. Only by rotating around the nodal point the stitching software can
work accurately, which guarantees optimal results.

Wrong

*Turn to the right without
panorama head
The foreground (flower) moves
to the left towards the back-
ground (mountain). This will
cause problems when assem-
bling the panorama.*

Right

*Turn to the right with
panorama head
The foreground (flower) stays
properly positioned with the
background (mountain). This is
the requirement for accurate
stitching of the panorama.*

How to locate the entrance pupil?

Quite simple - by trial and error! To each Novoflex panorama head a detailed
operating manual is attached. We recommend that you note the values you
have found for each lens for later shooting. Exact scales on the plates and
the focusing rack guarantee quick and efficient adjustment of the panorama
head before shooting.

Advice:
*With wide-angle lenses, the entrance pupil is usually located some
millimetres behind the front lens towards the camera. With normal or tele
lenses, the entrance pupil moves backwards as the focal length increases.*

The Classic: VR-System II

Toolbox: Novoflex Panorama VR System II, CANON EOS 40D with EF-S 17-85/4-5.6 IS USM at 17 mm, 9 images, cylindrical projection, horizontal field of view 360°.

NOVOFLEX ClassicBall 3 (not included in the scope of delivery)

Application:
Suitable for single row cylinderical or flat panoramas. Depending on camera and lenses, field of view up to 360° horizontally and 120° vertically are possible. Recommended lenses: Wide-angle lenses with minimum 10 mm focal distance, standard zooms up to tele lenses up to 135 mm focal length.

New in release II:
The panorama plate is now equipped with the Q dove-tail clamp. The system is easily seperated into several pieces for transport and the focusing rack is ready for other photographic tasks.

Advantages:
• Simple, handy system
• The individual parts can be used for other tasks as well
• All-in-one solution: Apart from the hardware, the stitching software PanoramaStudio is also included (unlimited full version).

For whom?
The new panorama VR-System II was developed for the photographer, who prefers the classic, single row cylindrical or flat panorama and who appreciates the simple and handy design of the system. It is of special interest for nature photographers doing panoramic shooting as well as macro and landscape photography, using the focusing rack and L bracket for other tasks, too.

Advice:
We recommend to keep the constancy of aperture, exposure time, white balance and focus during the whole shooting.

The Specialist: VR-System 6/8

Toolbox: Cubic reproduction of a panorama with 360° x 180° field of view. Novoflex Panorama VR System 6/8, CANON EOS 450D with Sigma 8/3.5 Fisheye, 6 images.

Advice:

To avoid lens flares if you want to include the sun in the panorama: Center the first image as precisely as possible directly into the sun. The sun should not appear again in the next images. Always use a lens hood! A low sun position is very helpful if you are taking pictures within a horizontally aligned row.

NOVOFLEX ClassicBall 3
(not included in the scope of delivery)

For whom?

The Panorama VR-System 6/8 is the solution for photographers specialised in spherical panoramas for internet applications, virtual tours etc.
The utilisation of a fisheye lens reduces the number of required images for a complete spherical panorama (360° x 180°) to three to eight images (depending on the focal distance and the crop factor). Thus, a high-quality result can be achieved quickly and efficiently.

Details:

The upper panorama base slides in the guide rail of the L-bracket, making additional adjustments of the base unnecessary when changing the height.
Both bases are equipped with click-stops and include a space-saving built-in spirit-level. The locking screws are removable if needed.

Brand-new:

Optimised for fisheye lenses the new VR-System 6/8 enables horizontal and vertical rotation around the nodal point of the lens with two click-stop-panorama bases. Increments of 45° and 60° each, as well as stepless rotation can be set up. If the images are taken at every second click-stop, additional increments of 90° and 120° are possible. The system is sized to allow a complete vertical rotation of the camera. Each panning base is construced very small and equipped with an integrated spirit-level, so it doesn´t intrude into the picture.
Thanks to the milled-out portion of the L-bracket the spirit-level can be seen from above. The front locking screw can be removed and is only needed in case of stepless adjustment. Due to its size and stability of the head a professional D-SLR camera can be used.

The professional allrounder: VR-System PRO II

*Toolbox: Tele panorama Novoflex VR-System PRO II,
10° steps (increment selector at position 36), vertical downtilt of 10°,
CANON EOS 5D with EF 135/2.0 L USM, 17 images, 110MP.*

*NOVOFLEX ClassicBall 5
(not included in the scope of delivery)*

Application:

The VR-System PRO II enables the parallax-free, horizontal and vertical pivoting around the nodal point of the lens. It is designed for multi-row panoramas in perspective-corrected flat or spherical projection. Due to the lower panorama base that can be moved in eight adjustable increments, classic single-row cylinder panoramas can easily be done as well. Comfort, stability and precision are the main features of this professional panoramic head.

New in release II:

The upper panorama base is now equipped with click-stops for two selectable increments (45° and 60°). The L-bracket was enlarged and stabilised. The upper clamping plate was also lenghtened and includes a movable anti-twist camera stop.
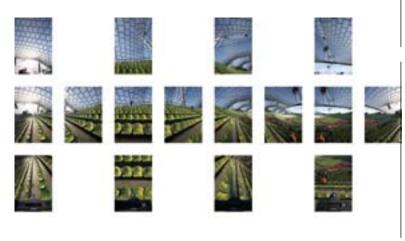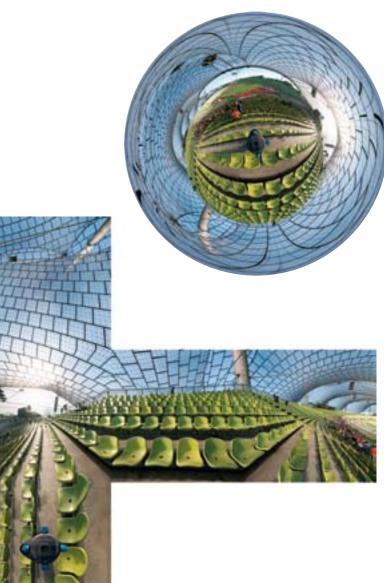
For whom?

The Panorama VR-System PRO II is the perfect solution for professional photographers dealing with all facets of panoramic photography. The VR-System PRO II masters all varieties from spherical panorama, perspective-corrected flat panoramas or classic cylindrical panoramas, even when heavy professional DSLR equipment is used.

Advice:

Use a remote-control release and the mirror-up exposure or LiveView of your camera!

Example 1

Spherical panorama without fisheye: 16 images in
3 layers with a „normal" 17 mm wide-angle lens and
a full-format camera create a cubical, respectively
spherical panorama covering the complete space
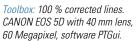(360° x 180°) in enormous resolution.

Example 2

There is an easy panoramic solution for the problem of
"convergent lines in the field of architectural photography".
Simulate a digital shift lens, e.g. as in this case with a
19 mm focal length by using software! Due to the multiple
individual images you get resolutions that are higher than
those of digital backs.

*Toolbox: 100 % corrected lines.
CANON EOS 5D with 40 mm lens,
60 Megapixel, software PTGui.*

*Single frame without panorama
technique from the same position.
CANON EOS 5 D with 19 mm lens,
12.8 MPixel.*

Types of projection

Cylindrical projection
(ideal for wide field of view)

On the right photo you see the most common projection type, the cylindrical projection. The advantage here is that you can also create panoramas with a large horizontal field of view up to 360°. Imagine yourself standing in the centre of a cylinder looking at the surface from inside. Reproducing a cylindrical panorama on a flat surface, e.g. as a print, horizontal lines, except the horizon itself, will appear curved and even more so the further they are away from the horizon. With wider fields of view this is clearly visible – refer to the photo of the Brandenburger Tor.

Cylindrical projection (200°, horizontal field of view, curved lines)

Flat projection
(The habitual perspective)

In the case of smaller field of views the alternative is flat projection, where bending of lines is avoided. In this type of reproduction a classic wide-angle or super wide-angle on a "normal" camera is digitally simulated. In case of an extreme wide field of view, however, distortions of objects at the image borders show the so-called "super wide-angle effect". This is not a fault of the lens, but reflects the natural reproduction with a very wide optic. With flat projections only a picture perspective of less than 180° can be reproduced. The reason is that on flat surfaces only objects can be reproduced that are in front, but not that are positioned behind or beside the camera can be captured.

Flat projection (140°, horizontal field of view, straight lines, wide-angle distortion at the picture border)

Spherical projection
For the whole space!

For panoramas that reproduce the whole space of 360° x 180°, spherical or cubical projections are the first choice. These panoramas are mostly used for internet presentations rather than for print. They are integrated into the website with Java, Flash or Quicktime players. The visitor can move interactively in the panorama, seeing just a part in the flat into that he is used to. Several examples are presented on the internet at www.pixelrama.de

Which projection type should be used? This decision depends on the field of view, the scene and your own choice. By the way: You do not need to make this decision when taking the pictures. This can be made later on at your computer, where you can compare the different variants. Generally speaking, the following is recommended:
Small field of view = flat projection
Wide field of view = cylindrical or spherical projection.

Reproduction as a cubical panorama with six square faces.

Spherical projection with 360° horizontal and 180° vertical picture field of view

Advice:
The stitching software PTGui is one of the few programmes offering all of the projection types presented on this page.

Panorama heads and plates

Panorama heads

	Panorama VR-System II	Panorama VR-System 6/8	Panorama VR-System PRO II
Panorama plates / Click-stopps	1x Panorama=Q / no	1x Panorama=Q 6/8 / yes 1x Panorama=VR / yes	1x Panorama=VR / yes 1x Panorama=Q PRO / yes
Delivery scope	Panorama base Panorama=Q, focusing rack Castel Q (length 20 cm), L-bracket QPL-Vertikal, spirit-level for flash shoe, software PanoramaStudio, manual on CD	Panorama bases Panorama=Q 6/8 and Panorama=VR for L-bracket QPL VR-PRO, clamping plate QPL-PANORAMA, spirit-level for flash shoe, printed manual	Panorama base Panorama=Q PRO with click-stops, L-bracket QPL-VR PRO (23 x 23 cm), Panorama base Panorama=VR with click-stops 6/8, clamping plate QPL-Panorama, spirit-level for flash shoe, printed manual
Suitable lenses	Focal lengths from 10 to 135 mm	Fisheye, super wide-angle lenses on full-format cameras	Focal lengths from 10 to 300 mm
Adjustment in optical axle	125 mm	150 mm	150 mm
Image reproduction	Single row	Single and multi row	Single and multi row
Panorama type	Flat and cylindrical projection	Spherical projections and other projection types derived from it	Flat, cylindrical and spherical projection
Recommended software	PanoramaStudio (included in the scope of delivery, for cylindrical projection only), PTGui	PTGui, Photoshop	PTGui, Photoshop
Weight	960 g (2.1 lbs)	1230 g (2.7 lbs)	1690 g (3.7 lbs)
Camera / tripod fitting	1/4" resp. 3/8" / 1/4"	1/4" resp. 3/8" / 1/4"	1/4" resp. 3/8" / 1/4"
Order code	VR-SYSTEM II	VR 6/8	VR-PRO II

Panorama bases and plates

	Panorama	Panorama=Q	Panorama=Q 6/8	Panorama=Q PRO
Scale	360° in 10° steps	2 x 180° in 10° steps	360° in 10° steps	360° in 10° steps
Click-stops	No	No	360° stepless 60° with 6 steps 45° in 8 steps	360° stepless, 60° in 6 steps 45° in 8 steps, 36° in 10 steps, 30° in 12 steps, 24° in 15 steps 20° in 18 steps, 15° in 24 steps, up to 10° in 36 steps
Quick-release	No	Yes, Q=Mount	Yes, Q=Mount	Yes, Q=Mount
Spirit-level	Yes	Yes	Yes	Yes, crossed spirit-levels
Dimensions	90 x 60 mm (3.6 x 2.4")	93 x 60 mm (3.7 x 2.4")	75 x 60 mm (6.7 x 2.4")	140 x 86 mm (5.5 x 3.4")
Height	18 mm (0.7")	33 mm (1.3")	33 mm (1.3")	35 mm (1.4")
Weight	170 g (0.4 lbs)	260 g (0.6 lbs)	270 g (0.6 lbs)	630 g (1.4 lbs)
Camera / tripod fitting	1/4" resp. 3/8" / 1/4"	1/4" resp. 3/8" / -	1/4" resp. 3/8" / -	1/4" resp. 3/8" / -
Order code	PANORAMA	PANORAMA=Q	PANORAMA=Q 6/8	PANORAMA=Q PRO