

# LIGHTPHASE C645

*GETTING STARTED*

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# 1 Introduction

The LightPhase C645 is a single shot digital camera back for the innovative CONTAX 645 camera. The CONTAX 645 utilizes a TTL phase difference detection type auto focus system. Furthermore the CONTAX 645 provides auto exposure settings. The CONTAX 645 with a LightPhase C645 back encourages all kinds of photographic uses from portraiture and wide-angle photography to high speed shooting to capture fast action with telephoto lenses.

The functionality of the LightPhase C645 is well integrated with the CONTAX 645 camera. The LightPhase camera back communicates with the CONTAX camera through a fast internal electrical computer interface. This exciting direct digital solution is a result of a development project fully supported by Kyocera.

The LightPhase C645 is based on the highly recognized LightPhase technology. The application software for the LightPhase C645 is the same as for all LightPhase products. The LightPhase Users Guide is a general manual for the LightPhase product. This Manual "LightPhase C645 - Getting Started" covers only specific LightPhase C645 features and functionality.

## 2 Special LightPhase C645 features

### **Auto exposure**

The CONTAX 645 can work in different auto exposure modes. This is fully supported by the LightPhase C645, which communicates the equivalent film speed of the digital back to the CONTAX 645 camera.

When capturing with auto exposure modes, exposure times between 1/4000 sec. and 32 sec. can be obtained. Please note that images captured with exposure times longer than 2 sec. can be degraded because of increased digital noise. The auto exposure of the CONTAX 645 camera use the ISO value set by the LightPhase C645. The ISO value set by the LightPhase 645 corresponds to the sensitivity set in the LightPhase application. The sensitivity can be set to ISO 50 or ISO 100.

### **Double exposure protection**

With the C645 it is not possible to accidentally double expose the image by capturing one image quickly after another e.g. when using continuous capture mode. The LightPhase communication with the CONTAX 645 is disabling capture functionality in the camera when necessary.

### **Image orientation detection**

The CCD in LightPhase C645 is positioned in landscape orientation. Whenever an image is captured in portrait position by rotating the camera, an internal sensor detects this new position and the image will appear with the correct orientation in the LightPhase application.



*Camera orientation: Images can be captured in all three positions – and will appear with the correct orientation in the LightPhase application.*

### **IR filter on the CCD**

The IR filter (Phase One TG1 Infrared cut-off filter) is placed on top of the CCD.

The filter may not be removed for several reasons.

- The focusing of the LightPhase will be damaged.
- It is only possible to remount the filter without dust in between the filter and the CCD if you have access to special clean room facilities.
- The Phase One Product Warranty is terminated.

# 3 Getting ready for taking pictures

## **Mounting the focusing screen**

The image area of the CONTAX 645 is 41.5mm x 56mm. The image area of the LightPhase C645 is 24mm x 36mm. A dedicated LightPhase C645 focusing screen is provided. This focusing screen has to be mounted instead of the original focusing screen. Refer to the CONTAX 645 Instruction Manual "Replacing Focusing Screen" before the focusing screen is mounted.





## **Mounting the LightPhase C645 to the CONTAX 645**

The C645 is fully integrated with the camera house and acts as a true part of the whole camera system.

When attaching the LightPhase C645 to the camera house it is important to ensure that the bottom part of the LightPhase C645 back is pressed well into the locking mechanism before the upper locking mechanism is pressed together.

To avoid that the LightPhase C645 back is released by mistake from the camera house, the enclosed screwdriver can be used to lock the LightPhase C645 locking mechanism.



*Step 1*

*Step 2*

*Step 3*

## Use of flash sync cable



*No cables are required between the LightPhase C645 and the CONTAX 645. Flash sync cable must be connected to the CONTAX 645 camera house.*



*The flash sync cable may NOT be connected to the LightPhase C645*

### **Operating the camera from the host computer**

The supplied release cable must be connected between the "M" connector on the LightPhase C645 and the mini-jack connector on the CONTAX camera house.



### **Use of sync cable for bulb exposures**

When using bulb exposure, a sync cable must be connected between the C connector on the LightPhase™ and the flash connector on the CONTAX camera house.



# 4 Maintenance

## **Cleaning the IR filter**

When the LightPhase C645 camera back is not attached to a CONTAX camera, the camera back shall be protected with the protection plate. Still dust particles can stick to the IR filter. This will degrade the image quality.

The cleaning procedure for cleaning the IR filter is similar to the procedure for cleaning the CCD, as it is described in section 10 in the "LightPhase Users Guide".

## **Cleaning between the CCD and the IR filter**

*Do not try to clean between the CCD and the IR filter!*

The mounting of the IR filter is done at the factory in a high-class clean room. This process is a very specialized process that assures an extremely high quality of the glass surfaces of the CCD and the IR filter. The screws for locking the IR filter are sealed. If the seal is broken, Phase One will not guarantee for any particles between the CCD and the IR filter.

# 5 Current limitations

## **TTL flash**

Using TTL flash with the CONTAX 645 camera and the LightPhase™ back, will result in 3 f-stop over exposure. When using TTL flash, the exposure compensation on the flash unit must therefore be set to  $-3$  f stops.



# 6 Technical data

Single shoot camera back for CONTAX 645

Electrical computer interface between LightPhase C645 and CONTAX 645

Full support of dedicated lenses at all shutter speeds (1/4000 - 32 sec.)

Electronic protections against double exposures

Orientation sensor for correct display of landscape and portrait images

Resolution:	3056 x 2032 pixels
Image modes	RGB, Grey or CMYK
Pixel depth:	3x8 or 3x16 for RGB 8 or 16 for Grey 4x8 or 4x16 for CMYK
Image area:	24mm x 36mm
Computer connection:	IEEE 1394
Power consumption:	7 Watt
Compatible strobe systems:	See Section "Technical Data" in the LightPhase Users Guide

