Operating/Safety Instructions
Consignes de fonctionnement/sécurité
**Instrucciones de funcionamiento y seguridad**

GTC 400 C

# BOSCH

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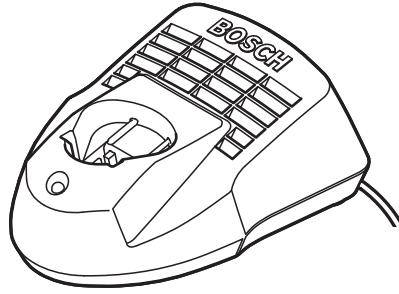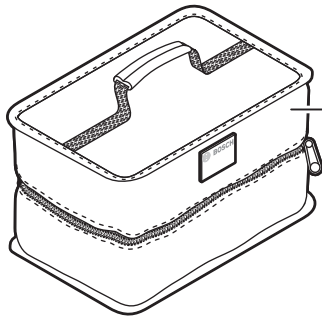**For English Version**
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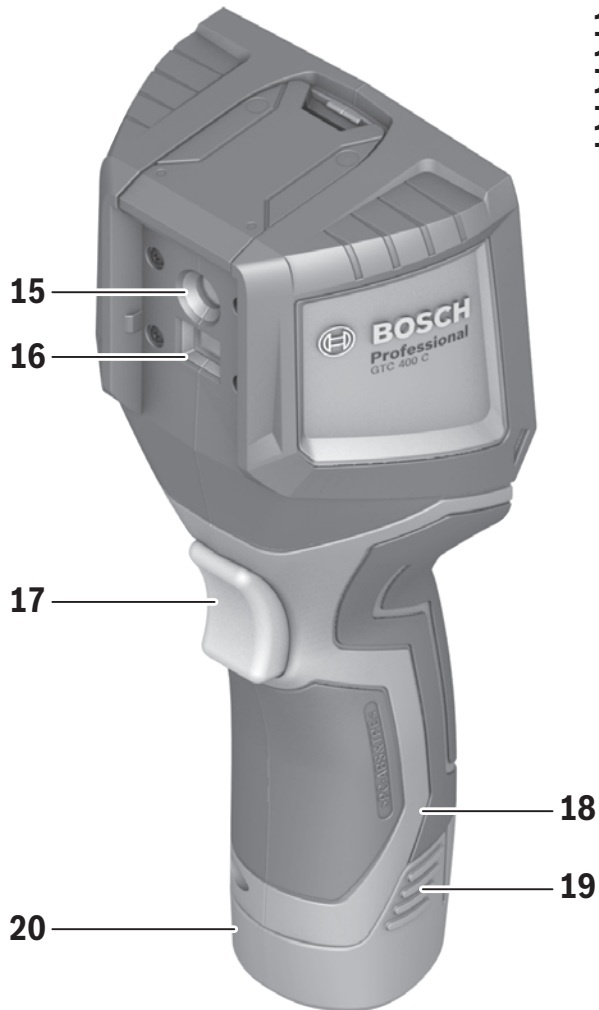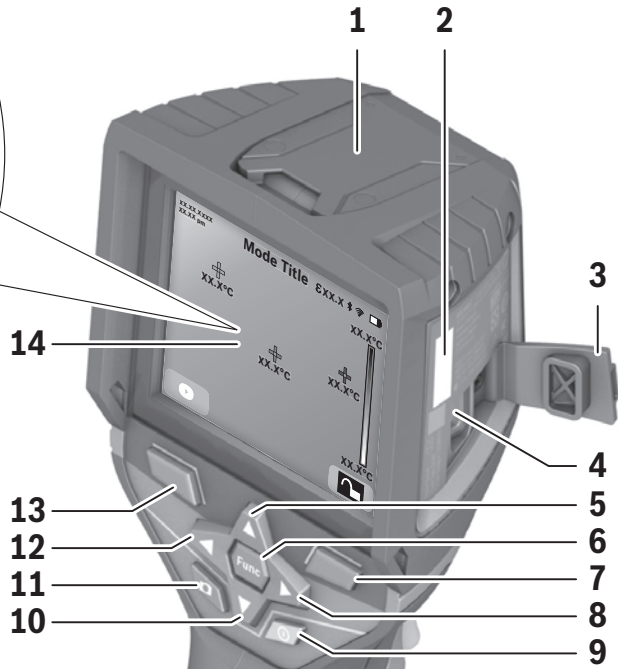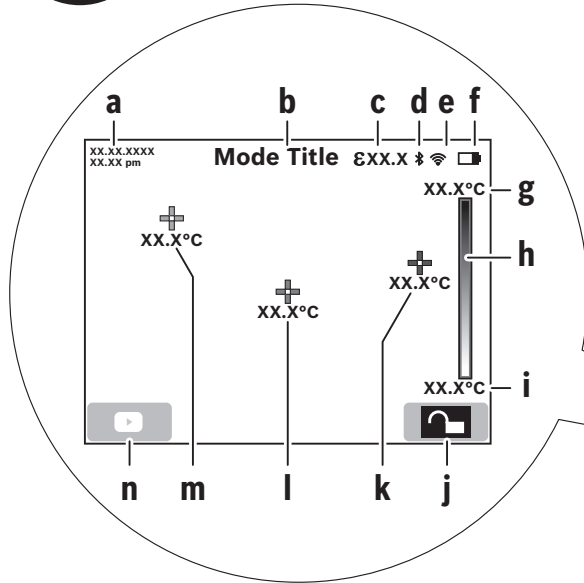
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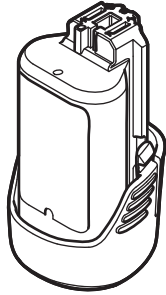
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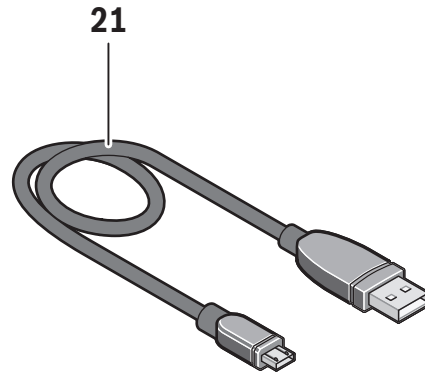
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Safety Symbols

The definitions below describe the level of severity for each signal word. Please read the manual and pay attention to these symbols.

⚠	This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.
(read manual symbol)	Read manual symbol - Alerts user to read manual.
⚠WARNING	WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.
FC	This symbol designates that this thermal camera tool complies with Part 15 of the FCC Rules.

General Safety Rules

⚠**WARNING** **Read all safety warnings, instructions, illustrations and specifications provided with this tool.** Failure to follow all instructions listed below may result in electric shock, fire and/or serious injury.

SAVE ALL WARNINGS AND INSTRUCTIONS FOR FUTURE REFERENCE

The term "tool" in the warnings refers to your mains-operated (corded) tool or battery-operated (cordless) tool.

Use and care

Use the correct tool for your application. The correct tool will do the job better and safer.

Protect the tool, particularly the area around the camera and infrared lens, against moisture and snow. The reception lens could fog up and distort the measurements. Incorrect settings on the tool and other atmospheric influences may make the measurements inaccurate. Objects could be depicted hotter or colder, which may present a danger if touched.

High temperature differences in a thermal image may cause even high temperatures to be shown in a colour associated with low temperatures. Coming into contact with such an area may cause burns.

Temperature measurements will only be correct if the emissivity setting and the emissivity of the object match. Objects could be depicted hotter or colder in temperature and/or colour, which may present a danger if touched.

Do not use the tool if the switch does not turn

it on and off. Any tool that cannot be controlled with the switch is dangerous and must be repaired.

Store idle tool out of the reach of children and do not allow persons unfamiliar with the tool or these instructions to operate the tool. Tools are dangerous in the hands of untrained users.

Maintain tools. Check for misalignment or binding of moving parts, breakage of parts and any other condition that may affect the operation. If damaged, tool repaired before use. Many accidents are caused by poorly maintained tools.

Use the tool, accessories, etc., in accordance with these instructions and in the manner intended for the particular type of tool, taking into account the working conditions and the work to be performed. Use of the tool for operations different from those intended could result in a hazardous situation.

Battery tool use and care

Recharge only with the charger specified by the manufacturer. A charger that is suitable for one type of battery pack may create a risk of fire when used with another battery pack.

Use tool only with specifically designated battery packs. Use of any other battery packs may create a risk of injury and fire.

When battery pack is not in use, keep it away from other metal objects like paper clips, coins, keys, nails, screws, or other small metal objects that can make a connection from one terminal to another. Shorting the battery terminals together may cause burns or a fire.

Under abusive conditions, liquid may be ejected from the battery; avoid contact. If contact accidentally occurs, flush with water. If liquid contacts eyes, additionally seek medical help. Liquid ejected from the battery may cause irritation or burns.

Do not use a battery pack or tool that is damaged or modified. Damaged or modified batteries may exhibit unpredictable behaviour resulting in fire, EXPLOSION or risk of injury.

Do not expose a battery pack or tool to fire or excessive temperature. Exposure to fire or temperature above 265 °F (130 °C) may cause explosion.

Follow all charging instructions and do not charge the battery pack or tool outside the temperature range specified in the instructions. Charging improperly or at temperatures outside the specified range may damage the BATTERY and increase the risk of fire.

Disconnect the battery pack from the tool before making any adjustments, changing accessories, or storing the tool. Such preventive safety measures reduce the risk of starting the tool accidentally.

Do not modify or attempt to repair the tool or the battery pack except as indicated in the instructions for use and care.

Service
Have your tool serviced by a qualified repair person using only identical replacement parts. This will ensure that the safety of the tool is maintained.

Develop a periodic maintenance schedule for tool. When cleaning a tool be careful not to disassemble any portion of the tool since internal wires may be misplaced or pinched or may be improperly mounted. Certain cleaning agents such as gasoline, carbon tetrachloride, ammonia, etc. may damage plastic parts.

Electrical safety
⚠ WARNING **Batteries can explode or leak, cause injury or fire.** To reduce this risk, always follow all instructions and warnings on the battery label and package.

DO NOT expose the tool and battery to rain or wet conditions. Water entering tool will increase the risk of fire and personal injury.

DO NOT short any battery terminals.

DO NOT mix battery chemistries.

Dispose of or recycle batteries per local code.

DO NOT dispose of batteries in fire.

Keep batteries out of reach of children.

Remove batteries if the device will not be used for several months.

Remove the batteries from the tool when not using it for extended periods. When storing for extended periods, the batteries can corrode and self-discharge.

Caution! When using the tool with Bluetooth®, interference with other devices and systems, airplanes and medical devices (e.g., cardiac pacemakers, hearing aids) may occur. Also, the possibility of humans and animals in direct vicinity being harmed cannot be completely excluded. Do not use the tool with Bluetooth® in the vicinity of medical devices, petrol stations, chemical plants, areas where there is danger of explosion, and areas subject to blasting. Do not use the tool with Bluetooth® in airplanes. Avoid operation in direct vicinity of the body over longer periods.

The tool is equipped with a radio interface. Local operating restrictions, e.g. in airplanes or hospitals, are to be observed.

Prevent unintentional starting. Ensure the switch is in the off-position before inserting batteries. Accidental energizing tool that have the switch on invites accidents.

⚠ WARNING **Chemical Burn Hazard. Keep lithium button/coin batteries away from children.** This product contains a lithium button/coin cell battery. If a new or used lithium button/coin cell battery is swallowed or enters the body, it can cause severe internal burns and can lead to death in as little as 2 hours. Always completely secure the battery compartment. If the battery compartment does not close securely, stop using the product, remove the batteries, and keep it away from children. If you think batteries might have been swallowed or placed inside any part of the body, seek immediate medical attention.

FCC Caution

The manufacturer is not responsible for radio interference caused by unauthorized modifications to this equipment. Such modifications could void the user's authority to operate the equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1) This device may not cause harmful interference, and

2) This device must accept any interference received, including interference that may cause undesired operation.

NOTE! This equipment has been tested and found to comply with the limits for a Class B digital devices, 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 instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to 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 receiver.

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

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

"Exposure to Radio Frequency (RF) Signals: The wireless device is a radio transmitter and receiver. It is designed and manufactured not to exceed the emission limit for exposure to radio frequency (RF) energy set by the Ministry of Health (Canada), Safety Code 6. These limits are part of comprehensive guidelines and established permitted levels of RF energy for the general population.

Industry Canada (IC)

This device complies with Industry Canada's licence-exempt RSSs. Operation is subject to the following two conditions:

(1) This device may not cause interference; and

(2) This device must accept any interference, including interference that may cause undesired operation of the device.

Intended Use

This thermal imaging camera is designed for the contactless measurement of surface temperatures.

The displayed thermal image shows the temperature distribution of the area captured by the infrared lens and therefore enables temperature deviations to be depicted in different colors.

When used correctly, this makes it possible to examine areas and objects in a contactless manner for temperature differences and discrepancies in order to make components and/or any weaknesses visible, including:

– Thermal insulation and other types of insulation (e.g. locating thermal bridges)

– Active heating and hot water pipes (e.g. underfloor heating) in floors and walls

– Overheated electrical components (e.g. fuses or terminals)

– Machine parts (e.g. overheating due to faulty ball bearings)

The tool must not be used for temperature measurement on persons and animals or for other medical purposes.

The tool is not suitable for surface temperature measurement of gases or liquids.

Features

The numbering of the product features shown refers to the illustration of the tool on the graphic page.

1 Protective cap for visual camera and infrared sensor

2 Serial number

3 Cover, micro USB port

4 Micro USB port

5 Up arrow button [▲]

6 Measuring functions button **[Func]**

7 Switching temperature scale between automatic and fixed/right-hand function button

8 Right-hand arrow button **[▶]**

9 On/Off button **[⏻]**

10 Down arrow button **[▼]**

11 Save button

12 Left-hand arrow button **[◀]**

13 Gallery button/left-hand function button

14 Display

15 Visual camera

16 Infrared sensor area

17 Freeze measurement/continue measuring button

18 Battery port

19 Release button for battery pack

20 Battery pack*

21 Micro USB cable

22 Protective pouch*

Display Elements

a Date/time

b Measuring function

c Emissivity display

d Indicator for Bluetooth® connection

e WiFi switched on/off indicator

f Charge-control indicator

g Display of maximum surface temperature in the measurement range

h Scale

i Display of minimum surface temperature in the measurement range

j Scale lock symbol

k Hotspot display (example)

l Crosshairs with temperature display

m Coldspot display (example)

n Gallery symbol

*The accessories illustrated or described are not included as standard delivery.

Technical Data

Thermal imaging camera	GTC 400 C
Article number	3 601 K83 1..
Resolution of infrared sensor	160 x 120
Thermal sensitivity	<50mK
Spectral range	8–14 µm
Field of view (FOV)	53 x 43°
Focus distance	≥1 ft (≥0.3m)
Focus	Fixed
Surface temperature measurement range	14...+752 °F (−10...+400 °C)
Measuring accuracy (typical) Surface temperature[1] −10...+10 °C 10...100 °C >+100 °C	 5.4 °F (3 °C) 5.4 °F (3 °C) 3 %
Display type	TFT
Display size	3.5"
Display resolution	320 x 240
Image format	.jpg
Images saved per saving process	1 x thermal image (screenshot) 1 x real visual image incl. temperature values (metadata)
Number of images in internal image memory (typical)	500
Integrated visual camera	•
Battery / Charger list −Rechargeable Batteries (Bosch 10.8 V/12 V − Max lithium-ion pack) −Chargers	BAT414 2.0 Ah, BAT420 4.0 Ah GBA12V30 3.0 Ah, GBA12V60 6.0 Ah BC330, BC430 GAX1218V-30, GAL 12V-20
Battery life 10.8 V/12 V - Max	5.0 h
USB port	1.1
Blue Hound Bluetooth® module power supply − Button cell − Battery service life, approx.	 CR2450 (3 V lithium battery) 60 months
Bluetooth®	Bluetooth® 4.2 (Low Energy)
Max. Bluetooth® transmission power	3.2mW
Frequency band Bluetooth®	2.402 − 2.480 GHz
Wireless connectivity	WiFi
Max. WiFi transmission power	30mW

Thermal imaging camera	GTC 400 C
WiFi operating frequency range	2.400–2.483 GHz
Weight according to EPTA-Procedure 01:2014	0.54 kg
Dimensions (length x width x height)	9.2" x 3.7" x 2.5" (233 x 95 x 63 mm)
Degree of protection (excluding battery compartment)	IP 53
Permitted environmental conditions – Charging temperature – Operating temperature[2] – Storage temperature – Relative humidity (non-condensing)	32....+113 °F (0...+45 °C) 14....+113 °F (−10...+45 °C) -4....+158 °F (−20...+70 °C) 20... 80 %

The tool can be clearly identified with the serial number **2** on the type plate.

1) at an ambient temperature of 20–23 °C and an emissivity of >0.999, measuring distance: 0.3m, operating time: >5 min.

2) limited performance at temperatures <0 °C.

Technical data determined with battery from delivery scope.

Definitions

Infrared heat radiation

Infrared heat radiation is electromagnetic radiation emitted by every body. The amount of radiation depends on the temperature and the emissivity degree of the body.

Emissivity Degree

The emissivity degree of an object depends on the material and the structure of its surface. It states how much infrared heat radiation the object emits compared to an ideal heat emitter (black body, emissivity degree = 1).

Thermal Bridge

A thermal bridge is an object that undesirably transmits heat outwards or inwards, therefore differing significantly from the temperature of the rest of a wall or from the desired temperature of a wall.

As the surface temperature at thermal bridges is lower than in the rest of the room, the risk of mold increases significantly at these locations.

Reflected temperature/reflectivity of an object

The reflected temperature is the thermal radiation that is not emitted by the object itself. Depending on the structure and material, background radiation is reflected in the object to be measured, therefore distorting the actual temperature result.

Distance from the object

The distance between the object being measured and the measuring tool influences the captured area size per pixel. You can capture increasingly large objects as the distance from the object becomes greater.

Distance (m)	Size of infrared pixels (mm)	Infrared range width x height (m)
0.5	3	−0.5 x 0.4
1	6	−1 x 0.75
2	12	2.05 x 1.5
5	30	5.1 x 3.8

Blue Hound

The built-in Bluetooth® Low Energy Module enables you to personalize and check the status of your measuring tool, as well as transfer settings and data using Bluetooth® wireless technology.

Blue Hound Bluetooth® module power supply

The measuring tool is fitted with a button cell so that it can still be detected by a mobile device using Blue Hound without having a battery pack **20**.

You can find further information directly in the app from Bosch.

Data Transmission

You can switch the Blue Hound Bluetooth® module on and off in the tool settings. It then emits a continuous signal.

The transmission interval of the module is eight seconds. Depending on ambient conditions, up to three transmission intervals may be required before the tool is detected.

Note: Switch Blue Hound off in areas where the transmission of radio waves is prohibited, for example on airplanes.

Registering and setting up the app/web-based application

Before you can use Blue Hound, you need to register online.

To do this, open the website After registration is complete, you will receive your access information.

Download the app Blue Hound from the relevant app store (Apple App Store, Google Play Store) or access the web application at where you can log in using your access details.

You can now create and manage your inventory using the app/web-based application.

Note: First, complete the tutorial for the app/web-based application.

This will provide you with a better overview of the procedure for creating the inventory and using the software.

Power Supply

The tool can be operated using a Bosch Li-ion rechargeable battery.

Operation with Battery Pack (see figure C)

⚠WARNING **Use only Bosch rechargeable lithium-ion battery packs listed in the technical data section of this manual.** Use of other battery packs may increase the risk of fire, personal injury and property damage.

⚠WARNING **Remove the batteries from the tool when not using it for extended periods.** When storing for extended periods, the batteries can corrode and self-discharge.

Note: The battery pack is supplied partially charged. To ensure full capacity of the battery pack, completely charge the battery pack in the battery charger before using for the first time.

⚠WARNING **Use only Bosch chargers listed in the technical data section of this manual.** Use of other chargers may increase the risk of fire, personal injury and property damage.

The lithium-ion battery pack can be charged at any time without reducing its service life. Interrupting the charging procedure does not damage the battery pack.

The lithium-ion battery is protected against deep discharge by the Electronic Cell Protection (ECP). A protective circuit switches the laser level off when the battery is drained.

• **Following the automatic shut off of the tool, do not continue to press the On/Off button.** The battery can be damaged.

To **insert** the charged battery pack **20**, slide it into the battery port **18** until you feel it lock into position. Do not use force.

To **remove** the battery pack **20**, press the unlocking buttons **19** and pull the battery pack out of the battery port **18**. Do not use force.

Battery Status Indicator

The battery status indicator **f** on the display shows the charging state of the batteries or battery pack **20**.

Indication	Capacity
🔋	> 2/3
🔋	≤ 2/3
🔋	≤ 1/3
🔋	≤ 10 %
🔋	Changing the Batteries or Battery Pack

- **Protect the measuring tool against moisture and direct sun light.**

- **Do not subject the measuring tool to extreme temperatures or variations in temperature.** As an example, do not leave it in vehicles for a long time. In case of large variations in temperature, allow the measuring tool to adjust to the ambient temperature before putting it into operation. In case of extreme temperatures or variations in temperature, the accuracy of the measuring tool can be impaired.

- **Make sure that the tool is correctly acclimatized.** In the event of severe temperature fluctuations or environmental conditions which vary to a large degree, the measurement accuracy of the measuring tool may be impaired until it is fully acclimatized again.

- **Avoid hard knocks to the tool or dropping it.** After severe external influences and in the event of abnormalities in the functionality, you should have the measuring tool checked by an authorized Bosch after-sales service agent.

Initial Operation

Switching On and Off

To take a measurement, fold the protective cap **1** upwards. **Make sure that the infrared measuring area is not closed off or covered while working.**

To **switch on** the tool, press the On/Off button **9**. A start sequence will appear in the display **14**. After the start sequence, the measuring tool will immediately begin to measure and will measure continuously until it is switched off.

Note: In the first few minutes, the measuring tool may self-calibrate several times, as the sensor temperature and ambient temperature have not yet been brought into line. Performing calibration again enables precise measurement. The thermal image freezes briefly during calibration.

To **switch off** the tool, press the On/Off button again. The measuring tool saves all settings and then switches itself off. Close the protective cap **1** to transport the measuring tool safely.

In the "Settings" menu, you can choose

whether and after how much time the measuring tool automatically switches off (see "Switch-off time", page 15).

If the battery or the measuring tool is not within the operating temperature range stated in the Technical Data, the measuring tool will shut down automatically after a brief warning (see "Troubleshooting – Causes and Corrective Measures", page 18). Allow the measuring tool to reach to the correct temperature and then switch it back on.

To save energy, only switch the measuring tool on when you are using it.

Preparing for Measurement

Setting the Emissivity Degree for Surface-temperature Measurements

The emissivity degree of an object depends on the material and the structure of its surface. It indicates whether an object (in comparison with other objects with the same temperature) emits much or little infrared heat radiation.

To determine the surface temperature, the tool performs a contactless measurement of the natural infrared thermal radiation emitted by the object at which the tool is aimed. To ensure correct measurement, the emissivity setting on the measuring tool must be checked **before every measurement** and adapted to the measuring object if necessary.

You can select one of the preset emissivity levels or enter an exact numerical value. Adjust the required emissivity using the **"Measurement"** >**"Emissivity"** menu (see page 15).

⚠ WARNING Temperature measurements will only be correct if the emissivity setting and the emissivity of the object match.

Differences in color may be caused by different temperatures and/or different emissivity levels. If the emissivity levels are very different, the depicted temperature differences may differ considerably from the actual temperature differences.

If there are multiple objects made of different materials or that have different structures in the measurement range, the displayed temperature values are only conclusive for the objects that match the emissivity setting.

For all other objects (with different emissivity levels), the displayed color differences can be used as an indication of temperature relationships.

Material	Emissivity 32 ºF to 212 ºF (0 ºC to 100 ºC)
Concrete	0.93
Plaster/mortar	0.93
Roofing tiles	0.93
Roofing felt	0.93
Radiator paint	0.93
Wood	0.91
Linoleum	0.88
Paper	0.89

Notes on the Measuring Conditions

Highly reflective or shiny surfaces (e.g. shiny tiles or polished metals) may distort or impair the results shown. If necessary, mask the surface to be measured with a dark, matt adhesive tape that conducts heat well. Allow the tape to acclimatize briefly on the surface.

Make sure that a favorable measuring angle is used on reflective surfaces in order to ensure that the thermal radiation reflected by other objects does not distort the result. For example, the reflection of your own body heat may interfere with the measurement when measuring head-on from a perpendicular position. On a level surface, the outline and temperature of your body could therefore be displayed (reflected value), and these values do not correspond to the actual temperature of the measured surface (emitted value or real value of the surface). Measuring through transparent materials (e.g. glass or transparent plastics) is fundamentally not possible.

The accuracy and reliability of the measuring results increase with better and more stable measuring conditions.

Infrared temperature measurement is impaired by smoke, vapor/ high air humidity or dusty air.

Information for achieving improved measurement accuracy:

– Get as close as possible to the measuring object to minimize interfering factors between you and the surface to be measured.

– Ventilate indoor areas prior to measurement, especially when the air is contaminated or extremely steamy. After ventilating, allow the room to acclimatize for a while until the usual temperature has been reached again.

Assigning temperatures on the basis of the scale

A scale is shown on the right-hand side of the display. The values at the top and bottom end are oriented to the maximum and minimum temperature recorded in the thermal image. Colors are assigned to temperature values with a uniform distribution in the image (linearly).

Different shades can therefore be used to assign temperatures within these two limit values. For example, a temperature that is exactly between the maximum and minimum value can be assigned to the center color range of the scale.

To determine the temperature of a specific area, move the measuring tool so that the crosshairs with temperature display **I** are aimed at the required point or area.

In the automatic setting, the color spectrum of the scale is always distributed linearly (= uniformly) across the entire measurement range between the maximum and minimum temperatures.

The thermal imaging camera displays all measured temperatures in the measurement range in relation to one another. If heat is displayed as blue in the color palette in an area, for example in a color representation, this means that the blue areas are among the colder measured values in the current measurement range. However, these areas may be in a temperature range that could cause injuries in certain circumstances. You should therefore always note the temperatures displayed on the scale or at the crosshairs themselves.

Functions

Adjusting the color display

Depending on the measurement conditions, different color palettes can make it easier to analyze the thermal image and show objects or circumstances more clearly in the display. This does not affect the measured temperatures. Only the way in which the temperature values are shown changes.

To change the color palette, remain in measuring mode and press the right-hand **8** or left-hand **12** arrow button.

Superimposition of thermal image and real image

For improved orientation (= local assignment of the thermal image displayed), with matched temperature ranges, a visual real image can additionally be inserted.

Note: The superimposition of the real image and thermal image is accurate at a distance of 1.08 ft (0.55 m). If the tool is closer to or further away from the object being measured, this may result in misalignment of the real image and thermal image.

The thermal imaging camera offers you the following options:

- **Complete infrared image**
  Only the thermal image is displayed.
- **Image in image**
  The thermal image displayed is cropped and the surrounding area is shown as a real image. This setting improves the local assignment of the measurement range.
- **Transparency**
  The thermal image displayed is placed on top of the real image in such a way that it is slightly transparent. This enables improved detection of objects.

You can adjust the setting by pressing the up **5** or down **10** arrow buttons.

Fixing the scale

The color distribution in the thermal image is adjusted automatically but can be fixed by pressing the right-hand function button

7. This enables a comparison to be made between thermal images taken under different temperature conditions (e.g. when checking several rooms for thermal bridges).

To switch the scale back to automatic, press the right-hand function button **7** again. The temperatures are now dynamic again and adapt to the measured minimum and maximum values.

Measuring functions

To call up further functions which may be helpful for the display, press the **"Func"** button **6**. Use the right-hand/left-hand buttons to navigate through the displayed options to select a function. Select a function and press the **"Func"** button **6** again.

The following measuring functions are available:

- **"Automatic"**
  Colors are distributed automatically in the thermal image
- **"Heat detector"**
  Only the warmer temperatures in the measurement range are displayed as a thermal image in this measuring function.

The area outside these warmer temperatures is displayed in greyscale as a real image so that colored objects are not wrongly associated with temperatures (e.g. red cable in the control cabinet when looking for overheated components). Adjust the scale using the up **5** and down **10** buttons. This expands or reduces the temperature range shown.

The tool continues to measure minimum and maximum temperatures and displays these at the ends of the scale. You can, however, control which temperature range is shown in color as a thermal image.

- **"Cold detector"**
  Only the colder temperatures in the measurement range are displayed as a thermal image in this measuring function. The area outside these colder temperatures is displayed in greyscale as a real image so that colored objects are not wrongly associated with temperatures (e.g. blue

window frame when looking for faulty insulation). Adjust the scale using the up **5** and down **10** buttons. This expands or reduces the temperature range shown. The tool continues to measure minimum and maximum temperatures and displays these at the ends of the scale. You can, however, control which temperature range is shown in colour as a thermal image.

– **"Manual"**
If greatly deviating temperatures are measured in the thermal image (e.g. radiator as a hot object when searching for thermal bridges), the available colors are distributed among a large number of temperature values in the range between the maximum and the minimum temperature. This can result in a situation where subtle temperature differences can no longer be shown in detail. To obtain a detailed depiction of the focus temperature, switch to **"Manual"** mode and set the maximum and the minimum temperature. Doing this enables you to set the temperature range that is relevant to you and in which you would like to detect subtle differences. The **Reset** setting automatically readjusts the scale to the measured values in the infrared sensor's field of view.

Main Menu

To access the main menu, press the **"Func"** button **6** to call up the measuring functions. Now press the right-hand function button **7**.

– **"Measurement"**
  – **"Emissivity" c:**
    A selection of saved emissivity levels is available for some of the most common materials. Select the appropriate material in the **"Material"** menu item. The corresponding emissivity is displayed in the line below. If you know the exact emissivity of the object to be measured, you can also set it as a numerical value in the **"Emissivity"** menu item.

  – **"Reflected temperature":**
    Setting this parameter improves the accuracy of measuring results, especially with low-emissivity (= high-reflection) materials. The reflected temperature normally corresponds to the ambient temperature. If there are objects with

greatly deviating temperatures close to highly reflective objects which could affect the measurement, this value should be adjusted.

– **"Display"**
  – **"Hotspot" k: "ON/OFF"**
    In this function, the hottest point (= measuring pixel) in the measurement range is automatically highlighted by red crosshairs in the thermal image. This can help you to detect a critical point, e.g. to locate a loose terminal in the control cabinet.

  – **"Cold spot" m: "ON/OFF"**
    The coldest point (= measuring pixel) in the measurement range is automatically highlighted by blue crosshairs in the thermal image. This can help you to detect a critical point, e.g. to locate a leak in insulation.

  – **"Crosshairs" l: "ON/OFF"**
    The crosshairs are displayed in the centre of the thermal image and show you the measured temperature value at this point.

  – **"Scale" h: "ON/OFF"**

– **"WiFi": "ON/OFF"**
  (see "Data Transmission", page 16)

– **"Blue Hound": "ON/OFF"**
  (see "Blue Hound", page 10)

– **"Tool"**
  – **"Language"**
    Under this menu item, you can change the language for all displays.

  – **"Time & Date" a**
    To change the date and time in the display, open the **"Time & Date"** submenu. In this submenu you can also change the date and time format. To exit the **"Time & Date"** submenu, press either the left-hand function button **13** under the tick symbol to save the settings or the right-hand function button **7** under the cross symbol to discard the changes.

  – **"Audio signals": "ON/OFF"**
    Under this menu item, you can switch the audio signals on or off.

  – **"Switch-off time"**
    Under this menu item, you can select the time interval after which the tool will automatically switch off if no buttons

are pressed. You can also deactivate the automatic switch-off by selecting the **"Never"** setting.

- **"Delete all images"**
  Under this menu item, you can delete all the files in the internal memory at once. Press the right-hand arrow button **8** for "**more** ..." to enter the submenu. Then press either the left-hand function button **13** under the tick symbol to delete all files, or the right-hand function button **7** under the cross symbol to cancel the operation.

- **"Tool information"**
  Under this menu item, you can access information about the tool. There you can find the serial number of the tool and the installed software version.

You can also press button **17** to exit any menu and return to the standard display screen.

Documenting measurements

Saving measurements

The tool begins to take measurements as soon as it is switched on and does so continuously until it is switched off.

To save an image, point the camera at the desired measuring object and press the "Save" button **11**. The image is saved in the camera's internal memory. Alternatively, press the "Freeze measurement" button **17**. The measurement is frozen and shown in the display. This enables you to take as much time as you need to look at the image. If you do not wish to save the frozen image, press button **17** to return to measuring mode. If you wish to save the image in the camera's internal memory, press the "Save" button **11**.

Calling up saved images

Proceed as follows to call up saved thermal images:

- Press the left-hand function button **13**. The most recently saved photo now appears in the display.
- Press the right-hand **8** or left-hand **12** arrow button to switch between the saved thermal images.

Deleting saved images

Go to the gallery view to delete individual thermal images:

- Press the right-hand function button **7** under the waste paper basket symbol.
- Confirm the operation by pressing the left-hand function button **13** or terminate the deletion process by pressing the right-hand function button **7** under the cancel symbol.

Delete all images

In the **"Delete all images"** menu, you can delete all the files in the internal memory at once.

Press the **"Func" 6** button to call up the measuring functions. Now press the right-hand function button **7** and select **"Tool"** > **"Delete all images"**. Press the right-hand arrow button **8** to enter the submenu. Then press either the lefthand function button **13** under the tick symbol to delete all files, or the right-hand function button **7** under the cross symbol to cancel the operation.

Data Transmission

Data Transmission via USB Interface

Open the cover on the micro USB port **3**. Connect the micro USB port on the tool to your PC or laptop using the micro USB cable provided.

Now press button **9** to switch on the thermal imaging camera.

Open the file browser and select the **"BOSCH GTC 400 C"** drive. The saved JPG files can be copied, moved to your computer or deleted from the internal memory of the tool.

As soon as you have ended the required operation, disconnect the drive following the standard procedure and then use button **9** to switch the thermal imaging camera off again.

Remove the micro USB cable during the measurement operation and close the cover **3**.

Attention: Always disconnect the drive from your operating system first (eject drive), as failure to do so may damage the thermal imaging camera's internal memory.

Always keep the cover of the USB interface closed so that dust and splashes cannot enter the housing.

Note: Only connect the tool to a PC or notebook. The tool could be damaged if you connect it to a different device.

Note: The micro USB interface can only be used for data transmission – it is not suitable for charging batteries.

Post-editing the thermal images

You can post-edit the saved thermal images on your computer if it uses a Windows operating system. To do so, download the GTC Transfer software from the product page for the thermal imaging camera at

Data transmission via WiFi

The tool is equipped with a WiFi module which enables the saved images to be wirelessly transmitted from your thermal imaging camera to a mobile device.

The Bosch Thermal App is required as the software interface for this. You can download this from the store for your end device type:

In addition to wirelessly transmitting your images, the Bosch Thermal App makes it possible for you to use an extended range of functions and facilitates post-editing and forwarding of measured data (for example via e-mail). Information about system requirements for a WiFi connection can be found on the Bosch website at

To activate or deactivate the WiFi connection on the tool, call up the main menu, use the buttons to select **"WiFi"** and activate or deactivate it. e will appear on the display. Ensure that the WiFi interface is activated on your mobile device.

The connection between the mobile device and the tool can be established after the Bosch application has been started (if WiFi modules are activated). To do this, follow the instructions in the Bosch Application.

Maintenance and Service

⚠ WARNING Check the tool each time before use. In case of visible damage or loose components inside the measuring tool, safe function can no longer be ensured.

Keep the tool clean at all times.

Do not immerse the tool into water or other fluids.

Do attempt to remove dust from the sensor, camera or reception lens using pointing objects, and do not wipe over the camera and reception lens (risk of scratching).

If the tool should fail despite the care taken in manufacturing and testing procedures, repair should be carried out by an authorized after-sales service center for Bosch power tools. Do not open the measuring tool yourself.

In all correspondence and spare parts orders, please always include the 10-digit article number given on the type plate of the tool.

ENVIRONMENT PROTECTION

Recycle raw materials & batteries instead of disposing of waste. The unit, accessories, packaging & used batteries should be sorted for environmentally friendly recycling in accordance with the latest regulations.

Troubleshooting – Causes and Corrective Measures

In the event of a fault, the tool will restart and can then continue to be used. If the fault persists, the following overview may help you.

Error	Cause	Corrective Measure
Measuring tool cannot be switched on.	Battery pack or batteries empty	Charge the battery pack or change the batteries.
🔋🌡	Battery too warm or too cold	Allow the battery to reach the correct temperature or change it.
📷🌡	Measuring tool too warm or too cold	Allow the measuring tool to reach the correct temperature.
💾⚠	Image memory fault	Format the internal memory by deleting all images (see "Delete all images", page 16). If the problem persists, send the measuring tool to an authorized Bosch after-sales service agent.
	Image memory full	If required, transfer the images to another storage medium (e.g. computer or notebook). Then delete the images in the internal memory.
📷🔧⚠	Measuring tool is fault	Send the measuring tool to an authorized Bosch after-sales service agent.
Measuring tool cannot be connected to a computer.	Measuring tool not recognized by computer	Check whether the driver on your computer is up to date. It may be necessary to have a newer operating system version on your computer.
	Micro USB connection or micro USB cable fault	Check whether the measuring tool can be connected to a different computer. If not, send the measuring tool to an authorized Bosch after-sales service agent.

LIMITED WARRANTY OF BOSCH LASER AND MEASURING TOOL PRODUCTS

Robert Bosch Tool Corporation ("Seller") warrants to the original purchaser only, that all Bosch lasers and measuring tools will be free from defects in material or workmanship for a period of one (1) year from date of purchase. Bosch will extend warranty coverage to two (2) years when you register your product within eight (8) weeks after date of purchase. Product registration card must be complete and mailed to Bosch (postmarked within eight weeks after date of purchase), or you may register on-line at If you choose not to register your product, a one (1) year limited warranty will apply to your product.

30 Day Money Back Refund or Replacement -

If you are not completely satisfied with the performance of your laser and measuring tools, for any reason, you can return it to your Bosch dealer within 30 days of the date of purchase for a full refund or replacement. To obtain this 30-Day Refund or Replacement, your return must be accompanied by the original receipt for purchase of the laser or optical instrument product. A maximum of 2 returns per customer will be permitted.

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THIS LIMITED WARRANTY DOES NOT APPLY TO OTHER ACCESSORY ITEMS AND RELATED ITEMS. THESE ITEMS RECEIVE A 90 DAY LIMITED WARRANTY.

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