



RED FOCUS™

OPERATION GUIDE



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RED FOCUS™ OPERATION GUIDE

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RED Focus™ Operation Guide

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COMPLIANCE

EUROPEAN UNION COMPLIANCE STATEMENTS



Red declares that the equipment described in this document is in conformance with the requirements of the European Council EMC Directive 2004/108/EC, Low Voltage Directive 2006/95/EC, RoHS Directive 2002/95/EC and WEEE Directive 2002/96/EC.

This declaration is based upon compliance of the product to the following standards:

- EN 55022, Information Technology Equipment - Radio Disturbance Characteristics
- EN 55024, Information Technology Equipment - Immunity Characteristics
- EN 61000-3-2, Limits for harmonic current emissions
- EN 61000-3-3, Limits for harmonic current emissions
- EN 60065, Audio, video and similar electronic apparatus, Safety requirements



The Waste Electrical and Electronic Equipment (WEEE) mark applies only to countries within the European Union (EU) and Norway. This symbol on the product and accompanying documents means that used electrical and electronic products should not be mixed with general household waste. For proper treatment, recovery and recycling, please take this product to designated collection points where it will be accepted free of charge. Alternatively, in some countries you may be able to return your products to your local retailer upon purchase of an equivalent new product.

Disposing of this product correctly will help save valuable resources and prevent any potential negative effects on human health and the environment, which could otherwise arise from inappropriate waste handling. Please contact your local authority for further details of your nearest designated collection point. Penalties may be applicable for incorrect disposal of this waste, in accordance with your national legislation.

For business users in the European Union, if you wish to discard electrical and electronic equipment, please contact your dealer or supplier for further information.

RESPONSIBLE PARTY

Red Digital Cinema

20291 Valencia Circle

Lake Forest, CA 92630 USA

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GETTING STARTED

Congratulations on your purchase of your RED Focus. Please read the attached safety instructions, and then carefully unpack the RED Focus. If there is any physical damage or missing components for your RED Focus, please file a support ticket at www.RED.com/support.



RED Focus and Case

IMPORTANT SAFETY INSTRUCTIONS

READ BEFORE USING YOUR RED FOCUS

- Heed all cautions and warnings in these instructions.
- Read these instructions before operating the RED Focus.
- Follow these instructions while operating the RED Focus.
- Keep these instructions with the RED Focus at all times.
- Install RED Focus in accordance with the manufacturer's instructions.
- Do not use RED Focus near water.
- Do not install near any heat sources such as radiators, heat registers, stoves, or any other apparatus that produce heat.

DO NOT MODIFY OR DISMANTLE: Do not attempt to open your RED Focus as doing so may expose you to electric shock and serious injury. There are no user-serviceable parts inside. Alteration or repairs made to the RED Focus, except by a RED authorized service facility, will void the Limited Warranty. Users are not permitted to make design changes or otherwise modify the operation of the RED Focus without the express written approval of RED DIGITAL CINEMA®.

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STORAGE: Store in a protected, level and ventilated place. Avoid exposure to temperature extremes, damp, severe vibration, strong magnetic fields, direct sunlight or local heat sources during storage. Remove the batteries from the RED Focus before storage.

Note that storing batteries fully charged or in high temperature conditions may permanently reduce the life of the battery. Available battery capacity may also be temporarily lessened after storage in low temperature conditions.

The recommended storage and usage temperature for your RED Focus is:

- Operating range: TBD
- Storage range: TBD

If there are any performance issues with your RED Focus within this operating range, please file a support ticket on www.RED.com/support.

MOISTURE: Avoid exposing your RED Focus to moisture. The unit is not waterproof, so contact with water could cause permanent damage to the unit as well as electric shock and serious injury to the user. Do not use the RED Focus in the rain or under other conditions with high moisture.

AVOID SHOCK: Do not expose your RED Focus to excessive vibration or impact. Be careful not to drop your RED Focus. Internal mechanisms may be damaged by severe shock. Mechanical alignment of optical elements may be affected by excessive vibration.

WARNING: To reduce the risk of fire or electric shock, do not expose RED Focus to rain or moisture.

CAUTION: Refer all service and repair to qualified RED service personnel. To reduce the risk of electric shock, DO NOT perform any servicing other than that contained in the operating instructions.

BATTERY: Ni-Cad batteries may be subject to special handling requirements pursuant to federal and local laws. Please refer to specific shipping instructions included with your battery regarding proper transport of your battery. Do not handle your battery if it is damaged or leaking. Disposal of batteries must be in accordance with local environmental regulations. For example, California law requires that all rechargeable batteries must be recycled by an authorized recycle center.

WARNING: Do not expose the batteries to excessive heat.

CLEANING: When cleaning your RED Focus, remember that it is not waterproof and moisture can damage electronic circuitry. Do not rinse or immerse any element of the RED Focus, keep it dry at all times. Do not use soaps, detergents, ammonia, alkaline cleaners, and abrasive cleaning compounds or solvents. These substances may damage lens coatings and electronic circuitry. Clean only using a dry cloth.

THEORY OF OPERATION

RED Focus is a device that attaches to the PL lens mount of the RED ONE® and RED EPIC® cameras and projects an image into the camera's sensor, allowing back focus to be properly adjusted for the best picture quality.



RED Focus

BATTERY INSTALLATION / REPLACEMENT

Power is supplied to RED Focus via two (2) AA batteries.

To install/replace the batteries:

1. Remove the two (2) screws attaching the battery cover to RED Focus.
2. Remove the battery cover.



RED Focus with Battery Cover Removed

3. Install or remove / replace the batteries.

IMPORTANT: Ensure batteries are installed as shown on RED Focus battery holder or RED Focus will not operate.

4. Install the battery cover and screws.

POWER CONSUMPTION

RED Focus draws 42ma of power when on for 2 minutes. At this power consumption, two (2) 1.5v AA batteries will run the RED Focus for approximately 52 hours (depending on the battery quality and charge when installed).

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CONTROL, INDICATOR AND DISPLAY

This section describes the physical control, indicator and display of RED Focus.

CONTROL

The Red Power button located on the front, powers up RED Focus. After 3 minutes, RED Focus is designed to automatically power down. RED Focus CANNOT be powered down manually using the Power button.

NOTE: To manually power down RED Focus off, the batteries must be removed. Refer to GETTING STARTED > BATTERY INSTALLATION / REPLACEMENT.

LED INDICATOR

The LED located on the front of RED Focus communicates operational status and illuminates Green when RED Focus is ON and ready to use.



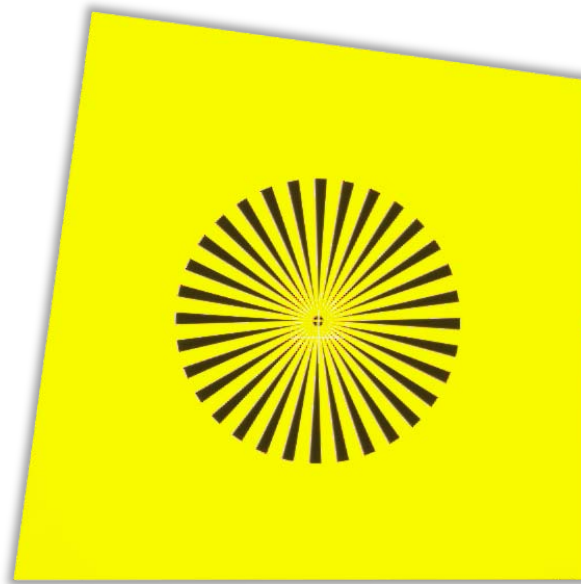
RED Focus Power Button and LED

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DISPLAY

RED Focus projects a Siemens Star image onto the camera sensor for adjusting back focus. For back focus adjustment procedure, go to OPERATION > BACKFOCUS ADJUSTMENT.

When properly installed, RED Focus will display the image in the orientation shown.



RED Focus Displayed Image

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OPERATION

This section describes powering up/down and basic controls of RED Focus and how to initiate a project.

POWER UP / DOWN

POWER UP

To power up RED Focus, press the Power button located at the front.

- The Power LED will illuminate Green indicating RED Focus is on and ready.
- The image displayed by RED Focus will be visible when installed on a camera's PL mount with the camera powered up.

POWER DOWN

After 3 minutes, RED Focus will automatically power down. **RED Focus cannot be powered down by pressing or holding down the Red button.**

NOTE: To manually power down RED Focus off, the batteries must be removed. Refer to GETTING STARTED > BATTERY INSTALLATION / REPLACEMENT.

CAMERA BACKFOCUS ADJUSTMENT

RED ONE

1. Place the camera on a level, stable surface or mount the camera on a tripod.
2. Using a 5/32" Allen wrench, loosen the two (2) focus ring bolts.



Loosening RED ONE Focus Ring Bolts

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3. Rotate the focus ring a small amount in both directions to ensure it moves freely.
4. Install RED Focus to the camera PL mount.
 - A. Remove the camera lens or sensor cover if equipped.
 - B. Install RED Focus onto the camera in the position shown.
 - C. Ensure RED Focus is secured to the camera with the camera lock ring.



RED Focus Installed Properly on RED ONE Camera

5. Power up the camera.

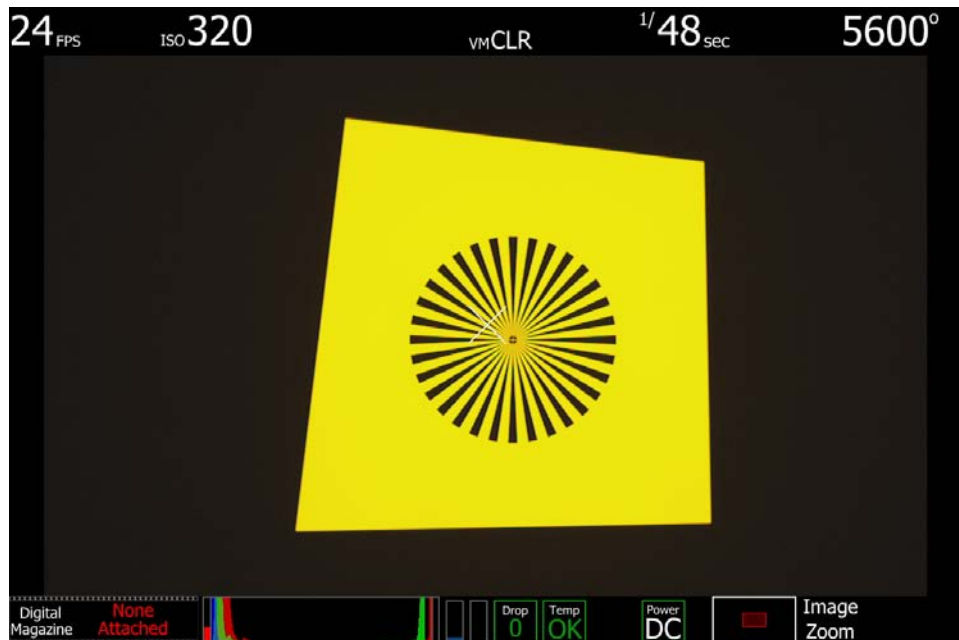
NOTE: Allow camera to boot up completely.

6. Power up RED Focus. Refer to POWER UP / DOWN.

NOTE: Remember that RED Focus will AUTOMATICALLY power down after 3 minutes. Press the Red button on the front to power back up.

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- Place the camera in Magnify (Image Zoom) mode by pressing User Key 2 located on the left side of the camera body. Refer to the RED ONE OPERATION GUIDE > SYSTEM MENU CONTROLS > SETUP > KEY-MAP > USER KEYS



RED Focus Displayed Image on RED ONE Camera

NOTE: The “X” in the center of the screen is displayed by the camera and will not be lined up with the image projected by RED Focus.

- Adjust the camera focus ring until the image is in focus.

NOTE: The “Focus” option located under AUDIO / VIDEO MENU > VIEWFINDER > FALSE COLOR > FOCUS can serve as a good double-check for proper focus during this procedure.

NOTE: The center of the image will never be in perfect focus as the lines are less than 1/3 of a pixel in size.

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RED Focus Installed Properly on RED ONE Camera

9. Tighten the camera focus ring screws to 22.22 In-Lb (2.5 N.m) of Torque.

NOTE: Some shifting may occur while tightening the focus ring, recheck the back focus again and adjust as necessary.



Tightening RED ONE Focus Ring bolts

10. This completes the RED ONE back focus adjustment.

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RED EPIC

WARNING: THERE IS A METAL PLUG INSTALLED IN THE CAMERA BODY COVERING THE BACK FOCUS SCREW. THIS PLUG MUST BE REMOVED BEFORE PERFORMING A BACK FOCUS ADJUSTMENT. TO REMOVE THE PLUG, USE A T-10 TORX DRIVER.

Back focus is adjusted by turning the back focus adjustment on the top of the camera's front plate using a T-10 Torx screwdriver. This screw is indicated by a Siemens Star with an arrow pointing to its location.



Back Focus Adjustment Location

1. Remove the screw-in plug located in the back focus adjustment opening using a T-10 Torx driver.
2. Place the camera on a level, stable surface or mount the camera on a tripod.
3. Install RED Focus to the camera PL mount.
 - A. Remove the camera lens or sensor cover if equipped.
 - B. Install RED Focus onto the camera in the position shown.
 - C. Ensure RED Focus is secured to the camera with the camera lock ring.

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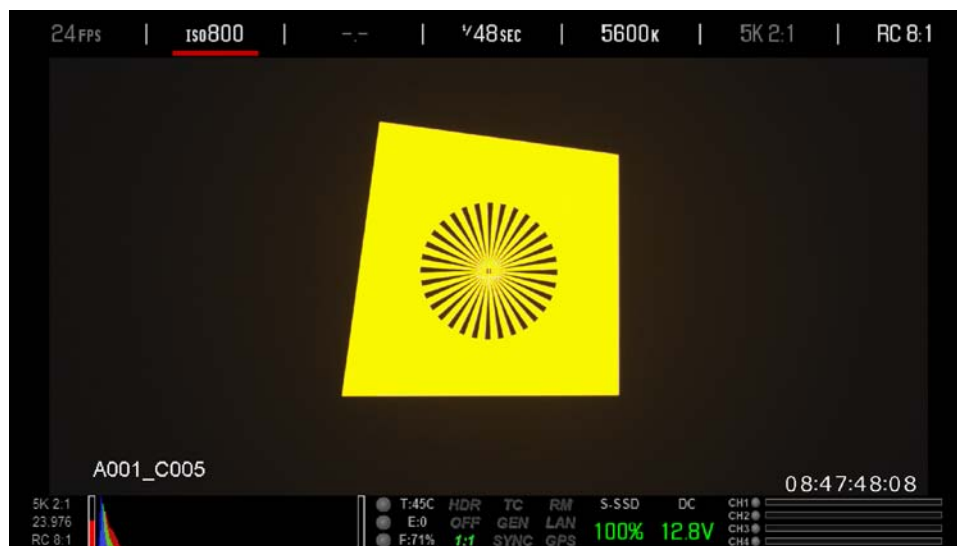
RED Focus Properly Installed on RED EPIC Camera

4. Power up the camera.
5. Power up RED Focus. Refer to POWER UP / DOWN.

NOTE: Remember that RED Focus will AUTOMATICALLY power down after 3 minutes. Press the Red button on the front to power back up.

6. Set the camera to Magnify. Go to SECONDARY MENU > SETTINGS > DISPLAY > FALSE COLOR > MAGNIFY.

NOTE: The “Focus” option located under SECONDARY MENU > SETTINGS > DISPLAY > FALSE COLOR > FOCUS can serve as a good double-check for proper focus during this procedure.



RED Focus Displayed Image on RED ONE Camera

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7. Insert a T-10 Torx® screwdriver into the back focus adjustment screw. The screw is oriented at approximately 80° as shown.



Performing Back Focus Adjustment

8. Carefully and slowly, rotate the back focus adjustment screw to achieve optimum focus.
 - Turning CLOCKWISE moves the sensor forward.
 - Turning COUNTER-CLOCKWISE moves the sensor rearward.

NOTE: The center of the image will never be in perfect focus as the lines are less than 1/3 of a pixel in size.
9. The back focus adjustment mechanism is self-locking, and does not require a supplementary locking screw.
10. Install the screw-in plug in the back focus adjustment opening using a T-10 Torx driver.
11. This completes the RED EPIC back focus adjustment.

TECHNICAL DATA

The following shows the technical data for RED Focus.

Dimensions	Length: 6.5" (165.1 mm) Diameter: 2.75" (69.85 mm)
Weight	TBD lbs (TBD kg)
Environment	No exposure to heat No exposure to vibration No exposure to strong electric or magnetic fields
Operating Temperature	Maximum: 50 - 104°F (10 - 40 °C)
Humidity	Operating: 20 - 80 %, non-condensing Non-Operating: 10 - 90 %, non-condensing
Air	Dust-Free
Power	5V DC, 5A

TROUBLESHOOTING

For errors or issues beyond those listed below, please contact support through our web site at www.red.com/support.

- **RED FOCUS Does Not Power Up** - Verify batteries are installed correctly - reinstall if necessary. If batteries are installed correctly, replace batteries with fresh ones.
- **RED FOCUS Image Is Blurry After Tightening Focus Ring Bolts (RED ONE)** - Some shifting may occur while tightening the focus ring, recheck the back focus again and adjust as necessary.



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