



## Wireless Remote Control 2 (WRC-2) Instruction Manual

Rev. 1.1, February 2008

Technical data are subject to change without notice.

Ident-No. K5.67651.0

ALL ARTWORK, PICTURES AND TEXTS ARE COVERED BY OUR COPYRIGHT.  
THEY MUST NOT BE COPIED FOR REPRODUCTION (E.G. ON CD-ROM DISKS OR INTERNET-SITES) OR USED IN THEIR ENTIRE FORM OR IN EXCERPTS WITHOUT OUR PREVIOUS WRITTEN AGREEMENT.

IF YOU ARE DOWNLOADING PDF-FILES FROM OUR INTERNET HOME-PAGE FOR YOUR PERSONAL USE, MAKE SURE TO CHECK FOR UPDATED VERSIONS.  
WE CANNOT TAKE ANY LIABILITY WHATSOEVER FOR DOWNLOADED FILES, AS TECHNICAL DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE.



# Order Numbers



**Wireless Remote Control WRC-2**  
K0.60042.0  
includes:  
WRC-2 Main Unit, K2.65128.0  
Control Knob Unit, K2.65129.0



**Wireless Battery Unit**  
**WBU-3**, K2.52238.0  
or  
**WBU-4**, K2.65001.0  
**Wireless Accu Charger**  
**WAC-3**, K2.52266.0



**Wireless Main Unit**  
**WMU-3**, K2.52240.0  
**Antenna**, 05.20112.0



**Wireless Expansion Bracket**  
**WEB-3**, K2.52241.0



**Wireless Focus Unit**  
**WFU-3**, K2.52268.0



**RCU Cable, short**  
(1,5m, 5ft)  
**KC-39**, K4.47329.0



**RCU Cable, long**  
(20m, 60ft)  
**KC-41**, K2.47350.0



**Cable KC-115**  
(1m, 3,3ft)  
K2.65139.0



**LCS Cable**  
**LC-Z1 (3,5m/11ft)** K4.41395.0  
**LC-Z2 (7m/23ft)** K2.41396.0


**LCS Cable (coiled)**  
**LC-M1 (1m/3ft)** K4.41397.0  
**LC-M2 (2m/6ft)** K2.43871.0


# 1. Contents

<b>2. Safety Instructions</b> .....	6	<b>8. Functions</b> .....	22
2.1 Specific Safety Instructions.....	7	8.1 Introduction.....	22
<b>3. Disclaimer</b> .....	8	8.2 Basic WRC-2 Menus.....	22
<b>4. Introduction</b> .....	10	<b>9. Menu Structure</b> .....	22
<b>5. Setup</b> .....	12	9.1 Introduction.....	23
5.1 WRC-2 in wireless mode.....	12	9.2 Exit and Edit Buttons.....	23
Transmitting.....	12	<b>10. Main Menu</b> .....	24
Receiving.....	12	10.1 Starting a Software Module.....	24
5.2 Mounting the WRC-2 on the WMU-3.....	13	<b>11. WRC-2 Settings Menu</b> .....	25
5.3 - 5.4 Wireless Configurations.....	14	11.1 Adjusting the Backlight Level.....	25
5.10 Wired Configurations.....	16	11.2 Auto Dim Power Safe Function.....	25
5.11 irect connection via the Camera Connector.....	16	11.3 Calibrating the Touchscreen.....	25
5.12 Connection via Wireless Handgrip Attachment....	16	<b>12. Camera Control Menu</b> .....	26
5.13 Conection via Universal Remote Controller.....	17	12.1 Introduction.....	27
<b>6. First Steps</b> .....	20	12.2 Status Window.....	27
6.1 Powering up the Unit.....	20	12.3 Changing Camera Speed.....	28
6.2 Using the Stylus.....	20	12.4 Editing Preset Speeds & Change Run Direction.....	29
<b>7. General Operation and Navigation</b> .....	21	12.5 Changing Camera Mirror Shutter.....	28
7.1 Touchscreen Navigation.....	21	12.6 Editing Preset Camera Shutter Angles.....	31
7.2 Key Navigation.....	21		


<b>12.7 Filmcounter Sub Menu</b> .....	32	<b>14. Ramp Control Menu</b> .....	41
Exposed Film Counter.....	32	14.1 Enabling the Iris Control.....	42
Take Counter.....	32	14.2 Programming a Ramp.....	43
Raw Stock Counter.....	32	14.3 Exposure Compensation.....	44
Screen Time Display.....	32	Compensation via the Mirror Shutter.....	44
Changing Units between Meter and Feet.....	32	Compensation via the Iris.....	44
<b>12.8 Camera Control Options Sub-Menu</b> .....	33	Mixed Compensation via Shutter and Iris.....	44
Camera Direction.....	33	14.4 Exposure Calculation.....	45
Beep Event.....	33	Enable the Exposure Calculation.....	45
Beep Volume.....	33	14.5 Compensation Free Style.....	46
Length Unit.....	33	14.6 Ramp Options.....	47
Time Code.....	33	Change Ramp Direction.....	47
<b>12.9 Time Code Sub-Menu</b> .....	35	Save and Load a Ramp.....	47
Time Code on/off.....	35	14.7 Ramp Example.....	48
Time Code Sensitivity (TCS).....	35	<b>15. External Display Menu</b> .....	49
Time Code and User Bits.....	35	<b>16. Appendix</b> .....	50
Status Field.....	35	16.1 Updating the Unit.....	50
<b>13. Lens Manager Menu</b> .....	36	16.2 Service Menu.....	51
13.1 Lens Manager Menu Functions.....	36	16.3 Cleaning .....	51
13.2 Administer Iris Tables.....	37	16.3 Troubleshooting.....	52
13.3 Creating new Iris Tables using the Wizard.....	38	16.4 Technical Data.....	54
		16.5 Declaration of Conformity.....	54
		16.6 ARRI Service.....	55
		<b>17. Index</b> .....	56


## 2. Safety Instructions

 Always follow these instructions to ensure against injury to yourself and damage to the system or other objects.


 This safety information is in addition to the product specific operating instructions in general and must be strictly observed for safety reasons.


### Warning signs


 Possible risk of injury or damage to equipment


 This symbol indicates the risk of electric shock or fire danger that could result in injury or equipment damage.


### General Safety Instructions


 Read and understand all safety and operating instructions before you operate or install the system.


 Retain all safety and operating instructions for future reference


 Heed all warnings on the system and in the safety and operating instructions before you operate or install the system. Follow all installation and operating instructions.


 Do not use accessories or attachments that are not recommended by ARRI, as they may cause hazards and invalidate the warranty.


 Do not attempt to repair any part of the system. Repairs must only be carried out by authorized ARRI Service Centers.


 Do not remove any safety measures of the system.


 Do not operate the system in high humidity areas or expose it to water or moisture.


 Do not place the system on an unstable trolley, stand, tripod, bracket or table. The system may fall, causing serious personal injury and damage to the system or other objects.

 Operate the system using only the type of power source indicated in the manual. Unplug the power or connection cable(s) by gripping the plug, not the cable.


 Never insert objects of any kind into any part of the system through openings, as the object may touch dangerous voltage points or short out parts. This could cause fire or electrical shock.


 Unplug the system from the power outlet before opening any part of the system or before making any changes to the system, especially the attaching or removing of cables.

 Do not use solvents to clean the display screen. Clean the display surface only with a soft, lint.-free cloth or paper with water only. Wipe the screen carefully. Do not spray liquid directly on the screen. You may also use a mild glass cleaner that contains no alcohol or ammonia.

 Do not loosen screws that are painted over.

## Specific safety instructions

 By using the WRC-2 you are able to run a connected camera or other device. Therefore make sure to follow all applicable safety instructions for the connected devices.

 Any violation of these safety instructions or the nonobservance of personal care could cause serious injuries (including death) and damage to the system or other objects.

### 3. Disclaimer

Before using the products described in this manual be sure to read and understand all respective instructions. The Wireless Remote Control 2, WRC-2, is only available for commercial customers.

The customer grants by utilization, that the WRC-2 or other components of the system are only deployed for commercial use.

Otherwise the customer has the obligation to contact ARRI preceding the utilization.

While ARRI endeavours to enhance the quality, reliability and safety of their products, customers agree and acknowledge that the possibility of defects thereof cannot be eliminated entirely.

To minimize risks of damage to property or injury (including death) to persons arising from defects in the products, customers must incorporate sufficient safety measures in their work with the system and have to heed the statuted canonic use.

No part of this document may be copied or reproduced in any form or by any means without written consent of ARRI. ARRI assumes no responsibility for any errors that may appear in this document.

The informations is subject to change without notice. For product specification changes since this manual was published, refer to the latest publications of ARRI data sheets or data books, etc., for the most up-to-date specifications.

Not all products and/or types are available in every country. Please check with an ARRI sales representative for availability and additional information.



Neither ARRI nor its subsidiaries assume any liability for infringement of patents, copyrights or other intellectual property rights of third parties by or arising from the use of ARRI products or any other liability arising from the use of such products.

No license, express, implied or otherwise, is granted under any patents, copyrights or other intellectual property rights of ARRI or others.

ARRI or its subsidiaries expressly exclude any liability, warranty, demand or other obligation for any claim, representation, or cause, or action, or whatsoever, express or implied, whether in contract or tort, including negligence, or incorporated in terms and conditions, whether by statute, law or otherwise.

In no event shall ARRI or its subsidiaries be liable for or have a remedy for recovery of any special, direct, indirect, incidental, or consequential damages, including but not limited to lost profits, lost savings, lost revenues or economic loss of any kind or for any claim by third party, downtime, good-will,

damage to or replacement of equipment or property, any costs or recovering of any material or goods associated with the assembly or use of our products, or any other damages or injury of persons and so on or under any other legal theory.

In the case one or all of the forgoing clauses are not allowed by applicable law, the fullest extent permissible clauses by applicable law are validated.

ARRI is a registered trademark of Arnold & Richter Cine Technik GmbH & Co Betriebs KG.

Note:

This product and the accessories recommended by the manufacturer fulfil the specifications of the EU-Guidelines 89/336/EWG.

## 4. Introduction

### General Description:

The WRC-2 is a modern and user friendly remote-control and program unit for all new-generation ARRIFLEX and ARRICAM cameras. It combines the functionality of the RCU-1 and WRC-1. Beyond that, the WRC-2 provides unique new features and due to the touchscreen user interface, remote controlling a camera was never faster and easier.

The range of functions is automatically adapted to the attached camera. Since the functionality of the WRC-2 is software based and therefore expandable, we are looking on the most flexible Remote Control Unit, ARRI has ever provided.

### Setups:

In the standard version, the WRC-2 enables the user to remotely control

- the camera speed
- the shutter angle of the mirror shutter

providing a wide range of compensation options for constant exposure via an easy and intuitive to use software.

### Automatic exposure Calculation:

Furthermore the WRC-2 automatically calculates the correct exposure value for given ramps (speed, iris or shutter) based on the measurements made by the DOP on the set. This is a new and unique feature, only available through the WRC-2. The complete ramp data can now easily be entered in the clear arranged Ramp Menu, guiding the user through the sometimes very complex process of programming a ramp. Thus, the WRC-2 is a very powerful tool that saves time and provides a new level of exposure-safety and precision.

### Simulator Software:

To make yourself familiar with the unit before using it on the filmset, we offer a WRC-2 simulator software, that can be downloaded via our website.

### Upload new Software Modules:

New released software modules or software updates can be uploaded just by connecting an USB stick to the WRC-2 mini-USB port.

### Ramp Compensation with and without LDS Lenses:

The WRC-2 can automatically compensate speed and iris ramps. In order to compensate the ramps by the iris, a CLM-1 or CLM-2 motor has to be attached to the camera and the mounted lens has to be selected in the WRC-2. This is done automatically when using LDS lenses (Master Prime or LDS Ultra Prime). For other lenses an Iris Table can be easily created following a few steps in the Lens Manager. The lens can then be stored in the WRC-2 internal memory.

### Modular System

The WRC-2 works with the ARRI Wireless Remote Control system and attaches to the Wireless Main Unit WMU-2 and WMU-3.

It can be wired to an ARRIFLEX or ARRICAM either directly or via a Wireless Handgrip Attachmend WHA-2 or WHA-3 using a standard LCS cable.

The knob module can be removed to keep the unit as small as possible, if desired.



## 5. Setup

### 5.1 WRC-2 in wireless mode

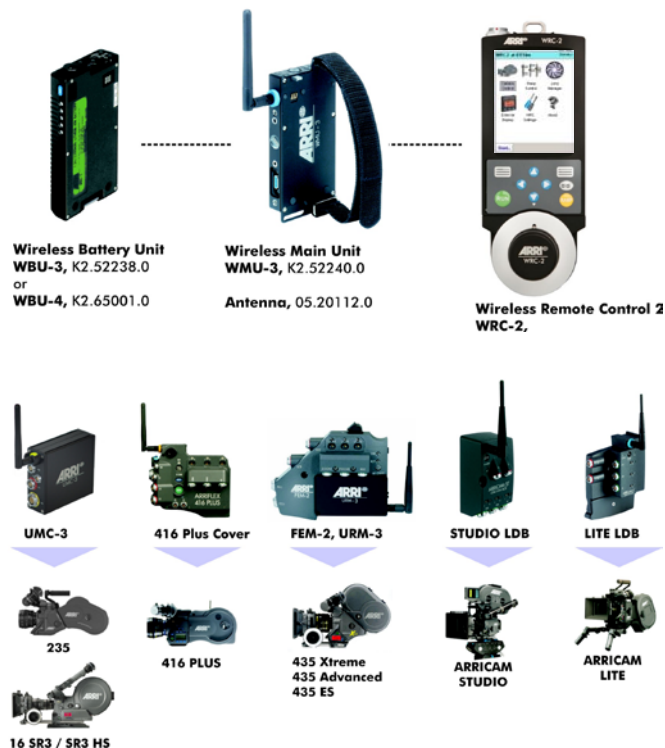
#### Transmitting:

In order to be able to use the WRC-2 in wireless mode, it must be mounted on a Wireless Main Unit (WMU-2 or WMU-3) as a transmitter. The Main Unit supplies the WRC-2 with power and establishes the radio link with the camera.

Up to three WMU can be used simultaneously, therefore the WRC-2 can be controlled by one operator while e.g. the focus unit can be controlled by another operator. Please refer to the LCS instruction manual for further details.

#### Receiving:

On the camera side, a receiver is needed. When using ARRICAM cameras, the receiver is built in the Lens Data Box. When using 435, the receiver is the Universal Radio Module (URM-3). This device has to be mounted to the Function Expansion Module (FEM-1 or FEM-2) When using other cameras, the Universal Radio Module (URM-3) can be used as a receiver.



## 5.2 Mounting the WRC-2 on the WMU-3 or WMU-2

- Switch off the Wireless Main Unit WMU by pressing the ON/OFF button.
- With the wide black pin pointing forward, insert the WRC-2 into the free space on the WMU. Then press the WRC-2 onto the WMU until the module audibly snaps into position.
- Select the same radio channel on the WMU and on the receiver (e.g. Lens Data Box)

**Note:**

The WRC-2 can not be mounted on a WMU-3 together with other modules without using the Wireless Expansion Bracket (WEB-3).

**Note:**

Do not separate the hand control units from one another when they are switched on, as this can result in randomly set lens limits.

## 5.3 Wireless Configurations

### 5.4 WRC-2 & ARRICAM Studio and Lite

On the ARRICAM Lite and Studio a Lens Data Box (LDB) has to be mounted in order to be remotely controlled by the WRC-2 via the Wireless Main Unit WMU-3 or WMU-2.

Functions:

- Speed, Shutter, Cam Info, LDS Info
- Ramp Control: Enter Speed and Shutter Compensation by Iris\* and/or Shutter

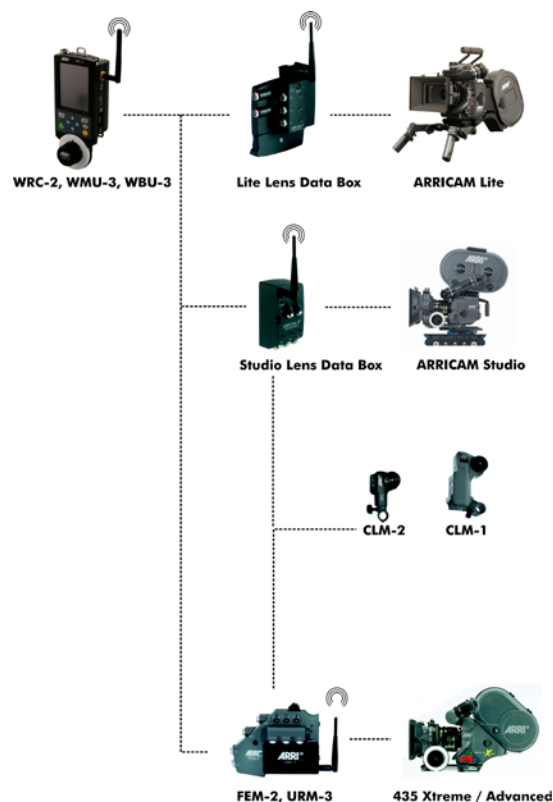
### 5.5 WRC-2 & ARRIFLEX 435 Xtreme / Advanced

On the FEM-2 the Universal Remote Controller URM-3 has to be mounted.

Functions:

- Speed, Shutter, Cam Info, LDS Info
- Ramp Control: Enter Speed and Shutter Compensation by Iris\* and/or Shutter

\*) if CLM-2 or CLM-1 motor is connected to the Lens Data Box (LDB)



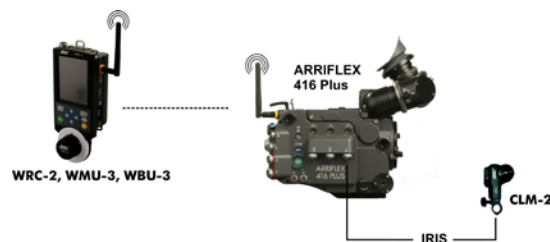
## 5.6 WRC-2 & ARRIFLEX 416

On the ARRIFLEX 416 the 416 PLUS Electronics Side Cover has to be mounted (included in 416 PLUS).

Functions:

- Speed, Cam Info
- Ramps: Speed

Compensation by Iris if CLM-2 or CLM-1 motor is connected to the Electronics Side Cover.



## 5.7 WRC-2 & other ARRI Cameras

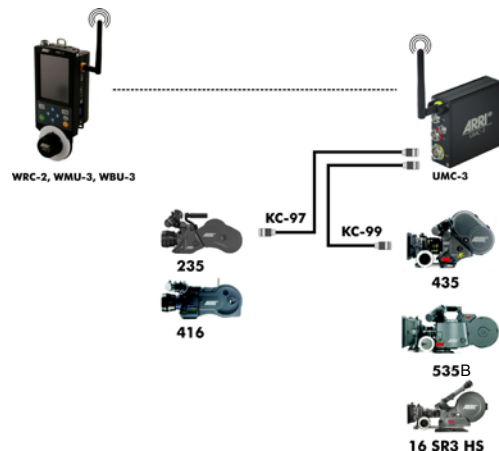
In order to control cameras without a built in receiver (e.g. Lens Data Box on ARRICAM) the Universal Remote Controller has to be connected to a camera with the cable KC-97 for the 235 and 416 or with the cable KC-99 for 435, 535B and 16SR3 or 16SR3 HS.

Functions:

- Speed, Iris\*, Shutter\*\*
- Ramp Control: Enter: Speed, Iris\*, Shutter\*\*

\*) if CLM-2 or CLM-1 motor is connected to the Lens Data Box (LDB)

\*\*) if camera has an electronic adjustable mirror shutter



## 5.10 Wired Configurations

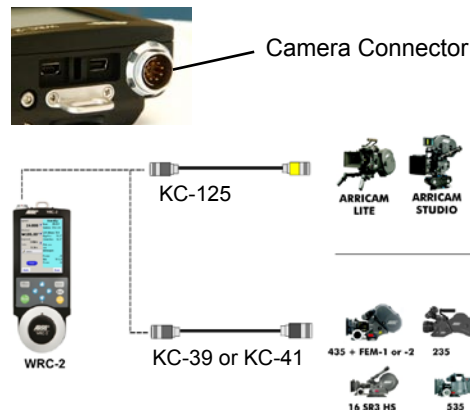
The WRC-2 can be wired to a camera or to a Universal Motor Controller UMC-3 in three different ways:

### 5.11 Direct connection via the Camera Connector

to ARRICAM Studio and Lite: **KC-125**

to ARRIFLEX 235, 416, 435, 535, SR3 (HS):

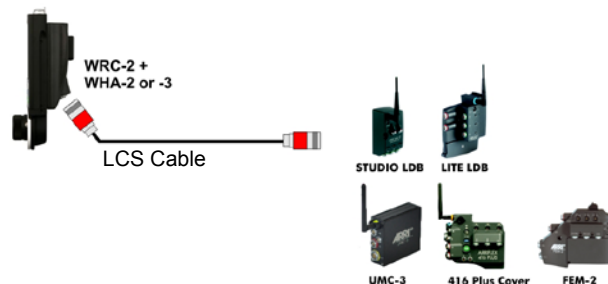
**KC-39** (1,5m/5ft) or **KC-41** (20m/60ft):



### 5.12 Connection via the Wireless Handgrip Attachment WHA-2 or WHA-3

To connect the WRC-2 to the LCS Bus the Wireless Handgrip Attachment WHA-2 or WHA-3 has to be mounted on the back of the WRC-2.

\*LCS Bus = Lens Control System interface. ARRI Cameras and accessories can be connected. The bus can be recognized by the red sockets and red plugs. See next page for a list of LCS cables.





### 5.13 Connection via the

#### Universal Remote Controller URM-3

The UMC-3 can be connected to the WRC-2 either directly via the WRC-2 Cam Cable or via the mounted Wireless Handgrip Attachment WHA-2 or WHA-3 and an Lens Control Cable (e.g. LC-Z1/Z2 or LC-M1/M2). Both cables are plugged into the „LCS“ socket of the UMC-3.

The cameras can then be wired to the UMC-3 („CAM“ socket) via two different cables:

**KC-97:** to ARRIFLEX 235 and 416

**KC-99:** to ARRIFLEX 435, 535, 16SR 3 (HS)

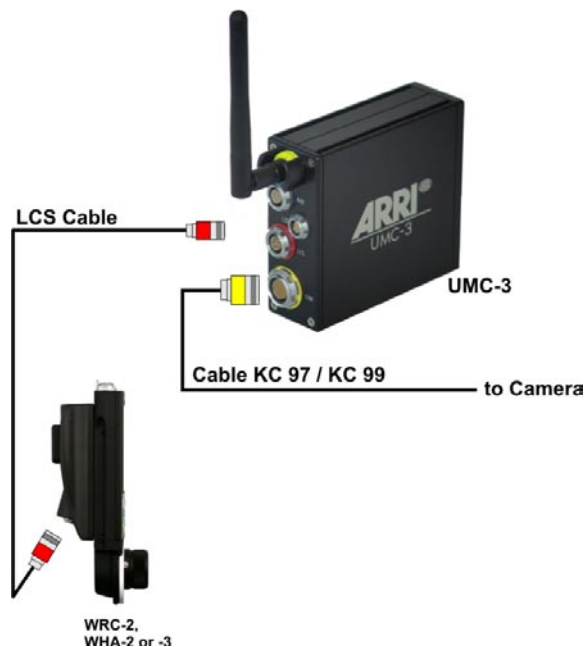
#### LCS Cables

LC-Z1 (3,5m/11ft)      K4.41395.0

LC-Z2 (7m/23ft)      K2.41396.0

LC-M1 (1m/3ft)      K4.41397.0

LC-M2 (2m/6ft)      K2.43871.0



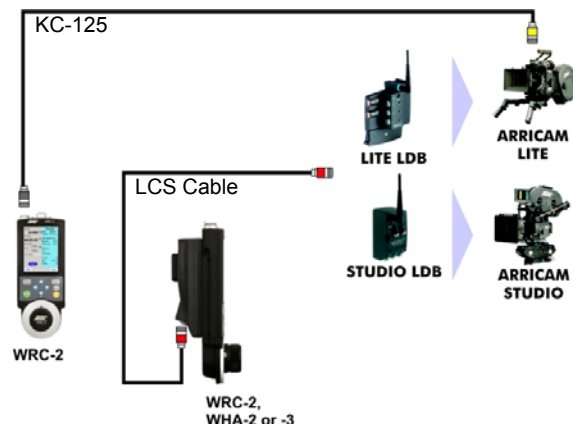
## 5.14 WRC-2 & ARRICAM Studio and Lite

Possible Connections:

- 1.) Via KC 125 direct to ARRICAM Studio or Lite.
- 2.) With WHA-2/3 attached to WRC-2 via LCS cables. (A Lens Data Box has to be mounted)

Functions:

- Speed, Shutter, Cam Info, LDS Info
- Ramp Control: Enter Speed and Shutter Compensation by Iris\* and/or Shutter



## 5.15 WRC-2 & ARRIFLEX 435 Xtreme / Advanced

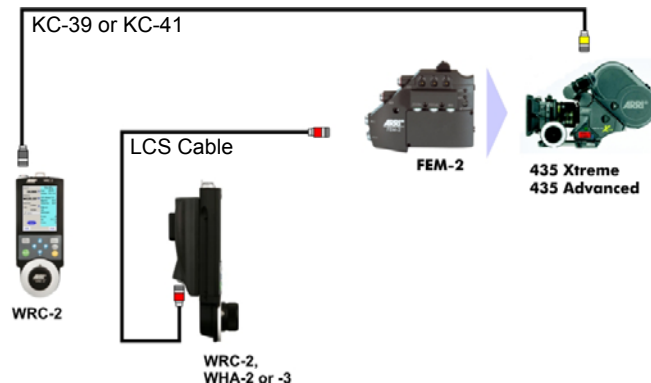
Possible Connections:

- 1.) Via KC-39 or -41 direct to 435 Xtreme/Adv.  
**KC-39** (1,5m/5ft) or **KC-41** (20m/60ft)
- 2.) With WHA-2/3 attached to WRC-2 via LCS cables. (FEM-2 has to be mounted)

Functions:

- Speed, Shutter, Cam Info, LDS Info
- Ramp Control: Enter Speed and Shutter Compensation by Iris\* and/or Shutter

\*) if CLM-2 or CLM-1 motor is connected to the Lens Data Box (LDB)



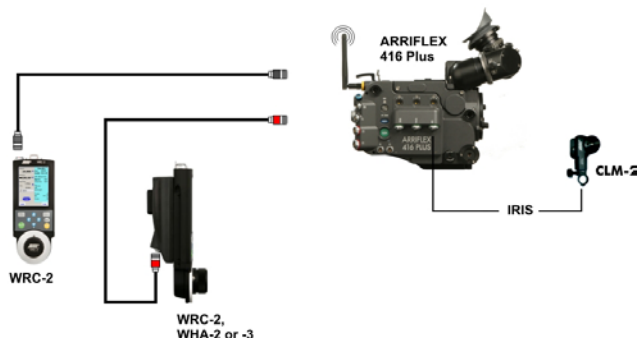
### 5.16 WRC-2 & ARRIFLEX 416

Possible Connections:

- 1.) Via KC-39 or -41 direct to 416.  
KC-39 = 1,5m/5ft, KC-41 = 20m/60ft
- 2.) With WHA-2/3 attached to WRC-2 via LCS cables. (416 Plus only)

Functions:

- Speed, Cam Info
- Ramps: Speed, Iris (needs CLM-1 or -2)



### 5.17 WRC-2 & other ARRI Cameras

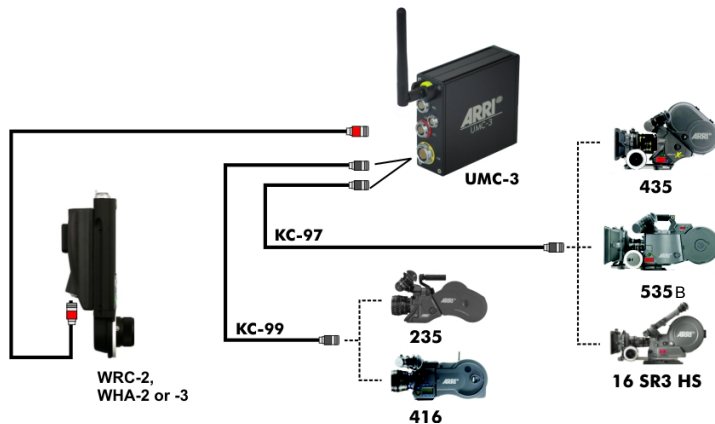
In order to control cameras without a built-in receiver (e.g. Lens Data Box on ARRICAM) the Universal Remote Controller has to be connected to a camera with the cable KC-97 for the 235 and 416 or with the cable KC-99 for 435, 535B and 16SR3 or 16SR3 HS.

Functions:

- Speed, Iris\*, Shutter\*\*
- Ramp Control: Enter Speed, Iris\*, Shutter\*\*

\*) if CLM-2 or CLM-1 motor is connected to the Lens Data Box (LDB)

\*\*) if camera has an electronic adjustable mirror shutter



## 6. First Steps:

### 6.1 Powering Up The Unit

After connecting the WRC-2 to a camera the WRC2 will power up automatically and the last used menu will be displayed.

To go back from any menu to the Main Menu, click „Exit“ or „Cancel“ until the Main Menu appears.

### 6.2 Using the Stylus

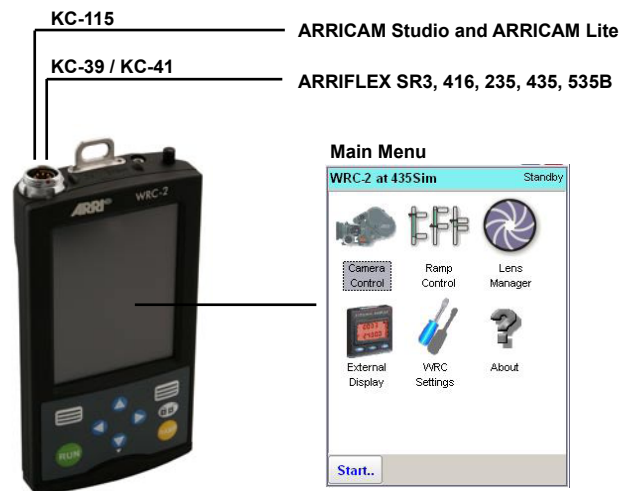
Just as you use a mouse pointer to click elements on a computer screen, you can use the stylus to tap elements on your WRC-2's touch-sensitive screen. Tapping is the basic action used to execute tasks on your WRC-2. Alternatively you can use your finger. However, in this manual both actions are described as „click“.

#### Note:



Do not use a pen, pencil or any other sharp object to click on the screen.

We recommend to use a screen protector.



Stylus

## 7. General Operation and Navigation

The operating software can be controlled in two ways.

### 7.1 Touchscreen Navigation

1.) Direct control via the „Touch screen“. Simply click on the icons, sliders or other menu buttons with the on-board Stylus or your finger. To release the Stylus, press the „Stylus Release Button“ on the right side of the WRC-2.

### 7.2 Key Navigation

2.) Navigate through the menus with the „Arrow Buttons“ and use the „Function Keys“ to activate the buttons copied in the software. For example: Instead of clicking on the „Edit“ button on the Touch Screen, just press the left „Function Key“.

Use the left and right Arrow Buttons to jump from item to item, use the up and down Arrow Buttons to change values or to operate sliders.

### Lock/Unlock

To lock/unlock the keypad, press the Lock/Unlock Key for three seconds.



## 8. Functions

### 8.1 Introduction

The WRC-2 not only replaces camera control accessories like WRC-1, RCU-1 or the External Display EXD-1. By using special software modules for each task, it provides many other new features and possibilities. The Software Modules are called „Menus“ and can be started from the „Main Menu“ in the WRC-2.

Future software releases and menus can be uploaded to by connecting an USB memory stick to the WRC-2.

Depending on the number of Software Menus you have uploaded, the Main Menu will vary. For information about future releases, please refer to the manual updates that will be shipped with each Software.

### 8.1 The Basic WRC-2 contains the following Menus:

#### Camera Control

Contains all camera related controls:

- Edit camera speed and shutter.
- Set filmcounters and other options

- Edit time code settings.
- Edit camera speed/direction and shutter.

#### Ramp Control

- Enter Speed or Iris Ramps.
- Set Compensation (Iris, Shutter or Mix).
- Calculate the actual exposure value .
- Calculate Screen Time.

#### Lens Manager

- Edit, save and load Lens Tables
- Calibrate lenses

#### External Display

- Provides the Camera Menu on the WRC-2 display

#### WRC-2 Settings

- Set the backlight level.
- Calibrate the touchscreen.
- Perform software updates.

## 9. Menu Structure

### 9.1 Introduction

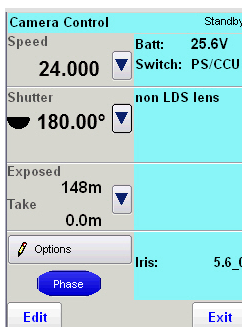
From the Main Menu all other applications can be launched by clicking on the corresponding icons.

Depending on the amount of functions, some Menus can contain Sub-Menus.

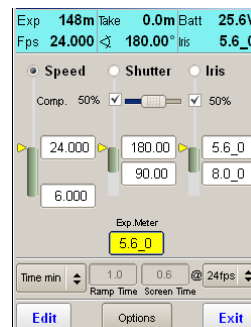
To navigate back to the Main Menu, click on „Exit“ or „Cancel“ in the Menus or Sub-Menus until the Main Menu is displayed again.

### „Exit“ and „Edit“ Buttons

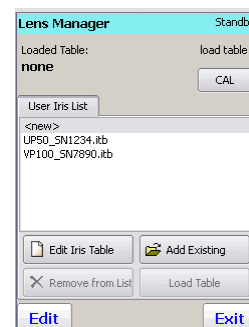
- „Exit“ will save your changes and inputs and jump back to the preceding menu. Click „Edit“ to change the values.
- „Cancel“ will not save your inputs but jump back to the preceding menu.



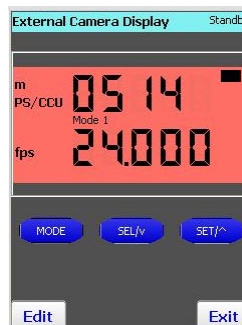
CAMERA CONTROL  
CHAPTER 12



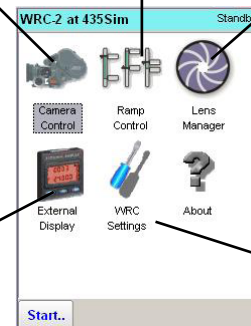
RAMP CONTROL  
CHAPTER 14



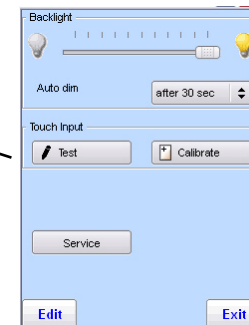
LENSMANAGER  
CHAPTER 13



EXTERNAL DISPLAY  
CHAPTER 15



MAIN MENU  
CHAPTER 10



WRC SETTINGS  
CHAPTER 11

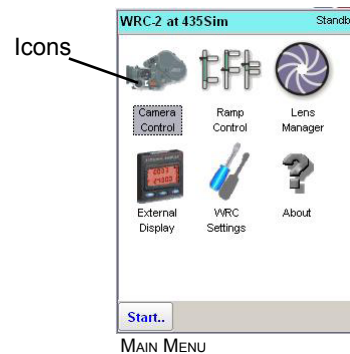
## 10. Main Menu

### 10.1 Starting a Software Module

In the „Main Menu“ all available software modules represented by a corresponding icon are displayed. If you have installed further applications, their icons may not be visible without using the slider on the right side. Alternatively you can always use the arrow keys to move from one icon to another. Start the application by using the left „Function Key“ or just click on the icon with the stylus or your finger.

To navigate back to the „Main Menu“ from anywhere in other software modules, just click „Cancel“ or „Exit“ until the „Main Menu“ appears.

**Note:** The WRC-2 will always power up with the last menu that was used in the preceding session.





## 11. WRC-2 Settings Menu

In the Settings Menu the display backlight level and Auto Dim durations can be set. Also the display can be calibrated to assure a precise control with the stylus.

### 11.1 Adjusting the backlight level:

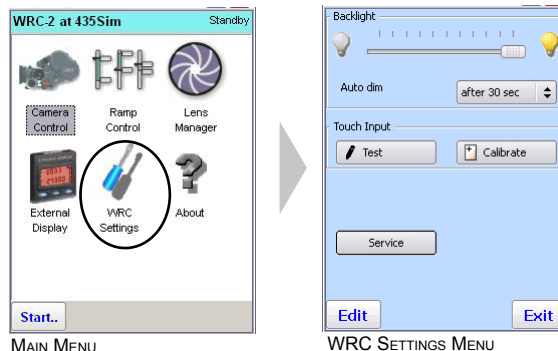
- In the Main Menu, click „WRC Settings“
- Use slider to adjust the backlight level.

### 11.2 Auto Dim (Backlight level) Function

- Select a time from the Auto Dim Listbox . The screen will darken to the lowest possible setting after that time to save battery energy. As soon as you touch either the display or press any key, the brightness of the display will jump back to the level previously set on the slider.

### 11.3 Calibrating the touchscreen:

- In the WRC Settings Menu, click „Calibrate“
- Click on the cross-symbols precisely
- After calibration click on „Test“. Draw some lines on the screen to check the precision of the stylus.
- Click „Exit“ to go back to the Main Menu.



### 11.4 Service Menu / Updating the Unit

- In the WRC Settings Menu, click „Service“
- Refer to Appendix Chapter 15.1 Service and Maintenance

## 12. Camera Control Menu

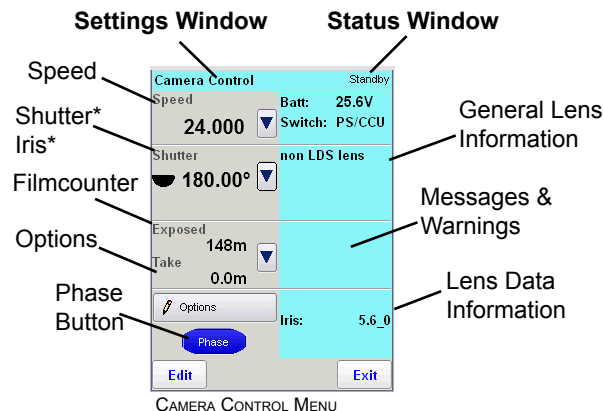
### 12.1 Introduction

This menu represents a complete camera remote control and status monitor. On the left side in the „Settings Window“ you find editable values like speed, shutter and filmcounters. Also other camera related options can be set and edited via the „Options“ button.

The „Status Window“ is on the right side. It offers an overview about the actual camera status and can display error or warning messages in detailed text form.

When working with the Lens Data System, the iris values will be displayed in the Lens Data Information field.

When using a Non-LDS-Lens an Iris Table can be created and loaded in the Lens Manager in order to display the actual iris values in the Status Window.



## 12.2 Status Window

On the right side of the screen, the actual camera status is displayed. The color of the screen can alter:

cyan = standby  
green = camera running  
orange = inching  
red = warning or not ready

**The following values and settings are displayed:**

### **Battery Voltage**

Displays the Voltage value.

### **PS/CCU**

Displays the camera setting PS/CCU or NORM. In order to be able to change the speed settings, the camera has to be set to PS/CCU.

When the camera is switched to NORM mode, all other options are available (shutter, iris etc.).

### **LDS: e.g. 40mm T1.9**

In this case, a 40mm LDS Ultra Prime is connected to the camera. The widest f-stop is T1.9

Note: This f-stop value is not the actual f-stop, set on the lens.

### **Message & Warnings Field**

Error Messages will be displayed here.

### **Iris**

The Iris value, that is actually set on the lens.

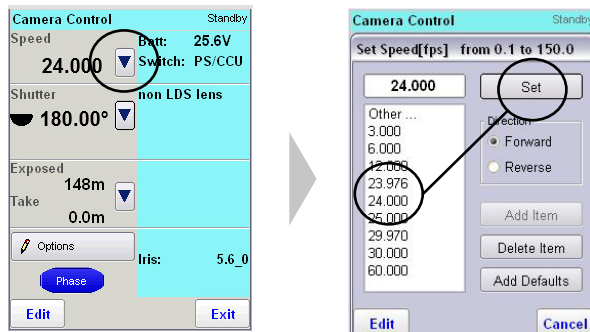
## 12.3 Changing Camera Speed

In the camera control menu, the camera speed can be edited. There are two ways to edit the camera speed. The fastest is to choose from preset values. But also specific values can be entered.

### Choose from a preset camera speed:

- In the Camera Control Menu, click on the arrow button in the „Speed“ section, the Set Speed(fps) Menu will appear.
- Click on the desired value in the speed list, the value will be displayed in the small window on the top.
- Confirm the value by clicking on „Set“.

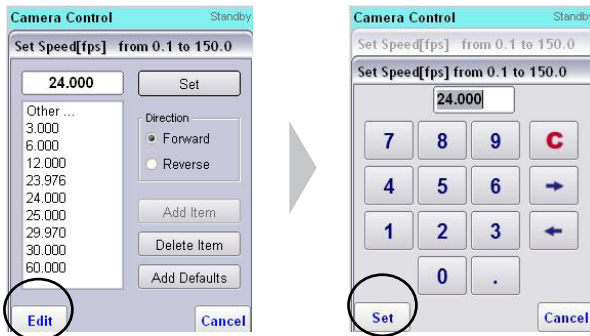
### To choose from a preset camera speed



### To edit a specific camera speed

### Enter a user defined camera speed

- In the Camera Control Menu, click on the arrow button in the Speed section.
- In the Set Speed(fps) Menu, click on „Edit“.
- Enter the desired value. Use the arrow buttons to navigate or „C“ to clear the input.
- Click „Set“ to set the new camera speed.



## 12.4 Editing Preset Speeds & Change Camera Direction

### Delete items from the preset list:

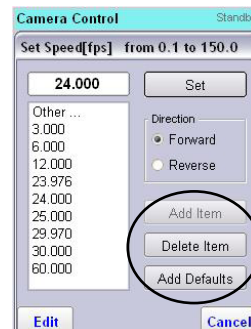
- In the Set Speed Menu, click on value you want to delete.
- Click on „Delete Item“

### Add a user defined speed value:

- In the Set Speed Menu, click on „Edit“.
- Enter your speed value and click on „Set“.
- Click on „Add Item“, the new value will appear in the list.

### Add all default speed values

- In the Set Speed Menu, click on „Add Defaults“.
- All preset values will be added to the list.



### Change Camera Direction

For forward run, check the „Forward“ button.

For reverse run, check the „Reverse“ button.

You will have to confirm the change.

## 12.5 Changing Camera Mirror Shutter:

From the camera control screen, the camera shutter angle can be edited. There are two ways to edit the shutter angle. The fastest is to choose from preset values. But also specific values can be entered.

**Note:** Before changing the mirror shutter values make sure the locking mechanism is set to the **LOOSE (unlocked)** position. Please refer to the corresponding camera manual.

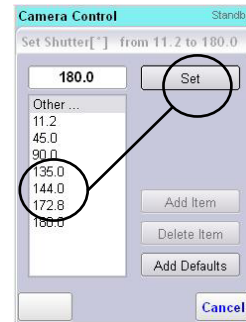
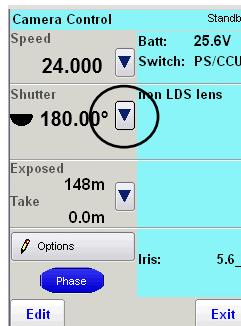
### Choose from a preset camera shutter angle:

- In the Camera Control Menu, click on the arrow button in the „Shutter“ section.
- The Set Shutter Menu will appear.
- Click on the desired value, the value will be displayed in the small window on the top.
- Confirm the value by clicking on „Set“.

### Edit a specific camera shutter angle

- In the Camera Control Menu, click on the arrow button in the Shutter section.
- In the Set Shutter Menu, click on „Edit“.
- Enter the desired value. Use the arrow buttons to navigate or „C“ to clear the input.
- Click „Set“ to set the new camera shutter angle.

To choose from a preset camera speed



To edit a specific camera speed



## 12.6 Editing Preset Camera Shutter Angles

### Delete items from the preset list:

- In the Set Shutter Menu, click on value you want to delete.
- Click on „Delete Item“

### Add a user defined shutter angle value:

- In the Set Shutter Menu, click on „Edit“.
- Enter your shutter angle value and click on „Set“.
- Click on „Add Item“, the new value will appear in the list.

### Add all default camera shutter values

- In the Set Shutter Menu, click on „Add Defaults“.
- All preset values will be added to the list.



## 12.7 Filmcounter Sub-Menu:

The WRC-2 provides three film counters and calculates the corresponding screen time.

### Exposed Film Counter:

Displays the total amount of exposed film.  
Click „Reset“ to set counter to zero.

### Take Counter

Counts only the take length and resets itself to zero after running the camera.

### Raw Stock Counter

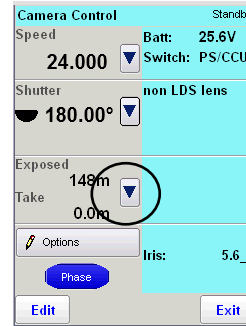
Will display the raw stock quantity that was preset on the camera (ARRIFLEX 416) or via the magazine (ARRICAM)

### Screen Time Display

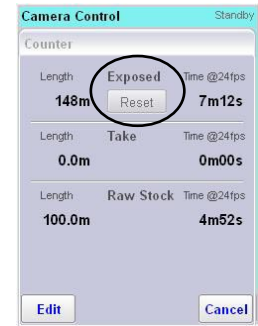
Calculates the screen time at 24 fps. The screen time is the time needed for the projection of the shot with 24fps, regardless of the camera speed.

### Changing the unit of measurement (meter/feet)

Please refer to the next chapter: Camera Control Options



CAMERA CONTROL MENU



OPTIONS SUB-MENU



## 12.8 Camera Control Options Sub-Menu

To enter the Options Menu click „Options“ in the Camera Control Menu

### Camera Direction

Enables the change between forward and reverse run

### Beep Event

Defines when the beep signal should occur.

### Beep Volume

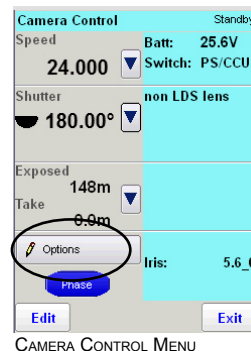
Sets the volume of the beep signal.

### Length Unit


Sets the general length unit to meter or feet.

### Time Code

Refer to the Chapter „Time Code Sub-Menu“



## 12.9 Time Code Sub-Menu

 Since the WRC-2 only remote controls the time code settings of a particular ARRI camera, please refer to the individual camera manual for detailed information about time code recording.

### To enter the Time Code Sub-Menu:

- In the Camera Control Menu click „Options“
- In the „Options Sub-Menu“ click „Time Code“

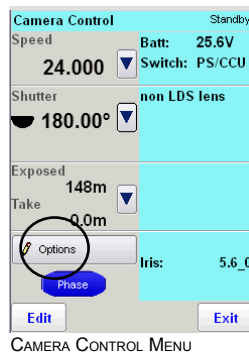
### Time Code on/off

Enables time code recording.  
(Only if camera and magazine allow TC exposure)

### TCS (Time Code Sensitivity)

Displays the TCS settings from the camera or magazine. The TCS value describes the intensity of the time code recording to suit the sensitivity of different film stocks.

For the correct TCS settings please refer to the corresponding camera manual or to the -time code exposure sensitivity-tables provided as PDF files in the download section on [www.arri.com](http://www.arri.com).



### Time / User Bits

Shows and sets the time code clock and user bits to the desired values.

### Warnings

Displays warnings in text form by clicking on the down arrow button on the keypad.



TIME CODE SUB-MENU

## 13. Lens Manager Menu

### 13.1 Lens Manager Menu Functions

In order to compensate ramps via the iris or to display iris values in the Camera Control Menu, one of the following two requirements must be fulfilled:

#### 1.) Using a Lens with Lens Data System:

In this case the iris information will be transferred via a Lens Control System (LCS) Unit to the camera.

LCS Units are e.g.: Lens Data Box, FEM-2, UMC-3 or ARRIFLEX 416 Plus (electronics side cover). Therefore creating an Iris Table is not necessary.

To register and calibrate the lens:

- Connect a lens motor to the LCS Unit.
- Start the calibration process via the „CAL“ Button in the Lens Manager Menu.

Alternatively the CAL button on the WHA-2/3 or WMU-2/3 can be used. If no ramp compensation is intended, the iris ring of the LDS ring can be turned to enable the display of the iris values in the Camera Control Menu.

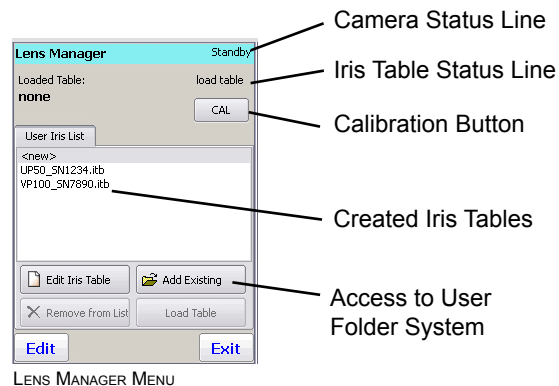
#### 2.) Using a Lens without LDS:

In this case, an Iris Table for the Non-LDS-Lens has to be created manually in the Lens Manager Menu and

loaded into the LDB or Universal Remote Controller (UMC-3). See Chapter 13.2.

All created Iris Tables will be stored permanently in the internal flash-memory of the WRC-2 and simultaneously displayed in the User Iris List for a quick access.

Iris Tables can be removed from the User Iris List for a better clarity, however, they will remain stored in the User Folder System from where they can be added to the User Iris List again.



LENS MANAGER MENU

## **13.2 Administer Iris Tables**

### **Create new Iris Tables**

- Click on the headword „<new>“ in the User Iris List and click „Edit Iris Table“. This will start the Iris Table Wizard. See chapter 13.3 to use the Wizard.

### **Load Iris Tables**

- Click on the Iris Table in the User Iris List.
- Click „Load Table“.
- Insert the lens into the camera lens mount.
- Connect the lens motor to the LDB or UMC-3
- Click on „CAL“ to calibrate the lens.

### **Remove Iris Tables from the User Iris List**

- Click on the Iris Table in the User Iris List.
- Click „Remove“. The Table will disappear from the User Iris List but will remain stored in the User Folder System.

Note:

To keep the lens list as clear as possible, store only the currently and frequently used lenses in the User Iris List.

### **Add Iris Tables from the User Folder System**

- Click on „Add Existing“
- In the User Folder System Menu, click on the desired Iris Table.
- Click on „Open“. The Iris Table will appear in the User Iris List.

### **Erase or Rename Iris Tables**

- Click on „Add Existing“
- In the User Folder System Menu, double-click on the desired Iris Table.
- From the PopUp Menu select „Delete“ or „Rename“

Note: Deleting an Iris Table from the User Folder System **can not be made undone**.

### **Loaded Table Status Line**

Displays the last Iris Table that was uploaded to the LCS Unit. The Iris Table will remain stored in the LCS Unit memory (LDB, FEM-2, UMC-3, 416 Plus etc.) even after powering off the unit.

### **CAL Button**

Click on the „Cal“ button to calibrate the lens.

## 13.3 Creating new Iris Tables with the Iris Table Wizard

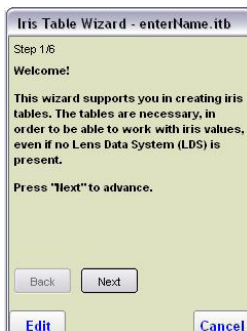
- Click on the headword „<new>“ in the User Iris List and click „Edit Iris Table“. This will start the Iris Table Wizard.

### Step 1

Enter the range of your iris

Some lenses may have a „CLOSE“ position where the iris is shut completely. If so, check „Yes“ in the box.

- Enter open and close iris values of your lens.

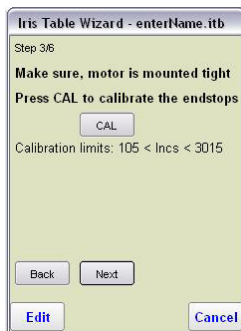


### Step 2

Mount Lens Motor and Calibrate

- Attach a Controlled Lens Motor (CLM-1/2) to the LDB or UMC.
- Start calibration.

Note: Alternatively the buttons on WMU-2/3 or WHA-2/3 can be used.

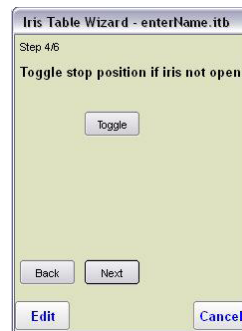


### Step 3

Toggle stop position

Depending on how the lens was mounted the iris may not be in the open position at this stage.

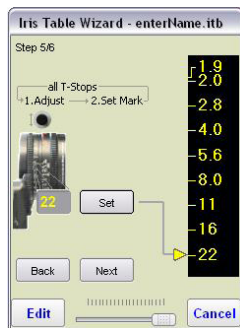
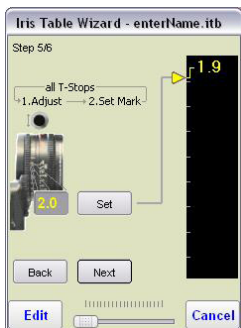
- Click Toggle if the iris is not on the open position.



## Step 4

Define the T-Stop positions

- Make sure the iris is set to the T-Stop marked by the yellow arrow (e.g. f1.9). Use the knob of the WRC-2 to adjust the position. Alternatively you can use the slider on the bottom of the screen.
- Click „Set“ to assign the positions to the iris.
- Go ahead like this until all T-Stops are assigned. If necessary, click on „Back“ or „Next“ to reassign the positions.
- Set at least five T-Stops. When the yellow arrow is at the last position, click next to finish the process.



## Step 5

Name the Iris Table

- Enter an appropriate name for the iris table including lens type, focal length and some last digits of the serial number.  
(e.g. „UP\_50mm\_1234“)
- Click „Finish“
- To activate the Iris Table, go to the Lens Manager Menu and load the Iris Table (see Chapter 13)



Page intentionally left blank

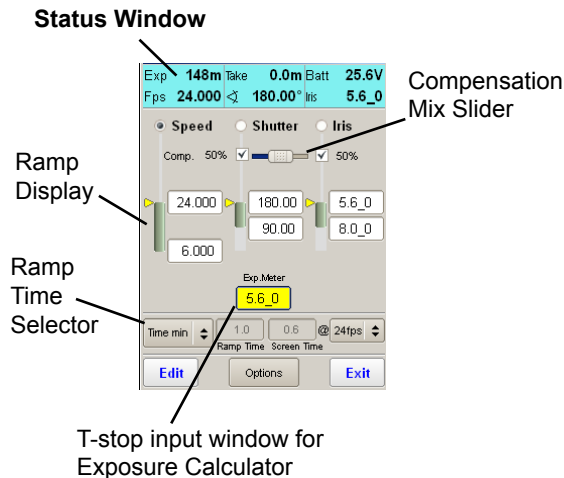


## 14. Ramp Control Menu

In the Ramp Control Menu speed and shutter ramps can be programmed. After enabling the Iris Control, also iris ramps can be performed. If a speed ramp is to be compensated by iris and shutter simultaneously, the ratio of both values can be mixed via the Compensation Mix Slider.

The actual status and position of the ramp is shown in the Ramp Display by the yellow arrows. When the ramp is performed, the arrows move along the ramp display from the start values to the end values providing a clear situational awareness of the running ramp.

The Exposure Calculator helps calculating the working T-stop. Simply measure the light on the set with your light meter and standard settings (e.g. 24fps, 250ASA) and enter the measured T-stop in the calculator (T-stop input window). The working T-stop that has to be set on the lens will then be computed and displayed in the Ramp Display. When the Iris Control is enabled, the iris will be set automatically to the correct value via the lens motor.



## 14.1 Enabling the Iris Control

In order to compensate ramps via the iris or to program an iris ramp, please check if:

### 1.) The Iris Table is activated in the Lens Manager

To activate an Iris Table navigate to the Lens Manager. Please refer to chapter 13.

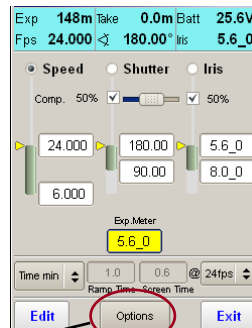
### 2.) The Iris Control is enabled.

**To enable the Iris Control:**

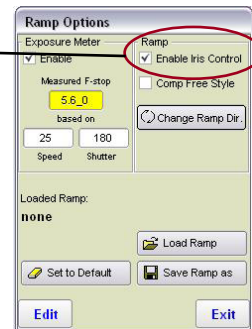
- In the Set Ramp Menu, click on „Options“.
  - In the Options Menu, click on „Enable Iris Control“.
- If you can not activate the checkbox, no lens is mounted. Please navigate to the Lens Manager (see Chapter 13) and mount a lens.

**Note:**

When the Iris Control is enabled, the iris motor will set the iris automatically to the value entered in the Ramp Control Menu. To manually set the iris, switch the Iris Control off.



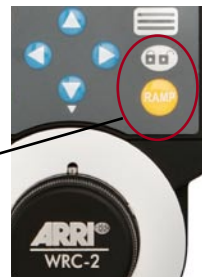
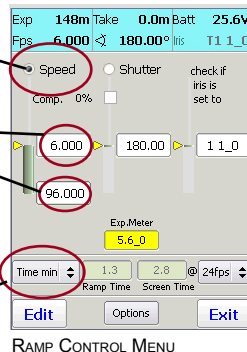
RAMP CONTROL MENU



RAMP OPTIONS MENU

## 14.2 Programming a Ramp

- Select the desired speed ramp function by clicking on the corresponding control button. (e.g. „Speed“)
- Click on the start and end values of the ramp display to edit the values. (e.g. 6fps and 96fps)  
The ramp will always be performed from top to bottom. Therefore in this example the upper value will be the initial camera speed (6fps). The yellow marker displays the current camera speed.
- Click in the Ramp Time Window to select the timing control:  
„Time“ = A user defined ramp time can be set  
„Time min“ = The fastest ramp will be computed and set by the WRC-2 automatically.  
„Knob“ = The ramp can be controlled manually via the WRC-2 Knob / Handwheel.
- After running the camera the ramp can be performed by pushing the „Ramp“ button on the WRC-2  
Make sure the keypad is not locked. To unlock the pad press the „Lock/Unlock“ key for three seconds.



- To compensate the Speed Ramp refer to 14.3
- To change the Ramp Direction refer to 14.5

## 14.3 Exposure Compensation

Via the Ramp Menu three different exposure compensation methods can be selected:

### 1.) Compensation via the Mirror Shutter

The camera has to be outfitted with an electronic adjustable mirror shutter.

- Check the compensation box of the shutter ramp display. The shutter values will be computed by the WRC-2. (e.g. 11,25 to 180 degrees)

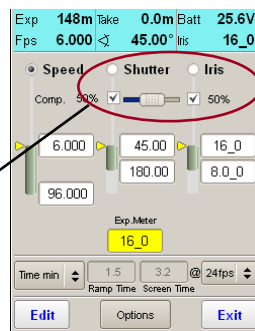
### 2.) Compensation via the iris

A CLM-1 or CLM-2 motor needs to be mounted to the camera and an **iris table must be activated**. Refer to chapter 15.

- Check the „Iris“ box of the iris ramp display. The iris values will be computed by the WRC-2

### 3.) Mixed Compensation via Shutter and Iris

- Check both the „Iris“ box and the „Shutter“ box of the ramp display. Use the Compensation Mix Slider to adjust the ratio between iris and shutter in 5% steps. To adjust the values in 1% steps, use the Arrow Buttons on the WRC-2.



RAMP CONTROL MENU

Red values:

The ramp calculation can result in values that can not be accepted by the currently used camera or lens, e.g. T-stop 32, or 10degree shutter angle.

**In this case the value will be displayed in red.** Change the basic values, e.g. the speed, to keep the calculated values in an acceptable range.

Example:

A speed change from 1 to 128 fps with shutter compensation only is not possible since for compensation seven T-stops are necessary (1-2-4-8-16-32-64-128fps), but the shutter can only provide four stops (180° -90°-45°-22,5°-11,25°). To solve the problem, either reduce the speed range or enable the iris compensation additionally.

## 14.4 Exposure Calculation

The exposure calculation is a very powerful feature of the WRC-2. It reduces the workload of a ramp exposure calculation to a simple transfer of the exposure value from a light meter to the WRC-2.

Once the working f-stop for a shot is determined by the DP and entered in the WRC-2, all exposure compensations will be calculated automatically.

### To Enable the Exposure Calculation:

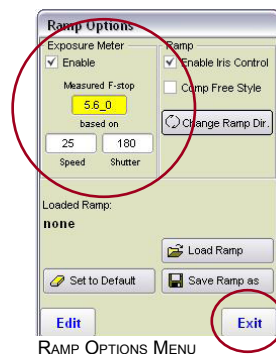
- In the Ramp Menu click on „Options“
- Check „Enable“ in the Exposure Meter Window
- Enter speed and shutter values of the exposure meter that is used on the set. (values will be stored)
- Click „Exit“ to go back to the Ramp Menu

### Use the Exposure Calculation:

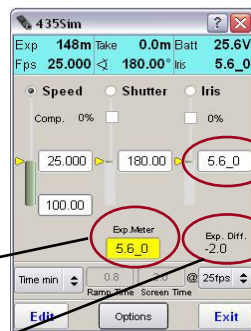
- Measure the light to determine the working f-stop.
- Click on the „Exposure Meter“ Window and enter the working f-stop by using the sliders.
- Read the calculated f-stop in the Iris Display and set the iris value on the lens.



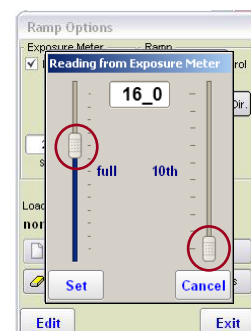
Note: Since there is no compensation selected, the current settings will lead to a two stop underexposure. See the Exp. Diff. (Exposure Difference) indicator window.



RAMP OPTIONS MENU



RAMP CONTROL MENU



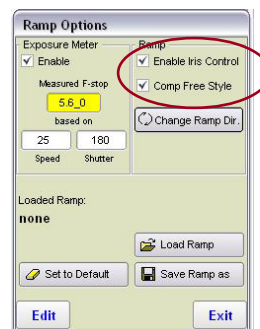
## 14.5 Compensation Free Style

After selecting a compensation method for a desired ramp (e.g. 100-25fps) the WRC-2 will compute the necessary compensation values (e.g. 180°-90° and T2.8-T4). The „Compensation Free Style“ mode enables the user to edit all values of a ramp independently, regardless of the exposure compensation. With the „Exposure Meter“ on, the ramp entry values (e.g. 100fps, 180°, T2.8) will still be computed but they can now also be changed. The resulting over- or underexposure will be displayed by the „Exp. Diff“ indicator (Exposure Difference)

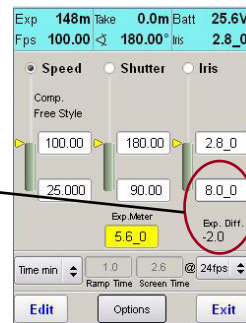
### Enable „Compensation Free Style“

- In the Ramp Control Menu, click on „Options“ to enter the Ramp Options Menu.
- Activate „Comp Free Style“
- Click „Exit“ to go back to the Ramp Control Menu
- In the Ramp Control Menu, click on the desired value (in our example we want to change the T-stop value from T4 to T8)

Note the „Exp. Diff“ (Exposure Difference) indicator. After changing the f-stop from T4 to T8, the indicator will show „-2.0“. That means, with the current setting, the result will be a two stop underexposure.



RAMP OPTIONS MENU



RAMP CONTROL MENU



RAMP CONTROL MENU

## 14.6 Ramp Options

In the Ramp Options Menu the Exposure Calculation and Iris Control can be enabled. Also the Ramp Direction can be changed and ramps can be saved and loaded.

- In the Ramp Menu click on „Options“ to enter the Ramp Options Menu.

### Change Ramp Direction:

- Click on „Change Ramp Direction“ in the Ramp Window and confirm the safety message.

### Set to Default

- Will reset all ramp parameters to a standard speed ramp to provide a basic setting.

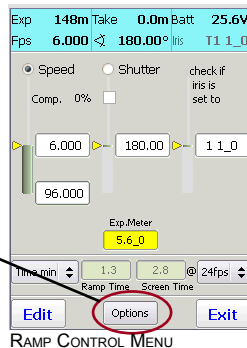
### Safe and Load a Ramp

### Save a Ramp

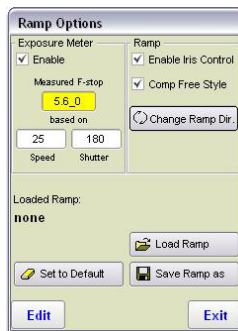
- Click on „Save Ramp as“ to save the actual Ramp.  
Note the name of the folder.

### Load a Ramp

- Click on „Load Ramp“ and navigate to the folder where the Ramps are saved.



RAMP CONTROL MENU



RAMP OPTIONS MENU

## 14.7 Ramp Example

Even though the WRC-2 can compute the correct exposure values, a proper planning of the ramp is recommended to understand and follow the calculations. For this example we assume the following:

- The director wants to change the camera speed between 3 and 24 fps manually.
- The exposure should be compensated by iris and shutter simultaneously.
- Set up the WRC-2 and acquire the correct f-stop.

The WRC-2 could be set up as follows:

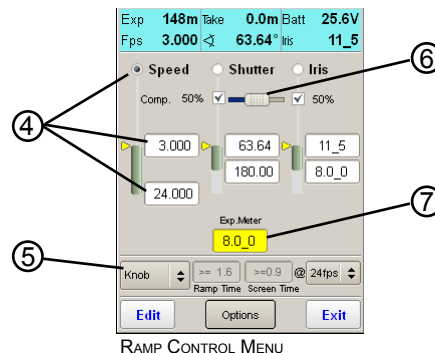
- 1.) In the Main Menu click on „Lens Manger“. Make sure that the used lens is loaded and calibrated (see Chapter 15) otherwise the iris compensation will not be available.
- 2.) Start the Ramp Control Menu (from Main Menu).
- 3.) Click on „Options“ and enable the Ramp and Exposure Meter Controls. Measure the light to acquire the working f-stop and enter the value in the yellow window. Make sure your lightmeter is set to 1/50 second or 24/25fps. Click EXIT to confirm.
- 4.) Click on „Speed“ and enter the start value „3“ and the end value „24“ frames per second.

5.) Select „Knob“ from the Ramp Time Window to enable the manual speed change.

6.) Activate „Shutter“ and „Iris“ compensation and move the slider in the middle position to mix the compensation ratio to 50% Iris and 50% Shutter. Use the Arrow Buttons to adjust in small steps.

7.) Confirm the working f-stop or enter a new one if the light has changed.

8.) Start the camera by pressing the RUN button and control the speed change by turning the knob.



RAMP CONTROL MENU



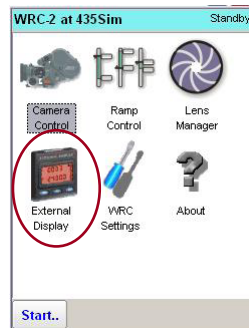
## 15. External Display Menu

The External Display Menu remote controls the camera menu and shows the same information as screened on the camera display.

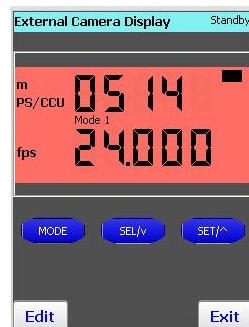
Note: The External Display Menu can only be used with cameras provided with an LCD display. (e.g. ARRIFLEX 435, 535, 16SR-3, 416).

Thus the External Display Menu can neither be used with ARRICAM Studio or ARRICAM Lite, nor with older ARRIFLEX cameras without an LCD display (e.g. SR-2, SR-1, BL-4 etc.)

- In the Main Menu click on the ikon „External Display“ to open the Menu.
- Click on „Mode“ to navigate to the next mode.
- To change a value: Click on „SEL“ until the desired value starts to flash.
- Click „Set“ to change the value.
- Wait until the value stops flashing or click „Mode“ to confirm the new setting.



MAIN MENU



EXTERNAL DISPLAY

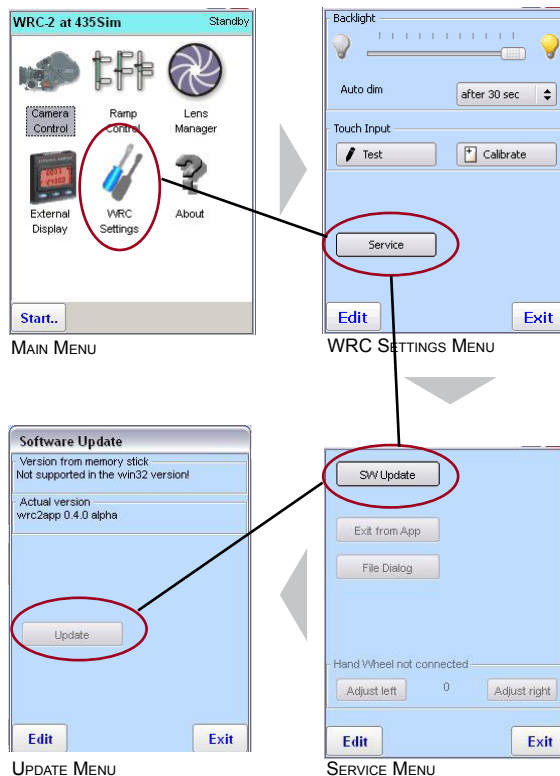
## 16. Appendix

### 16.1 Updating the WRC-2

- Connect an USB Stick with the update software to the mini-USB connector „MEM“ of the WRC-2. Use the provided adapter cable to adapt from an USB stick to the Mini-USB connector.



- Open the WRC-2 Settings Menu.
- Click „Service“.
- Click „SW Update“.
- Check if version from memory stick is displayed.  
If not, check USB stick connection.
- Click „Update“ to upload the new software.
- Click „OK“. The unit will boot with the new software.



## 16.2 Service Menu

### Exit from App.

For service personnel only.

### Adjusting the Knob (Handwheel)

For service personnel only :

- Turn the knob to the left end stop and press „Adjust left“, then turn the knob to the right end stop and press „Adjust right“.
- Turn the knob from end stop to end stop and check if the values change correspondingly.

### File Dialog

For service personnel only.

## 16.3 Cleaning

### Cleaning the Touchscreen

- Any standard glass cleaner can be used to clean the touchscreen, but avoid products containing ammonia. Always spray the glass cleaner on the cloth or towel and then clean the touchscreen. Glass cleaner sprayed directly on the unit could possibly leak inside and cause damage.

## 16.4 Troubleshooting

### Communication Problems:

In the event of a communication failure between the WRC-2 and the LCS Device or the Camera, the EDIT button will turn red and a dot will run across the text.

To solve the problem, check all cable connections and restart the unit.

When using the WRC-2 wireless via a WMU-3 or WMU-2, try the following:

1.) Connect both units, receiver (e.g. Lens Data Box) and transmitter (e.g. WMU-3) via the WC-A3 antenna cable to eliminate possible transmitting errors.

2.) Select a different channel on transmitter and receiver and restart the camera.

Wait for a flashing green RF signal on the LCS unit (FEM-2, LDB, UMC-3 etc) and then restart the WMU-3.

### No Speed setting available:

Check if the camera is set to „PS/CCU“ and not to „NORM“.

Page intentionally left blank

## 16.5 Technical Data

### Dimensions

Length	200mm (7.87")
Width	76.6mm (3.02")
Height	27.3mm (1.07")

### Weight

approx. 460g with knob mounted

### Power Supply

Acceptable Voltage Range	7-35V
Power Consumption	1.2W-1.8W
(depending on Backlight Settings)	

### Operating Temperature Range

-20°C to +50°C (-4°F to 122°F)

## 15.5 Declaration of Conformity



### Declaration of Conformity

This declaration is valid for following product:

Equipment: Remote camera control

Type: WRC-2

Hereby the equipment is confirmed to comply with the requirements set out in the Council Directive on the Approximation of the Laws of the Member States relating to Electromagnetic Compatibility (2004/108/EEC)

The following company is responsible for this declaration:

ARRI Cine & Video Geräte Ges.m.b.H  
Pottendorferstrasse 25-27/3/2/1  
A-1120 Wien

The measurements were carried out in accredited laboratories.

For the evaluation of above mentioned Council Directives for Electromagnetic Compatibility was consulted:

DIN EN 55103-1: 1997-06 E3

DIN EN 55103-2: 1997-06 E3

ARRI  
LEONARD & RICHARD CONZELMANN  
GmbH & Co. KG  
Hauptstraße 17, 80333 München  
Tel. 089 38354-142 Fax 089 38354-143

München, 12. Nov. 2007  
Date / Place

Signature of responsible Person

## 16.6 ARRI Service

Germany .....Arnold & Richter  
Cine Technik  
Türkenstraße 89  
D-80799 München  
phone: +49 (089) 3809-0  
fax: +49 (089) 3809-1244  
E-mail: webmaster@arri.de

USA ..... ARRI Inc.  
(East Coast)  
617, Route 303  
Blauvelt, New York 10913  
phone: (914) 353 14 00  
fax: (914) 425 12 50  
E-mail: arriflex@arri.com

(West Coast)  
600 North Victory Blvd.  
Burbank, California 91502  
phone: (818) 841 70 70  
fax: (818) 848 40 28  
E-mail: arriflex@arri.com

GB ..... ARRI (GB) Ltd.  
2 Highbridge  
Oxford Road  
Uxbridge, Middlesex, UB8 1LX  
phone: (0) 1895 457 000  
fax: (0) 1895 457 001  
E-mail: sales@arri-gb.com

Italy .....ARRI ITALIA S.r.l.  
Viale Edison 318  
20099 Sesto S. Giovanni (Milano)  
phone: (02) 26 22 71 75  
fax: (02) 242 16 92  
E-mail: info@arri.it

Via Placanica, 97  
00040 Morena (Roma)  
phone: (06) 79 89 02 1  
fax: (06) 79 89 02 206

Canada ..... ARRI Canada Ltd.  
415 Horner Avenue, Unit 11  
Etobicoke, Ontario  
Canada M8W 4W3  
phone: (416) 255 33 35  
fax: (416) 255 33 99  
E-mail: service@arrican.com

## 17. Index

### A

Add Defaults 29, 31  
 Add Existing 37  
 Add Item 29, 31  
 Adjusting the Knob 51  
 Administer Iris Tables 37  
 ARRICAM 12, 14, 15, 16, 18, 19, 20  
 ARRIFLEX 416 15, 19  
 ARRIFLEX 435 Xtreme / Advanced 14, 18  
 Arrow Buttons 21  
 Auto Dim 25

### B

Backlight level 25  
 Battery Voltage 27  
 Beep Event 33  
 Beep Volume 33

### C

CAL 36, 37  
 Calibration Button 36  
 Camera Connector 4, 16, 21  
 Camera Control Menu 26

Camera Speed 4, 28  
 Camera Status Line 36  
 Cam Info 14, 15, 18, 19  
 Changing Camera Mirror Shutter 4, 30  
 Cleaning 51  
 CLM-1 11, 14, 15, 18, 19, 44  
 CLM-2 11, 14, 15, 18, 19, 44  
 Compensation 11, 14, 15, 18, 22, 41, 44  
 Compensation Free Style 46  
 Compensation via the iris 44  
 Compensation via the Mirror Shutter 5, 44  
 Comp Free Style 46  
 Create new Iris Tables 37

### D

Dimensions 54  
 Direct connection 16

### E

Edit 21, 22, 23, 28, 29, 30, 31, 42  
 Edit Iris Table 37, 38  
 Erase or Rename Iris Tables 37  
 EXD-1 22  
 Exp. Diff 46



Exposed Film Counter 32  
Exposure Calculation 45, 47  
Exposure Calculator 41  
Exposure Compensation 44  
External Display 49

## F

feet 32, 33  
FEM-2 12, 14  
Filmcounter 26, 32  
Focus 27  
Forward 29  
Function Keys 21

## H

Handwheel 43, 51

## I

Iris Table 26, 36, 37, 38, 39, 42  
Iris Table Status Line 36  
Iris Table Wizard 37, 38

## K

KC-97 15, 17, 19  
KC-99 15, 17, 19  
Key Navigation 21  
Knob 43, 48, 51

## L

LCS 12, 16, 17  
LCS Bus 16  
LCS Unit 36, 37  
LDS Info 14, 18  
Length Unit 5, 33  
Lens Data Box 12, 13, 14, 15, 18, 19  
Lens Manager 36, 39  
Lens Manager Menu 36, 37, 38, 39  
Light meter 41, 45  
Loaded Table Status Line 37  
Load a Ramp 47  
Load Table 37  
Lock/Unlock 21, 43

## M

Marking Disk 21  
MEM 50  
Menu Structure 23  
Message Area 27  
Meter 32, 33, 41, 45  
Mini-USB 50  
Mirror Shutter 44  
Mixed Compensation via Shutter and Iris 44

## O

ON/OFF button 13  
Operating Temperature Range 54  
Order Numbers 3  
override 46

## P

PC and USB sockets 21  
Phase Button 26  
Powering Up The Unit 20  
Power Supply 54  
Preset Camera Shutter Angles 31  
preset values 28, 29, 30, 31  
Programming a Ramp 43  
PS/CCU 27

## R

radio channel 13  
radio link 12  
Ramp Button 21  
Ramp Compensation 11  
Ramp Control 41  
Ramp Time Window 43  
ratio 41, 44  
Raw Stock Counter 32  
RCU-1 10, 22  
Receiving 12  
Red values 44  
Remove Iris Tables 37  
Reverse 29  
Run Button 21

## S

Save a Ramp 47  
Screen Time Display 32  
Service Menu 25, 50  
Settings Window 26  
Shutter 14, 15, 18, 19, 22, 26, 30, 31, 44  
Simulator Software 10  
Software Modules 10, 22  
specific camera shutter angle 30  
Speed 14, 15, 18, 19, 22, 26, 28, 29, 42, 43

Status Window 26, 27, 41  
 Stylus 20, 21  
 Stylus ReleaseButton 21

## T

T-stop 41, 44  
 Take Counter 32  
 Technical Data 54  
 Temperature Range 54  
 Time Code 33, 34, 35  
 Time min 43  
 touchscreen 10, 25  
 Touchscreen Navigation 21  
 Transmitting 12  
 Troubleshooting 52

## U

UMC-3 16, 17  
 unit of measurement 32  
 Universal Remote Controller 14, 15, 17, 19, 36  
 unlock 43  
 Updating 25, 50  
 upload 50  
 URM-3 12, 14, 17  
 USB connector 50  
 USB Stick 50

user defined camera speed 28  
 User Folder System 36, 37  
 User Iris List 36, 37, 38

## V

Voltage Range 54

## W

Warnings 26, 35  
 Weight 54  
 Wireless Expansion Bracket 13  
 Wireless Handgrip Attachmend 11  
 wireless mode 12  
 Wirless Main Unit 12, 13  
 Wizard 37, 38  
 WMU-2 12, 14  
 WMU-3 4, 11, 12, 13, 14  
 working T-stop 41  
 WRC-1 10, 22

Technical data are subject to change without notice.  
© ARRI 2007

Ident-No. K5.67651.0



ARNOLD & RICHTER CINE TECHNIK Türkenstr. 89 • D-80799 München  
Phone +49 (89) 38 09 -0 • Fax +49 (89) 38 09-12 44  
[www.arri.com](http://www.arri.com)