The definitions of the indications are listed below. Be sure you understand them before reading the instruction manual.

**STANDARD EQUIPMENT**

- Rechargeable battery type
  - 1 No. of LH-4C instrument
  - 1 No. of Model-6 Level Sensor Holder
  - 1 No. of Battery holder BR-74C
  - 1 No. of Battery pack BT-74Q
  - 1 No. of AC/DC converter AD-15
  - 1 No. of Model 6 Laser Sensor (LS-80L)
  - 1 No. of Model 6 Laser Sensor Holder (LS-80L Indicator)
  - 1 No. of Carrying case
  - 1 No. of Instruction manual

- Dry battery type
  - 1 No. of LH-4C instrument
  - 1 No. of Battery holder BR-74C
  - 1 No. of Battery pack BT-74Q
  - 1 No. of Model 6 Laser Sensor (LS-80L)
  - 1 No. of Model 6 Laser Sensor Holder (LS-80L Indicator)
  - 1 No. of Carrying case
  - 1 No. of Instruction manual

 Made sure of the all indications are listed below. Please refer to the operation manual with dry batteries, or as possible.

**EXCEPTIONS FROM RESPONSIBILITY**

- The user of the production is required to follow the operating conditions and make periodic checks of the product's performance.
- The manufacturer, or its representatives, assumes no responsibility for results of faulty or internal usage or misuse including any direct, indirect, consequential damage or any other condition.
- The manufacturer, or its representatives, assumes no responsibility for consequential damage, or loss of profit due to any minor causes, fortuitous, system, failures, etc. This is all the using condition.
- The manufacturer, or its representatives, assumes no responsibility for any damage caused by data lost, data, loss of profit, or loss of profit due to any minor causes, fortuitous, system, failures, etc. This is all the using condition.
- The manufacturer, or its representatives, assumes no responsibility for damage caused by incorrect operation, or actions resulting from unauthorized data restoration.

**POWER SUPPLY**

- Do not use voltage other than the specified power supply voltage. Fire or electrical shock could result.
- Do not short circuit. Heat or ignition could result.
- Do not use damaged power cords, plugs or loose outlets. Fire or electric shock could result.
- Do not place articles such as clothing on the battery charger while charging batteries. Sparks could be induced, leading to fire.
- To prevent shorting of the battery in storage, apply insulating tape or equivalent to the terminals. Otherwise damage could result.
- Do not use the battery or the battery charger if damaged. Resulting shorting could lead to fire or burns.
- Do not connect or disconnect power supply plugs with wet hands. Electric shock could result.
- Do not use the battery charger or any other equipment or purpose. Fire or burns caused by ignition could result.
- Do not use the battery charger or any other equipment or purpose. Fire or burns caused by ignition could result.
- Do not use the battery charger or any other equipment or purpose. Fire or burns caused by ignition could result.

**PRECAUTIONS REGARDING LONG-TERM STORAGE**

- Replace the battery to prolonged period of time or in monsoon months may leak fluid when left in instrument's carrying mechanism.

**LASER SAFETY INFORMATION**

- The RL-H4C is classified as a class 3R Laser Product according to IEC Standard Publication 60825-1 Ed.2.0:

**SAFETY INSTRUCTIONS**

- Use of this product can result in serious injury.
- No use an abrasive cleaner, ether, thinner, or other solvents.
- Use a clean cloth moistened with neutral detergent or water.

**INSTRUCTION MANUAL**

Please read this operator's manual carefully before using this product.

**PRECAUTIONS FOR SAFE OPERATION**

- For the safe use of the product and prevention of injuries to operators and other personnel as well as prevention of property damage, items which should be observed are indicated by an exclamation point (\!).

**DEFINITION OF SYMBOLS**

- This symbol indicates items which must always be performed. Specific details or printed on the right.
- This symbol indicates items which are prohibited. Specific details or printed on the right.
- The symbol indicates items which must not be performed. Specific details or printed on the right.

**GENERAL**

- Do not touch liquid leaking from batteries. Harmful chemicals could cause burns or minor injury or property damage.

**GENERAL PRECAUTIONS**

- Do not install on or near the symbol.
- Do not use the carrying case as a footstool. The case is slippery and unstable so a fall could result.

**POWER SUPPLY**

- Do not touch liquid leaking from batteries. Harmful chemicals could cause burns or minor injury or property damage.

**GENERAL PRECAUTIONS**

- Do not install on or near the symbol.
- Do not use the carrying case as a footstool. The case is slippery and unstable so a fall could result.

**PRECAUTIONS FOR SAFE OPERATION**

- For the safe use of the product and prevention of injuries to operators and other personnel as well as prevention of property damage, items which should be observed are indicated by an exclamation point (!). Differing to that explained in the operator's manual.

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- Do not touch liquid leaking from batteries. Harmful chemicals could cause burns or minor injury or property damage.

**GENERAL PRECAUTIONS**

- Do not install on or near the symbol.
- Do not use the carrying case as a footstool. The case is slippery and unstable so a fall could result.

**ÃOVOID EXPOSURE TO THE LASER BEAM**

- Do not look directly into the laser beam. Do so could cause permanent eye damage.
- Do not stare at the laser beam. Do so could cause permanent eye damage.
- When the instrument is not being used, turn off the power.
- Do not use the carrying case as a footstool. The case is slippery and unstable so a fall could result.
- Operate the instrument with due caution to avoid injuries that may be caused by the laser beam.

**MAINTAIN POWER SOURCES**

- RL-H4C (Replacing dry cell batteries)
- RL-H4C (Rechargeable battery pack)
- For Charging
- RUN charge
- For longer battery life, conform to the suggested charging time to the extent possible.
- Do not perform charging with others except the AC/DC converter AD-15.
- The battery will discharge when stored and should be checked before using with instrument.
- Do not reuse charged battery source every 3 or 6 months and store in a place at 30°C or below. If you allow the battery to become completely discharged, it will have an effect on future charging.

**POWER SUPPLY**

- Do not use voltage other than the specified power supply voltage. Fire or electrical shock could result.
- Do not short circuit. Heat or ignition could result.
- Do not use damaged power cords, plugs or loose outlets. Fire or electric shock could result.
- Do not place articles such as clothing on the battery charger while charging batteries. Sparks could be induced, leading to fire.
- To prevent shorting of the battery in storage, apply insulating tape or equivalent to the terminals. Otherwise damage could result.
- Do not use the battery or the battery charger if damaged. Resulting shorting could lead to fire or burns.
- Do not connect or disconnect power supply plugs with wet hands. Electric shock could result.
- Do not use the battery charger or any other equipment or purpose. Fire or burns caused by ignition could result.
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**GENERAL PRECAUTIONS**

- Do not install on or near the symbol.
- Do not use the carrying case as a footstool. The case is slippery and unstable so a fall could result.

**POWER SUPPLY**

- Do not touch liquid leaking from batteries. Harmful chemicals could cause burns or minor injury or property damage.

**GENERAL PRECAUTIONS**

- Do not install on or near the symbol.
- Do not use the carrying case as a footstool. The case is slippery and unstable so a fall could result.

**POWER SUPPLY**

- Do not touch liquid leaking from batteries. Harmful chemicals could cause burns or minor injury or property damage.

**GENERAL PRECAUTIONS**

- Do not install on or near the symbol.
- Do not use the carrying case as a footstool. The case is slippery and unstable so a fall could result.
**OPERATION**

**How to Operate**

1. Set the instrument to the tripod or smooth surface.
2. Make sure instrument is roughly level.
3. Press power switch (ON).
4. Press power switch on level sensor (ON).
5. Satisfy the precision mode by pressing the On-Grade precision switch.
6. Locate the on-grade position*1 by moving the level sensor up and down.
7. Mark the position of On-Grade index (Top of the level sensor is 40mm [1 9/16"] from index for off-grade).

**Example Operational**

**Height Alert Function**

When the instrument system detects a shock, this function informs the operator of it.

- When the instrument’s installation status (height) is sharply changed by the contact of the operator or the like, the function stops.
- Height level setting keeps operating to prevent the operation security and informs the operator of the situation. The three lamps blink at the same time as the alert time.
- After 1 minute has passed since the function was initiated and the laser beam was emitted, the function is finished.
- The height alert function does not work in the “Manual” mode.

**Aligning Direction of Slope**

In order to set slopes correctly in the direction (refer to the “CHECKS AND ADJUSTMENTS”).

1. Set up the tripod approx. 50m (164 ft) from a wall. Mount the instrument on the tripod facing the X1 side toward the wall. Turn the instrument on and allow auto-leveling to complete.
2. Turn the level sensor in the direction by moving the On-Grade precision switch.
3. By leveling the level sensor mark the center position of laser beam on the wall. (X1)
4. Turn off the instrument.
5. Using the level sensor, mark the instrument 180 degrees clockwise to secure it on the tripod. The X2 side of the instrument faces toward the wall.
6. Turn the laser on again and allow auto-leveling to complete.
7. Mark the laser beam on the wall. (X2)
8. Using the level sensor mark the instrument 180 degrees clockwise to secure it on the tripod. The X2 side of the instrument faces toward the wall.
9. Turn the laser off.
10. Turn the laser on and allow auto-leveling to complete.
11. Mark the laser beam on the wall. (X2)
12. Using the level sensor mark the instrument 180 degrees clockwise to secure it on the tripod. (X2)
13. If the difference value of the nominal beam height values (difference of value X1 and X2) are less than 5mm, adjustments are not needed.
14. Check the Y2 side as the same way.

**How to set the slope by the power is OFF again:**

1. To set the slope before the power is OFF again, turn on the Power switch as shown in the left of the Slope keys. The slope is set and you can adjust the slope in the same way as Step 4.

**CHECKS AND ADJUSTMENTS**

**Horizontal calibration of the laser beam can be checked by the user.**

1. Set up a tripod approx. 50m (164 ft) from a wall. Mount the instrument on the tripod facing the X1 side toward the wall. Turn the instrument on and allow auto-leveling to complete.
2. Turn the instrument on and allow auto-leveling to complete.
3. Move the level sensor in the direction by moving the On-Grade precision switch.
4. Mark the level sensor’s center position of laser beam on the wall. (X1)
5. Turn off the instrument.
6. Using the level sensor, mark the instrument 180 degrees clockwise to secure it on the tripod. The X2 side of the instrument faces toward the wall.
7. While rotating the instrument, avoid changing the height.
8. Turn the laser on and allow auto-leveling to complete.
9. Mark the laser beam on the wall. (X2)
10. Using the level sensor mark the instrument 180 degrees clockwise to secure it on the tripod. (X2)
11. If the difference value of the nominal beam height values (difference of value X1 and X2) are less than 5mm, adjustments are not needed.
12. Check the Y2 side as the same way.

**ERROR CODE**

- Lamp A, B, C and D blink: Battery power error
- Lamp B, C and D blink: Operation procedure
- Lamp B (Green) blinks: Power switch is turned off, rough level the instrument, then turn power on again. Check Battery power error
- Lamp B (Green) lights: Error occurred and the laser beam will return to level.

**SPECIFICATIONS**

- **Laser source**: Diode Laser (Visible, 650nm)
- **Power source**: Power source (Nickel-Metal Hydride battery pack BT-74Q) / at +20°C (+68°F)
- **Height measurement accuracy**: 0.1mm (Height measurement error is ±2mm (±0.08 in))
- **Dimensions**: (L x W x H) 249 x 249 x 175 mm (9.8 x 9.8 x 6.9 in)
- **Weight**: 5 kg (11 lbs)
- **Environmental**: Operating temperature: -20°C to +50°C (-4°F to +122°F)
- **Protection against water and dust**: IP67 (Based on the standard IEC60529)
- **Beam detection precision**: ±0.1mm (±0.04 in)
- **Beam detection window**: (50mm [2"] x 35mm [1.4"])
- **Laser beam height**: 187mm (Height from the instrument’s bottom surface to the center point of laser beam)
- **Dimensions**: (L x W x H) 177 x 96 x 217 mm (7 x 3.8 x 8.5 in)
- **Weight**: 4 kg (9 lbs)
- **Battery life**: Approx. 70 hours (Using with alkaline manganese dry battery) / at +20°C (+68°F)
- **Operating time**: Approx. 60 hours (Using with Nickel-Metal Hydride battery pack BT-74Q / at +20°C (+68°F))
- **Safety standard for laser beam**: CDRH (FDA) Class IIIa, IEC Class 3R
- **Operational conditions**: Power source: 9V DC (using Nickel-Metal Hydride battery pack BT-74Q)
- **Power consumption**: 2W (Max) / 1W (Normal)
- **Power failure**: 10 minutes (Using with Nickel-Metal Hydride battery pack BT-74Q)
- **Temperature sensing**: Integrated temperature sensors
- **Warning indicator**: Buzzer sound (High frequency beep sound)
- **Power switch**: A: Battery power / B: Power switch / C: Auto leveling lamp / D: Manual mode ON lamp

**ERROR CODE**

- **Lamp A**: Battery power
- **Lamp B**: Power switch / Auto leveling lamp
- **Lamp C**: Power indicator / Auto leveling lamp
- **Lamp D**: Manual mode ON lamp
- **Lamp E**: Slope lamp / Slope key
- **Manual mode**: Red key
- **ON-Grade**: Green key
- **Height alert OFF**: Blue key

**CHECKING and adjusting calibration**

1. Set up the instrument toward a wall, press the Power switch while pressing the height alert OFF key. Then the height alert OFF lamp will light, and manual ON mode lamp ON will blink. (X axis is selected.)
2. Press the height alert OFF key to calibrate the X axis. The manual ON mode lamp ON will turn off. When auto leveling finishes, the laser beam will send.
3. Using the level sensor, mark the on-grade height of laser beam on a wall.
4. Rotate the instrument 180 degrees to face X2 side toward a wall.
5. In the same as step 3, make the on-grade height of laser beam on a wall.
6. Press the height alert OFF key to memorize the new laser beam calibration. The height alert OFF lamp will blink. Power will shut off automatically when the calibration memorization is complete.
7. The Y axis adjustment is complete.

**To calibrate the Y axis**

1. Face the Y1 side of the instrument (Control panel side) toward a wall, press the Power switch while pressing the height alert OFF key. Then the height alert OFF lamp will light, and manual ON mode lamp ON will blink. (X axis is selected.)
2. Press the right Slope key once on the control panel. The auto leveling lamp will turn off. (Y axis is selected.)
3. Press the height alert OFF key to calibrate the Y axis. The auto leveling lamp will turn on.
4. Using the level sensor, mark the on-grade height of laser beam on a wall.
5. Rotate the instrument 180 degrees to face Y2 side toward a wall.
6. In the same as step 3, mark the on-grade height of laser beam on a wall.
7. Press the slope key to make adjustment so that the laser beam height may be at the center between the positions of Step 4 and Step 6.
8. Press the height alert OFF key to memorize the new laser beam calibration. The height alert OFF lamp will blink. Power will shut off automatically when the calibration memorization is complete.

**To set the slope before the power is OFF again**

1. To set the slope before the power is OFF again, turn on the Power switch as shown in the left of the Slope keys. The slope is set and you can adjust the slope in the same way as Step 4. (When the Power switch ON without the Slope key cross, the laser beam will return to level.)

**REGULATION**

**FCC NOTE**

- This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. 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.

- Any unauthorized changes or modifications to this equipment would void the user’s authority to operate this device.

- Use of a shielded interface cable with such connectors is recommended and required for connecting to other equipment.

- Contact the equipment supplier or installer to identify the equipment's installation and connection requirements to ensure the equipment meets the necessary emission standards.

- Consult the dealer or an experienced radio/TV technician for help.

- Connect the equipment into an outlet on a circuit different from that to which the television equipment is connected.

- Turn off the equipment and try to correct the interference by one or more of the following measures:

  - Reorient or relocate the receiving antenna.

  - Increase the separation between the equipment and the receiver.

  - Connect the equipment into an outlet on a circuit different from that to which the television equipment is connected.

  - Consult the dealer or an experienced radio/TV technician for help.

**DECLARATION OF CONFORMITY**

- **Make/Model**: RL-H4C
- **Name**: TOPCON CORPORATION
- **Address**: 1-1-7, Higashi Musashino, Musashino-shi, Tokyo, 184-8650 JAPAN
- **Authorized Representative**: Responsible party TOPCON POSTING SYSTEMS INC.
- **Address**: 7679 National Drive Livonia, 48152, U.S.A.
- **Telephone number**: 586-739-8500

- **FCC ID**: RL-H4C

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