

# Macbeth Lighting



## Judge II

### Operation Manual

## CE DECLARATION

**CE** Hereby, X-Rite, Incorporated, declares that this Judge II is in compliance with the essential requirements and other relevant provisions of Directive(s) EMC 2004/108/EC, LVD 2006/95/EC, and RoHS 2011/65/EU (Category 9).

## FEDERAL COMMUNICATIONS COMMISSION NOTICE

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

## INDUSTRY CANADA COMPLIANCE STATEMENT

This Class A digital apparatus complies with Canadian ICES-003.  
Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.



## EQUIPMENT INFORMATION

Use of this equipment in a manner other than that specified by X-Rite, Incorporated may compromise design integrity and become unsafe.

**WARNING:** This instrument is not for use in explosive environments.



Instructions for disposal: Please dispose of Waste Electrical and Electronic Equipment (WEEE) at designated collection points for the recycling of such equipment.



## SAFETY INSTRUCTIONS

- PLEASE READ AND FOLLOW INSTRUCTIONS—Read and follow all instructions before you attempt to assemble or operate the unit.
- RETAIN THIS MANUAL FOR FUTURE REFERENCE—Once you have read this manual, keep it handy for others to read or refer to when they need to operate the unit.
- OBEY WARNINGS—Please comply with all warnings and safeguards that we provide in this manual. They have been written to keep you and your unit safe. If the unit is used in a manner not specified in this manual, the protection provided by the unit may be impaired.
- PROTECT FROM WATER AND MOISTURE—Maintain electrical safety when you use this unit. Do not use it in an area where there is possible hazard of electric shock from spilled water or other liquids or uncontrolled moisture.
- CLEAN PROPERLY—You can wipe the unit with a clean, white lint-free cloth. Do *not* apply liquid cleaners or agents containing wax, since these can yellow and change reflectance and gloss properties. Clean outer surfaces with a dampened cloth containing a mild soap.
- USE ONLY A PROPER POWER SOURCE—Use the proper power source for this unit. If you have any doubt, consult the label on the back of the unit for this information. Unplug the unit when it will not be used for extended periods of time.
- UNPLUG UNIT BEFORE CHANGING LAMPS—Always unplug the unit *before* you change lamps.
- DO NOT OVERLOAD CIRCUITS—Do *not* overload wall outlets and extension cords. This can result in a risk of fire or electric shock. Periodically examine all cords to make certain that they are not damaged, cracked or twisted. Cords that show any signs of damage or wear should be replaced immediately.
- AVOID HEAT SOURCES—Do *not* use the unit near heat sources such as radiators, heat registers or other heat producing appliances.

- **DO NOT OPERATE DURING LIGHTNING STORMS**—During a lightning storm, unplug the unit to avoid electrical power surges or unnecessary power drops that could result in damage to lamps and electrical circuitry.
- **SERVICE PROPERLY**—With the exception of lamp replacement, do *not* attempt to service this product yourself. If you should attempt unauthorized repairs, you may invalidate the warranty that is active on your unit. For any other malfunctions in operation, contact X-Rite Technical Service.
- **DAMAGE REQUIRING SERVICE**—The unit must be serviced by qualified service personnel when the unit has been dropped or damaged, water or other liquid(s) have been spilled into the electrical components or the unit does not operate normally.
- **UV-A EMISSIONS**—A low level UV radiation is emitted when the UV feature is activated. Avoid direct exposure of 15 minutes or more under UV radiation. Protective measures are required for prolonged exposure.
- **EMERGENCY SHUT-OFF**—The unit should be installed near a main power shut-off switch in the event of an emergency.

## WARRANTY INFORMATION

X-Rite warrants this Product against defects in material and workmanship for a period of twelve (12) months from the date of shipment from X-Rite's facility, unless mandatory law provides for longer periods. During such time, X-Rite will either replace or repair at its discretion defective parts free of charge.

X-Rite's warranties herein do not cover failure of warranted goods resulting from: (i) damage after shipment, accident, abuse, misuse, neglect, alteration or any other use not in accordance with X-Rite's recommendations, accompanying documentation, published specifications, and standard industry practice; (ii) using the device in an operating environment outside the recommended specifications or failure to follow the maintenance procedures in X-Rite's accompanying documentation or published specifications; (iii) repair or service by anyone other than X-Rite or its authorized representatives; (iv) the failure of the warranted goods caused by use of any parts or consumables not manufactured, distributed, or approved by X-Rite; (v) any attachments or modifications to the warranted goods that are not manufactured, distributed or approved by X-Rite. Consumable parts and Product cleaning are also not covered by the warranty.

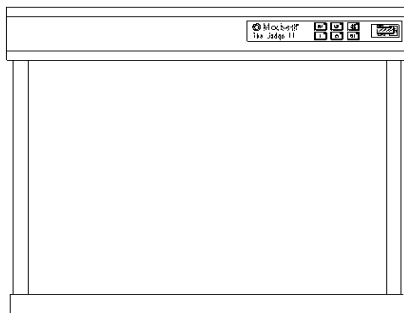
X-Rite's sole and exclusive obligation for breach of the above warranties shall be the repair or replacement of any part, without charge, which within the warranty period is proven to X-Rite's reasonable satisfaction to have been defective. Repairs or replacement by X-Rite shall not revive an otherwise expired warranty, nor shall the same extend the duration of a warranty.

Customer shall be responsible for packaging and shipping the defective product to the service center designated by X-Rite. X-Rite shall pay for the return of the product to Customer if the shipment is to a location within the region in which the X-Rite service center is located. Customer shall be responsible for paying all shipping charges, duties, taxes, and any other charges for products returned to any other locations. Proof of purchase in the form of a bill of sale or receipted invoice which is evidence that the unit is within the Warranty period must be presented to obtain warranty service. Do not try to dismantle the Product. Unauthorized dismantling of the equipment will void all warranty claims. Contact the X-Rite Support or the nearest X-Rite Service Center, if you believe that the unit does not work anymore or does not work correctly.

THESE WARRANTIES ARE GIVEN SOLELY TO BUYER AND ARE IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR APPLICATION, AND NON-INFRINGEMENT. NO EMPLOYEE OR AGENT OF X-RITE, OTHER THAN AN OFFICER OF X-RITE, IS AUTHORIZED TO MAKE ANY WARRANTY IN ADDITION TO THE FOREGOING.

IN NO EVENT WILL X-RITE BE LIABLE FOR ANY OF BUYER'S MANUFACTURING COSTS, OVERHEAD, LOST PROFITS, GOODWILL, OTHER EXPENSES OR ANY INDIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES BASED UPON BREACH OF ANY WARRANTY, BREACH OF CONTRACT, NEGLIGENCE, STRICT TORT, OR ANY OTHER LEGAL THEORY. IN ANY EVENT OF LIABILITY, X-RITE'S MAXIMUM LIABILITY HEREUNDER WILL NOT EXCEED THE PRICE OF THE GOODS OR SERVICES FURNISHED BY X-RITE GIVING RISE TO THE CLAIM.

## INTRODUCTION



The Judge II is a lighting booth that can be used for color evaluation under specified lighting conditions. The Judge II feature:

- balanced light that conforms to or exceeds published international standards for the visual evaluation of color
- an elapsed time meter
- “instant-on” capability to eliminate warm-up delays
- a membrane keypad for rapid switching between illuminants with fingertip control

## SPECIFICATIONS

<b>DIMENSIONS</b>	Height: 22.25 in (56.5 cm) Width: 27 in (68.6 cm) Depth: 22.25 in (56.5 cm)
<b>WEIGHT/SHIPPING WEIGHT</b>	50 lbs 22.7 kg/60 lbs (35.1 kg)
<b>ELECTRICAL POWER</b>	100-117 VAC ± 10% 50/60 Hz 220-240 VAC ± 10% 50/60 Hz
<b>Illuminants</b>	<b>Fluorescent Daylight:</b> 7500 K - North Sky Daylight, 6500 K - Avg. North Sky Daylight, 5000 K – Noon Sky Daylight <b>Cool White Fluorescent:</b> 4150 K Typical Store/Office Lighting (Wide Band Fluorescent) <b>Commercial Fluorescent:</b> 3000 K – Ultralume U30, 4100 K – TL84, 3500 K–Ultralume U35 <b>Illuminant A:</b> 2856 K – Typical Home/Accent Lighting (Incandescent) <b>Ultraviolet:</b> Filtered Near UV
<b>SAFETY COMPLIANCE</b>	Pollution Degree: 2 Usage: Indoor Only Altitude: 2000M Transient Overvoltage: Category II
<b>ENVIRONMENTAL REQUIREMENTS</b>	Operating Temperature: 0°C to 50°C (32°F to 122°F) Storage Temperature: -40°C to 70°C (-40°F to 158°F) Relative Humidity: 90% max (non condensing)

## VIEWING BOOTH ASSEMBLY

1. Remove from storage and identify all items Figure 1. Note the order in which these items are removed. To pack the unit, you will have to replace each item accordingly.
2. Place the Bottom Panel (#1) on a clean, smooth surface.
3. Position the Rear Panel (#3) bottom notches into the Bottom Panel (#1) rear slots. Fasten the Rear Panel to the Bottom Panel by securing it with two thumbscrews.
4. While supporting the Rear Panel, insert the Left Panel (#2) side tabs into the Rear Panel (#3). Fasten the Left Panel to the Bottom Panel by securing it with the thumbscrew.
5. Insert the Right Panel (#4) side notches into the Rear Panel (#3). Fasten the Right Panel to the Bottom Panel by securing it with the thumbscrew.
6. Place a Tube Cap in each of the four (4) corners of the booth by sliding it into the notch(es) located at the top of each panel. Press the Tube Cap down to seat it.
7. Insert all fluorescent bulbs into the Housing Assembly using Figure 2 on the following pages.  
**Caution!** In the following step, DO NOT RELEASE THE HOUSING ASSEMBLY until you are certain that all Tube Caps are properly seated in their sockets. Move your fingers out of the way *before* you release the Assembly.
8. Lift the Housing Assembly up and place it over the four Tube Caps. Rest it on the two rear Tube Caps and gradually seat the Housing Assembly onto the two front Tube Caps in a hinge-like motion. When you are certain that the Housing Assembly is secure, release it. This completes the Assembly. Proceed to the OPERATION section of this manual.

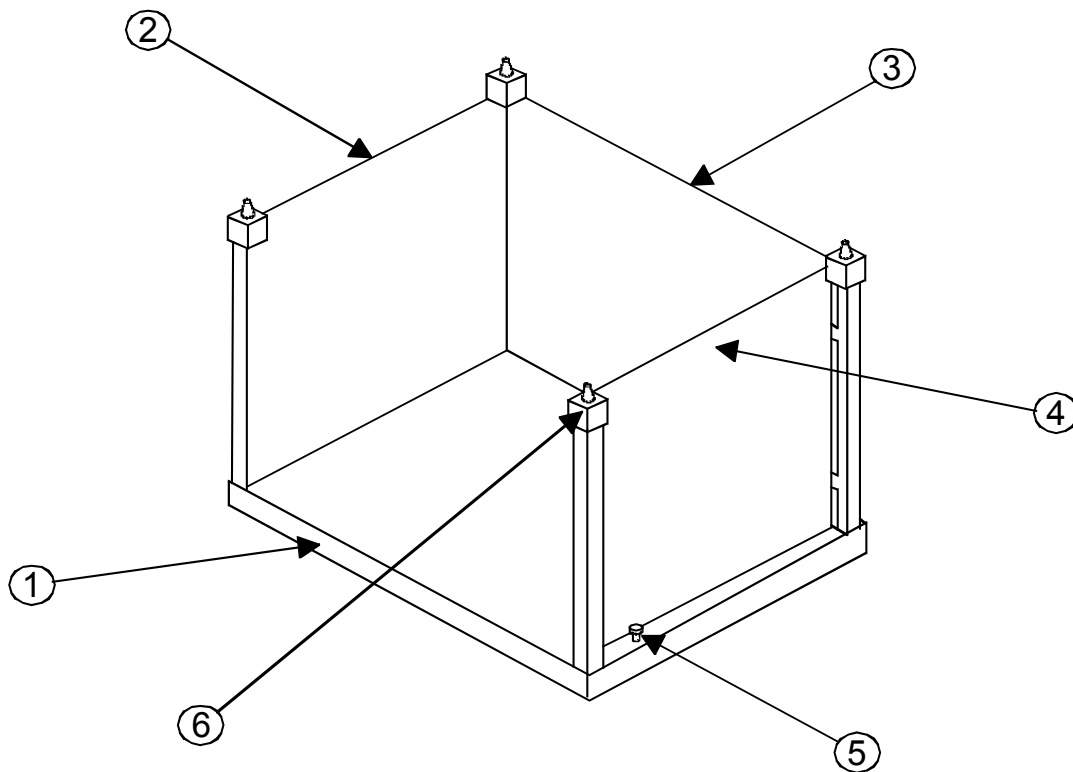


Figure 1 – Viewing Booth Assembly

### Applying Power to the Assembled Unit

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1. Make certain that all lamps are properly seated, and that the unit is placed on a stable, vibration-free surface.
2. Peel off the "CHECK VOLTAGE SETTING PRIOR TO OPERATING UNIT" label located *over* the female power cord receptacle at the rear of the unit. To check the setting, identify the voltage displayed in the Voltage Indicator Window of the fuse drawer.
3. If the voltage displayed is correct, plug the power cord into the female cord receptacle, then plug the cord into a properly rated wall socket. Proceed to "Selecting a Light Source" below.
4. If the voltage displayed is incorrect, proceed to "Changing the Voltage Selection Unit" below.

### Changing the Voltage Selection Unit

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1. To remove the Fuse Drawer, grasp and pinch the two latch ribs located at each side of the drawer and slide the unit out.
2. Note the voltage displayed in the window. If a different voltage is needed, grasp and remove the gray Voltage Selection Unit and turn it to display the desired voltage in the Voltage Indicator Window. Reinsert the Voltage Selection Unit into its housing.
3. With both fuses properly seated, slide the Fuse Drawer back into the unit. Gently press the Fuse Drawer until you hear a distinct click.
4. Reconnect the power cord to the unit and apply power. If the unit shows signs that the fuses may have blown again contact your X-Rite Service Representative.


### Selecting a Light Source

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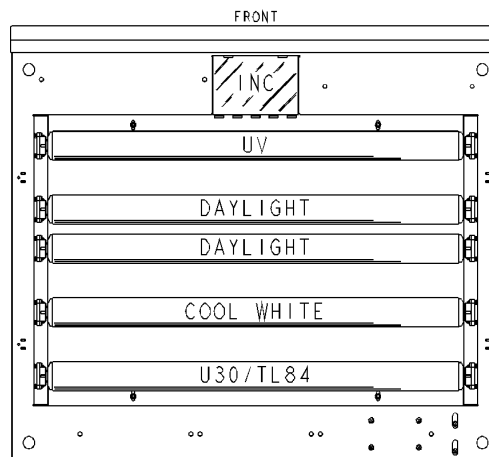
1. Press the button label:
2. DAY for the daylight source;
3. CWF for the cool white fluorescent source;
4. U30/TL84 for the Ultralume or TL84 source installed in your unit;
5. A for the incandescent source;
6. UV for the ultraviolet source.  
**Note:** The ultraviolet source (UV) can be used in combination with any of the light sources or by itself for evaluation of optical brighteners, whitening agents, or fluorescent dyes or pigments.
7. Press OFF to turn one or more selected lamps off.

## Changing Lamps

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 **CAUTION:** Unplug the power cord from the power source *before* you replace the lamps.


1. Check the elapsed time meter located at the right side of the control pad to make certain that 5000 or more hours have elapsed since lamps were installed. We recommend that *all* lamps be changed after 5000 hours of unit operation.
2. Refer to Figure 2 below to follow the replacement configuration. Replace *all* lamps.  
**Note:** The INC, Tungsten Halogen lamp should not be touched with bare fingers because the oil from the skin will reduce lamp life.
3. Verify that the lamps are replaced properly by illuminating each one separately to make certain that the operating switch turns the desired lamp ON and OFF.



**Figure 2 – Lamp Replacement**

## Fuse Check and Replacement Procedure

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 **CAUTION:** Unplug the power cord from the unit *before* checking or replacing the fuses.

1. Locate the Fuse Drawer at the rear of the unit and record the number exposed in the Voltage Indicator Window. This number represents the AC power setting (VAC) and will be one of the following: 100, 120 (117), 220, 240.  
**Note:** In the following step, if the Voltage Selection Unit is removed from the Fuse Drawer, reinsert it properly using step 2 in "Changing the Voltage Selection Unit" on the previous page.
2. To open and remove the Fuse Drawer, grasp and pinch the two latch ribs located at each side of the drawer and slide the unit out so that you do not disturb the gray Voltage Selection Unit.
3. Remove and inspect the two fuses. If there is evidence that one or both fuses have blown, replace them with Slo-blo<sup>®</sup> (5mm x 20mm medium time lag) fuses. Use a 1.6 amp fuse for 100 VAC or 117 VAC units; use a 1 amp fuse for the 220 VAC or 240 VAC units.
4. With both fuses properly seated, slide the Fuse Drawer back into the unit. Before you close it, make certain to look at the Voltage Indicator Window to verify the proper voltage is displayed (the voltage noted in step 2). Gently press the Fuse Drawer until you hear a distinct click.
5. Reconnect the power cord to the unit and apply power. If the unit shows signs that the fuses may have blown again contact your X-Rite Service Representative.

**Parts:** Consult your X-Rite Price List for additional Lamp Kit Options or call your local X-Rite office.

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**Judge II (7500 K) 24" Lamp Kit  
A-LK/JU75**

This kit consists of four (4) F20T12/75 fluorescent daylight lamps. Two (2) required for The Judge II. Sold in packaged of four (4) or as part of a specific lamp kit.

**Judge II (6500 K) 24" Lamp Kit  
A-LK/JU65**

Same as above except for four (4) F20T12/65 lamps.

**Judge II (5000 K) 24" Lamp Kit  
A-LK/JU50**

Same as above except for four (4) F20T12/50 lamps.

**Judge II (7500 K/TL84) Lamp Kit  
A-LK/JU7584**

This kit consists of two (2) F20T12/75 fluorescent daylight lamps, one (1) F20T12/CW cool white fluorescent, one (1) F20T8/TL84 narrow band fluorescent used in Europe, one (1) 75 watt halogen illuminant A, and one (1) F20T12/BLB UV lamp.

**Judge II (6500 K/TL84) Lamp Kit  
A-LK/JU6584**

This kit consists of two (2) F20T12/65 fluorescent daylight lamps, one (1) F20T12/CW cool white fluorescent, one (1) F20T8/TL84 narrow band fluorescent used in Europe, one (1) 75 watt halogen illuminant A, and one (1) F20T12/BLB UV lamp.

**Judge II (U35) 24" Lamp Kit  
A-LK/JUU35**

This kit consists of two (2), F20T12/U35 Ultralume 35 Fluorescent lamp, one (1) SPLIII-510 Instruction sheet, one (1) SD43-SPL-U30 Label, and one (1) SD43-SPL-CWF Label.

**Judge II (5000 K/TL84) Lamp Kit  
A-LK/JU5084**

This kit consists of two (2) F20T12/50 fluorescent daylight lamps, one (1) F20T12/CW cool white fluorescent, one (1) F20T8/TL84 narrow band fluorescent used in Europe, one (1) 75 watt halogen illuminant A, and one (1) F20T12/BLB UV lamp.

**Judge II (7500 K/U30) Lamp Kit  
A-LK/JU75U30**

This kit consists of two (2) F20T12/75 fluorescent daylight lamps, one (1) F20T12/CW cool white fluorescent, one (1) F20T12/U30 narrow band fluorescent used in US retail, one (1) 75 watt halogen illuminant A, and one (1) F20T12/BLB UV lamp.

**Judge II (6500 K/U30) Lamp Kit  
A-LK/JU65U30**

This kit consists of two (2) F20T12/65 X-Rite fluorescent daylight lamps, one (1) F20T12/CW cool white fluorescent, one (1) F20T12/U30 narrow band fluorescent used in US retail, one (1) 75 watt halogen illuminant A, and one (1) F20T12/BLB UV lamp.

**Judge II (5000 K/U30) Lamp Kit  
A-LK/JU50U30**

This kit consists of two (2) F20T12/50 fluorescent daylight lamps, one (1) F20T12/CW cool white fluorescent, one (1) F20T12/U30 narrow band fluorescent used in US retail, one (1) 75 watt halogen illuminant A, and one (1) F20T12/BLB UV lamp.

**Illuminant A Lamp Diffuser** **GM27006570**

**Power Cord (220/240V)** **GM10032100**

**Power Cord (100/117V)** **GM05318311**

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