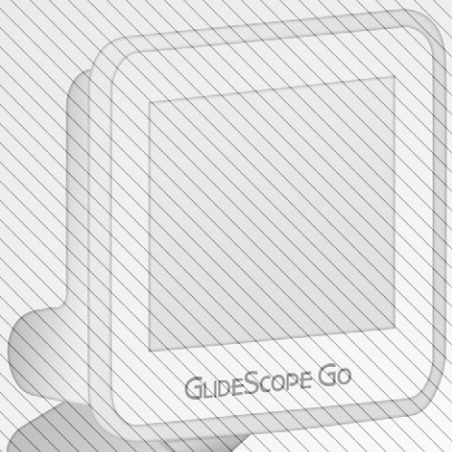
VERATHON®



GlideScope Go

Operations & Maintenance Manual EN
Manuel d'utilisation et de maintenance FR
Bedienungs- und Wartungshandbuch DE
Manual de funcionamiento y mantenimiento ES
Manuale di funzionamento e manutenzione IT
Manual de Manutenção e Operações PT
Betjenings- og vedligeholdelsesvejledning DA
Bedienings- en onderhoudshandleiding NL
Drifts- og vedlikeholdshåndbok NO
Drift- och underhållshandbok SV
Návod k provozu a údržbě CS
Kasutus- ja hooldusjuhend ET

CE

0900-4788 REV-10

CONTACT INFORMATION

To obtain additional information regarding your system, please contact Verathon Customer Care or visit verathon.com/support.

Headquarters	European Rep	Manufacturer
Verathon Inc. 20001 North Creek Parkway Bothell, WA 98011 U.S.A. Tel: +1 800 331 2313 (US/Canada) Tel: +1 425 867 1348 Fax: +1 425 883 2896	Verathon Medical (Europe) B.V. Willem Fenengastraat 13 1096 BL Amsterdam The Netherlands Tel: +31 (0) 20 210 30 91 Fax : +31 (0) 20 210 30 92	Verathon Medical (Canada) ULC 2227 Douglas Road Burnaby, BC V5C 5A9 Canada Tel: +1 604 439 3009 Fax: +1 604 439 3039

ABOUT THIS MANUAL

Not all Verathon Inc. products shown or described in this manual are available for commercial sale in all countries.

Information in this manual may change at any time without notice. For the most up-to-date information, see the documentation available at verathon.com/product-documentation.

IMPORTANT INFORMATION

PRODUCT DESCRIPTION

GlideScope Go is a handheld video laryngoscope system designed to deliver clear airway views, both directly and indirectly, facilitating rapid intubation. The reusable 3.5-inch tilting color monitor and rechargeable battery can be fully submerged for cleaning. Available user settings include auto-record, auto-shutdown, and content display, supporting a more customized user experience. This system integrates with the Spectrum product portfolio offering fully disposable blades that can be swapped without powering down the monitor. It also integrates with the GlideScope Video Baton 2.0, which reduces electronic waste through the use of disposable Stats. GlideScope Go is ideal for working under rugged conditions, for routine and difficult airways, and in a wide range of patients and clinical settings.

STATEMENT OF INTENDED USE

The GlideScope Go System is intended for use by qualified medical professionals to obtain a clear, unobstructed view of the airway and vocal cords for medical procedures.

STATEMENT OF PRESCRIPTION

Federal (United States) law restricts this device to sale by, or on the order of, a physician.

NOTICE TO ALL USERS

The system should be used only by individuals who have been trained and authorized by a physician, or by health care providers who have been trained and authorized by the institution providing patient care. Verathon recommends that all users do the following:

- Read the manual before using the instrument
- Obtain instruction from a qualified individual
- Practice using the video laryngoscope on a mannequin before clinical use
- Acquire clinical training experience on patients without airway abnormalities

WARNINGS & CAUTIONS

Warnings indicate that injury, death, or other serious adverse reactions may result from use or misuse of the device. *Cautions* indicate that use or misuse of the device may cause a problem, such as a malfunction, failure, or damage to the product. Throughout the manual, pay attention to sections labeled *Important*, as these contain reminders or summaries of the following cautions as they apply to a specific component or use situation. Please heed the following warnings and cautions.

⚠ WARNING The monitor must be cleaned before initial use.

⚠ WARNING To reduce the risk of electrical shock, use only the accessories and peripherals recommended by Verathon. Use of accessories and cables other than those specified or provided by Verathon may result in increased electromagnetic emissions or decreased electromagnetic immunity of this equipment and may result in improper operation.

⚠ WARNING When you are guiding the endotracheal tube to the distal tip of the video laryngoscope, ensure that you are looking in the patient's mouth, not at the screen. Failure to do so may result in injury, such as to the tonsils or soft palate.

⚠ WARNING Ensure that you follow the manufacturer's instructions for handling and disposing of cleaning, disinfection, or sterilization solutions.

⚠ WARNING Do not reuse, reprocess, or resterilize single-use components. Reuse, reprocessing, or resterilization may create a risk of contamination of the device.

⚠ WARNING No modification of this equipment is allowed.

⚠ WARNING Electric shock hazard. Do not attempt to open the system components. This may cause serious injury to the operator or damage to the instrument and voids the warranty. Contact Verathon Customer Care for all servicing needs.

⚠ WARNING The area surrounding the camera in the video laryngoscope can contact the patient and can exceed 41°C (106°F) as part of normal operation. Patient contact with this area of the blade during intubation is unlikely, as it would cause an obstruction of the camera view. Do not maintain continuous contact with this area of the blade for longer than 1 minute; it is possible to cause thermal damage such as a burn to the mucosal tissue.

⚠ WARNING Verathon has conducted no analysis to establish the compatibility of this product with environments where magnetic resonance imaging (MRI) equipment is installed. Because of this, the owner of this product must exclude it from any magnetic resonance (MR) environment.

⚠ WARNING GlideScope blades labeled with the following part numbers are not compatible with this system:

- 0574-0130 (Titanium LoPro S3)
- 0574-0131 (Titanium LoPro S4)
- 0574-0132 (Titanium MAC S3)
- 0574-0133 (Titanium MAC S4)
- 0574-0176 (Spectrum LoPro S3, deep connector well)
- 0574-0177 (Spectrum LoPro S4, deep connector well)
- 0574-0178 (Spectrum MAC S3, deep connector well)
- 0574-0179 (Spectrum MAC S4, deep connector well)

Refer to part numbers when assessing whether a blade is compatible with the system. For more information about compatible components and accessories, see the System Parts and Accessories section.

⚠ WARNING Because the product may be contaminated with human blood or body fluids capable of transmitting pathogens, all cleaning facilities must be in compliance with (U.S.) OSHA Standard 29 CFR 1910.1030 "Bloodborne Pathogens" or an equivalent standard.

⚠ WARNING Before every use, ensure that the instrument is operating correctly and has no sign of damage. Do not use this product if the device appears damaged. Refer servicing to qualified personnel.

Always ensure that alternative airway management methods and equipment are readily available.

Report any suspected defects to Verathon Customer Care. For contact information, visit verathon.com/global-support.

⚠ WARNING Ensure that the monitor is clean and free of contamination before placing it in the charging cradle.

⚠ WARNING The charging cradle should be used only for charging the GlideScope Go monitor. Any use of the charging cradle other than charging the GlideScope Go monitor can cause malfunctions or equipment damage.

⚠ CAUTION Medical electrical equipment requires special precautions regarding electromagnetic compatibility (EMC) and must be installed and operated according to the instructions in this manual. For more information, see the Electromagnetic Compatibility section.

⚠ CAUTION To save a video recording, disconnect the blade or baton or turn off the monitor. Removing the USB flash drive before a recording has fully saved may corrupt the video file.

⚠ CAUTION This product may only be cleaned or disinfected by using the approved processes provided in this manual. Cleaning and disinfection methods listed are recommended by Verathon based on efficacy or compatibility with component materials.

⚠ CAUTION Ensure the monitor's micro-USB port is dry before connecting a power adapter or charging cradle. If the micro-USB port is not dry when a power adapter or charging cradle is connected to it, electric shock, equipment damage, or system malfunctions can occur.

⚠ CAUTION Ensure that you do not use any abrasive brushes, pads, or tools when cleaning or disinfecting the video monitor screen. The screen can be scratched, permanently damaging the device.

⚠ CAUTION Do not submerge the charging cradle in a liquid solution. Submerging the charging cradle in a liquid solution can cause system malfunctions or damage to the monitor or the power adapter.

SYMBOLS

For a full list of caution, warning, and informational symbols used on this and other Verathon products, please refer to the Verathon Symbol Directory at verathon.com/symbols.

SYSTEM OVERVIEW

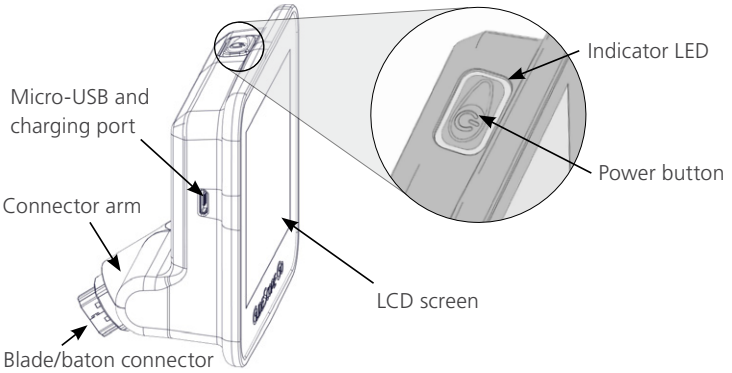
The GlideScope Go system features a small handheld monitor that can use either GlideScope Spectrum video laryngoscopes or GlideScope GVL Stats.

GlideScope Spectrum video laryngoscopes are durable, single-use plastic blades that must be disposed of after one use. Single-use blades are identified by an S in their name, such as LoPro S4. These blades incorporate the following technologies:

- Dynamic Light Control—Optimizes image brightness and clarity.
- Ambient Light Reduction—Diminishes excess reflected light to further improve image quality.

GVL Stats are durable, transparent, single-use laryngoscope shells that fit over a flexible, reusable stalk called a *video baton*. The Stats contain no active components, so waste is kept to a minimum. Although they are single-use devices, they do not have an S in their names.

Figure 1. GlideScope Go Monitor



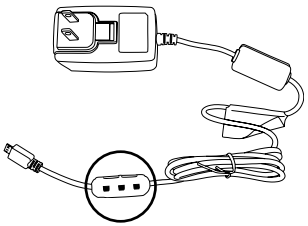
SYSTEM PARTS & ACCESSORIES

REQUIRED SYSTEM COMPONENTS

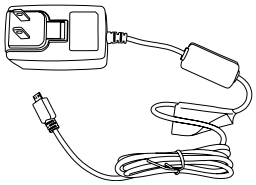
The following components are required for the system to function:

- GlideScope Go monitor
- Power adapter

Note: The power adapter on some older GlideScope Go systems must be updated to ensure that the system works correctly with Video Baton 2.0. The updated power adapters have an extra component on their cables, as shown in the following figures. Upgrade kits and newer GlideScope Go systems include an updated power adapter.



Updated power adapters
(0400-0149 and 0400-0150)



Older power adapter
(0400-0138)

INTERCHANGEABLE COMPONENTS

The system also must have one video laryngoscope connected to function. The laryngoscope can be either a Spectrum blade or a video baton with a Stat, as shown in the following list:

- Spectrum Miller S0 (Sterile 0574-0202, Non-Sterile 0574-0216)
- Spectrum Miller S1 (Sterile 0574-0203, Non-Sterile 0574-0217)
- Spectrum LoPro S1 (Sterile 0574-0165, Non-Sterile 0574-0218)
- Spectrum LoPro S2 (Sterile 0574-0166, Non-Sterile 0574-0219)
- Spectrum LoPro S2.5 (Sterile 0574-0201, Non-Sterile 0574-0220)
- Spectrum LoPro S3 (Sterile 0574-0194, Non-Sterile 0574-0221)
- Spectrum LoPro S4 (Sterile 0574-0195, Non-Sterile 0574-0222)
- Spectrum DirectView MAC S3 (Sterile 0574-0187, Non-Sterile 0574-0223)
- Spectrum DirectView MAC S4 (Sterile 0574-0188, Non-Sterile 0574-0224)
- GlideScope Video Baton 2.0, Large (size 3-4, part number 0570-0382) with one of the following:
  - GVL 3 Stat (0574-0100)
  - GVL 4 Stat (0574-0101)

ADDITIONAL ACCESSORIES

The following accessories are optional and may be used with the system:

- Charging cradle
- Small carrying case
- Large carrying case
- GlideRite Rigid Stylet (For ET tubes 6.0 mm or larger)
- GlideRite Single-Use Stylet – Small (For ET tubes 3.0–4.0 mm)
- Micro-to-standard hybrid USB flash drive, for configuring settings and recording video

SETTING UP THE SYSTEM

PROCEDURE 1. PERFORM INITIAL INSPECTION

1. Verify that you have received the appropriate components for your system by referring to the packing list included with the system.
2. Inspect the components for damage.
3. If any of the components are missing or damaged, notify the carrier and Verathon Customer Care or your local representative.

PROCEDURE 2. CHARGE THE BATTERY

Please read the Warnings & Cautions section before performing the following task.

For more about the battery and charging conditions, see Battery Specifications on page 19.

1. Connect the power adapter to a hospital-grade power outlet.
2. Ensure the micro-USB port on the monitor is dry.
3. If charging directly from the power adapter, connect it to the micro-USB port on the monitor.

   If charging with the charging cradle, connect the power adapter to the micro-USB port on the cradle, and then place the monitor in the cradle.

See the following table for a list of indicator LED status descriptions.

Table 1. Indicator LED Status Descriptions

LED Status	Description
Solid green	Battery is fully charged.
Solid orange	Battery is charging with an approved or equivalent power adapter.
Solid red	Battery is charging with an unapproved power adapter.*
Blinking red	Error. There is a problem with the battery or charging circuit.
Off	Not charging.

* Using an unapproved power adapter may not charge the battery correctly. Please replace the unapproved power adapter with the power adapter provided with the system.

4. Allow the battery to charge until the indicator LED is solid green.
5. Remove the monitor from the cradle, and then press the **Power** button on the monitor.

   Note: Do not attach a blade or baton at this time.
6. In the upper right corner of the monitor screen, verify that the installed software version is 1.3 or higher. If not, contact Verathon Customer Care for a software update.

PROCEDURE 3. CONFIGURE USER SETTINGS

The User Settings Tool is a Java-based tool and is available on the USB flash drive.

Note: The User Settings Tool requires Java Runtime Environment version 1.8 (Java Platform SE 8) or later. The USB flash drive contains 32-bit and 64-bit Java updaters. If you must update Java on the computer where you intend to run the User Settings Tool, use the installer that matches the bit depth (number of bits) of the Java software you currently have installed. This may be different from the bit depth of your operating system.

1. Connect the USB flash drive to a USB port on a computer.
2. Navigate to the USB flash drive, and then open the User Settings Tool.
3. Configure the settings as needed, and then click **Save**.
4. In the Save As dialog box, navigate to the USB flash drive, and then click **Save**.
5. Ensure the monitor is powered off, and then insert the USB flash drive into the micro-USB port on the monitor.
6. On the monitor, press the **Power** button. The monitor powers on and the settings automatically update. The settings file is then automatically deleted to help prevent accidentally overwriting the date and time settings.

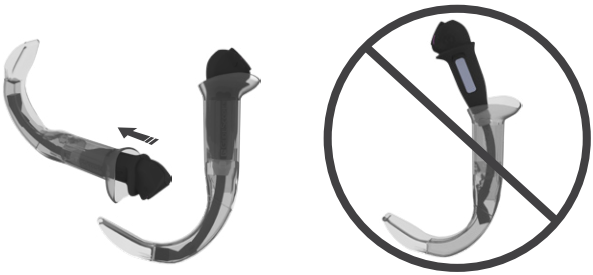
PROCEDURE 4. INSERT THE VIDEO BATON INTO THE STAT (OPTIONAL)

If you are using a video baton and a GVL Stat, attach the Stat to the baton before you connect the baton to the monitor.

1. Open the GVL Stat pouch, but do not remove the Stat from the packaging.
2. Ensure that the logo on the side of the baton and the logo on the side of the Stat are aligned.
3. Slide the video baton into the GVL Stat until it clicks into place. Do not remove the Stat from the pouch until you are ready to begin the intubation. This helps ensure that the blade remains as clean as possible until you are ready to use it.

   Note: Ensure that you do not insert the video baton backwards.

   Correct Incorrect



4. When you remove the GVL Stat from the packaging, visually inspect the Stat to ensure that all exterior surfaces are free of unintended rough areas, sharp edges, protrusions, or cracks.
5. If desired to provide additional anti-fog benefits, you may apply Dexide Fred Lite to the camera window on the Stat.* Use the solution according to the manufacturer's instructions.

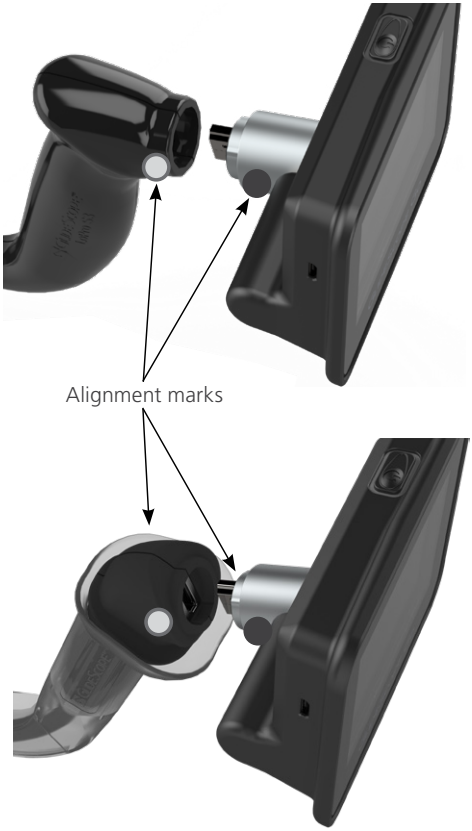
* Compatibility has been demonstrated for up to one hour of continuous exposure on video batons and Stats.

PROCEDURE 5. ATTACH THE BLADE OR BATON

The blade or video baton attaches to the monitor's connector arm. The monitor rotates on the connector arm, allowing you to set a starting angle to begin the intubation.

It is recommended that you leave single-use accessories in their packaging while connecting the cable and that you do not remove it until you are ready to perform the procedure. This helps ensure that the blade remains as clean as possible until you are ready to use it.

1. Align the arrow on the monitor with the arrow on the baton or single-use blade, and then insert the blade/baton connector fully into the connector port on the blade or baton.



PROCEDURE 6. PERFORM A FUNCTIONAL CHECK

Before you use the device for the first time, ensure the system is working properly.

1. Fully charge the monitor battery.
2. Attach the video laryngoscope to the monitor, according to the prior procedure.
3. Press the **Power** button. The monitor turns on.
4. Look at the screen, and verify that video is being received from the laryngoscope.

   Note: The edges of the blade or Stat may be captured in the camera view. This image acts as a frame of reference during the intubation process and ensures that the orientation of the image is correct in the monitor.

USING THE DEVICE

Prior to using the device, complete the instructions in the chapter Setting Up the System.

PROCEDURE 1. PREPARE THE SYSTEM

Please read the Warnings & Cautions section before performing the following task.

1. Ensure that each GlideScope system component has been properly cleaned or disinfected according to the guidance provided in the Reprocessing chapter on page 16.
2. Based on a clinical assessment of the patient and the experience and judgment of the clinician, select the GlideScope video laryngoscope that is appropriate for the patient.
3. Attach the video laryngoscope to the monitor per Attach the Blade or Baton on page 12.

PROCEDURE 2. PERFORM AN INTUBATION

Please read the Warnings & Cautions section before performing the following task.

To perform an intubation, Verathon recommends using the GlideScope 4-Step Technique as outlined in this procedure. Each step begins with where the user should be looking to complete that action. Prior to beginning this procedure, verify that the monitor is receiving an accurate image from the video laryngoscope.

1. **Look in the Mouth:** With the video laryngoscope in your left hand, introduce it along the midline of the oropharynx.
2. **Look at the Screen:** Identify the epiglottis, and then manipulate the blade in order to obtain the best glottic view.
3. **Look in the Mouth:** Carefully guide the distal tip of the tube into position towards the tip of the laryngoscope.
4. **Look at the Screen:** Complete the intubation, gently rotating or angling the tube as needed to redirect it.

PROCEDURE 3. RECORD THE INTUBATION

Please read the Warnings & Cautions section before performing the following task.

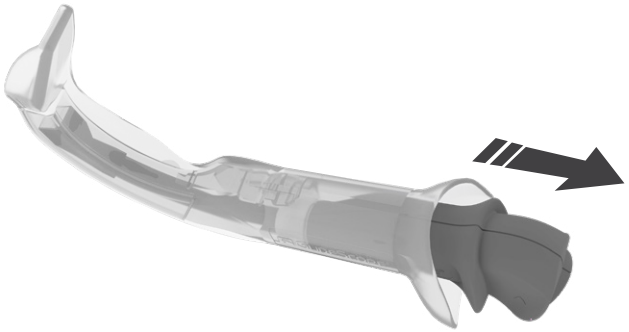
1. Start the recording by ensuring the following conditions are met:
   - A blade or video baton is connected to the monitor.
   - A USB flash drive is connected to the micro-USB port on the monitor.
   - The monitor is powered on.
   - The record feature is turned on in the user settings.

   Once these conditions are met, the recording starts automatically.
2. Stop the recording by pressing and holding the power button until the monitor has fully powered off. The recording also stops when the video laryngoscope is disconnected, the media capacity on the USB flash drive drops too low, or the monitor's remaining battery charge provides less than 1 minute of power.
3. If you would like to review the recording, connect the USB flash drive to a computer, and then view the .avi file. Files are automatically named with the system date and time.

PROCEDURE 4. DISCONNECT THE BATON (VIDEO BATONS ONLY)

The GVL Stat is a sterile, single-use device. After each use, it is a biohazard, and it should be removed from the video baton and disposed of in a manner consistent with local protocols.

1. Hold the Stat in one hand.
2. To reduce the force required to remove the video baton from the Stat, use your thumb and finger to gently press the collar of the Stat.
3. With the other hand, grasp the handle of the video baton and pull firmly.



REPROCESSING

Some of the components in this manual may require cleaning, low-level disinfection, high-level disinfection, or sterilization between uses or under specific circumstances. For information about the cleaning, disinfection, and sterilization requirements for these components, refer to the GlideScope and GlideRite Products Reprocessing Manual, which is available at verathon.com/product-documentation.

MAINTENANCE & SAFETY

Please read the Warnings & Cautions section before performing maintenance.

PERIODIC INSPECTIONS

In addition to the user performing routine inspections before and after every use, periodic inspections should be performed to ensure safe and effective operation. It is recommended that you perform a full visual inspection of all components at least every three months. The inspector should check the system for the following:

- External damage to the equipment
- Damage to the power adapter
- Damage to the connectors

Report any suspected defects to Verathon Customer Care or your local representative.

BATTERY

After 300 charge and discharge cycles, the battery capacity is approximately 80% of the initial capacity. Under normal operating conditions, this may happen at around 3 years. For more information about the battery, see Battery Specifications on page 19.

The battery is not user-replaceable. Do not attempt to replace the battery. Any attempts to replace the battery by unauthorized service technicians may cause serious harm to the user and will void the warranty. For more information, contact Verathon Customer Care or your local representative.

SYSTEM SOFTWARE

This manual documents the most current version of the software. If your monitor does not function as described in this manual, or to determine if your software should be updated, contact Verathon Customer Care. Do not perform any software upgrades from third-party vendors or attempt to modify the existing software. Doing so may damage the monitor and void the warranty.

DEVICE REPAIR

The system components are not user-serviceable. Verathon does not make available any type of circuit diagrams, component parts lists, descriptions, or other information that would be required for repairing the device and related accessories. All service must be performed by a qualified technician. If you have any questions, contact Verathon Customer Care or your local Verathon representative.

DEVICE DISPOSAL

The system and related accessories may contain batteries and other environmentally hazardous materials. When the instrument has reached the end of its useful service life, it must be disposed of in accordance with WEEE requirements. Coordinate disposal through your Verathon Service Center, or alternatively, follow your local protocols for hazardous waste disposal.

WARRANTY

Verathon products and software are warranted against defects in material and workmanship according to the Terms and Conditions of Sale. This limited warranty applies for the specified term from the date of shipment from Verathon and applies only to the original purchaser of the system. Warranty coverage applies to the following system components:

Component	Warranty Term
Monitor	2 years
Charging cradle	1 year
Video Baton 2.0	2 years

Additional reusable components purchased either singularly or as a part of a system are warranted separately. Consumable items are not covered under this warranty.

For more information about your warranty or to purchase a Premium Total Customer Care warranty that extends the limited warranty on your system, please contact Verathon Customer Care or your local representative.

PRODUCT SPECIFICATIONS

MONITOR SPECIFICATIONS

For video laryngoscope specifications, please see the G*lideScope Video Laryngoscopes Operations & Maintenance Manual* (part number 0900-4940) which is available at verathon.com/product-documentation.

Table 2. System Specifications

General Specifications	
Classification:	Electrical Class II / Internally Powered, Applied Part BF
Ingress protection against water:	IP67
Expected product life:	1500 uses or 3 years
Monitor Component Specifications	
Height	86 mm (3.39 in)
Width	98 mm (3.86 in)
Depth	47 mm (1.85 in)
Weight (approximate)	0.25 kg (8.82 oz)
LCD:	320 x 240 px, 8.9 cm (3.5 in)
Frames per second:	30 (displayed and recorded)
Operating & Storage Specifications	
Operating Conditions	
Operating temperature:	10–40°C (50–104°F)
Charging temperature:	10–35°C (50–95°F)
Relative humidity (non-condensing):	0–95%
Atmospheric pressure:	700–1060 hPa
Shipping & Storage Conditions	
Temperature:	-20–40°C (-4–104°F)
Relative humidity (non-condensing):	10–95%
Atmospheric pressure:	700–1060 hPa

BATTERY SPECIFICATIONS

Table 3. Battery Specifications

Condition	Description
Battery type:	Lithium-ion
Battery life:	Under normal operating conditions, a fully charged, new battery lasts approximately 100 minutes, (5) intubations without recording.
Charging time:	Charging time off line will take no more than 3 hours from an empty battery to a full charge.
Rated capacity:	1200 mAh or higher
Nominal voltage:	3.7 V
Max charging voltage:	4.2 V

ELECTROMAGNETIC COMPATIBILITY

The system is designed to be in compliance with IEC 60601-1-2, which contains electromagnetic compatibility (EMC) requirements for medical electrical equipment. The limits for emissions and immunity specified in this standard are designed to provide reasonable protection against harmful interference in a typical medical installation.

The system complies with the applicable essential performance requirements specified in IEC 60601-1 and IEC 60601-2-18. Results of immunity testing show that the essential performance of the system is not affected under the test conditions described in the following tables.

ELECTROMAGNETIC IMMUNITY

Table 4. Guidance and Manufacturer's Declaration—Electromagnetic Immunity

The system is intended for use in the electromagnetic environment specified below. The customer or the user of the system should ensure that it is used in such an environment.

Immunity Tests	IEC 60601 Test Level	Compliance Level	Electromagnetic Environment – Guidance
Electrostatic discharge (ESD) IEC 61000-4-2	± 8 kV contact ± 2, ± 4, ± 8, ± 15 kV air	In compliance	Floors should be wood, concrete, or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30%.
Electrical fast transient/burst IEC 61000-4-4 (Repetition frequency 100 kHz)	± 2 kV for power supply lines ± 1 kV for input/ output lines	In compliance	Mains power quality should be that of a home healthcare or hospital environment.
Surge transient IEC 61000-4-5	± 1 kV line(s) to line(s) ± 2 kV line(s) to earth	In compliance	Mains power quality should be that of a home healthcare or hospital environment.
Voltage dips, short interruptions and voltage variations on power supply input lines IEC 61000-4-11	Voltage dips: • 0% during 0.5 cycle • 0% during 1 cycle • 40% during 10/12 cycles at 50/60 Hz • 70% during 25/30 cycles at 50/60 Hz Voltage interruptions: • 0% during 250/300 cycles at 50/60 Hz	In compliance	Mains power quality should be that of a home healthcare or hospital environment. If the user of the system requires continued operation during power mains interruptions, it is recommended that the system be powered from an uninterruptible power supply or a battery.
Power frequency (50/60 Hz) magnetic field IEC 61000-4-8	30 A/m; 50/60 Hz	In compliance	Power frequency magnetic fields should be at levels characteristic of a typical location in a home healthcare or hospital environment.

Table 4. Guidance and Manufacturer's Declaration—Electromagnetic Immunity

The system is intended for use in the electromagnetic environment specified below. The customer or the user of the system should ensure that it is used in such an environment.

Immunity Tests	IEC 60601 Test Level	Compliance Level	Electromagnetic Environment – Guidance
Conducted RF: conducted immunity on all ports IEC 61000-4-6	3 Vrms at 0.15 MHz–80 MHz AC/DC/Signal lines 6 Vrms at ISM bands between 0.15 MHz–80 MHz	In compliance	Portable and mobile RF communications equipment should be used no closer to any part of the system, including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter. **Recommended separation distance d (m)** $d=1.2\sqrt{P}$
Conducted RF: conducted immunity on patient coupling ports IEC 61000-4-6	3 Vrms at 0.15 MHz–80 MHz and 480.0498 kHz 6 Vrms at ISM Band, 3 sec dwell time		

Table 4. Guidance and Manufacturer's Declaration—Electromagnetic Immunity

The system is intended for use in the electromagnetic environment specified below. The customer or the user of the system should ensure that it is used in such an environment.

Immunity Tests	IEC 60601 Test Level	Compliance Level	Electromagnetic Environment – Guidance
Radiated RF: hospital environment IEC 61000-4-3	3 V/m 80 MHz–2.7 GHz 80% AM at 1 kHz	In compliance	Interference may occur in the vicinity of equipment marked with the following symbol: 
Radiated RF: home healthcare environment IEC 61000-4-3	10 V/m 80 MHz–2.7 GHz 80% AM at 1 kHz		

Note: U_T is the AC mains voltage prior to application of the test level.

These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

ELECTROMAGNETIC EMISSIONS

Table 5. Guidance and Manufacturer's Declaration—Electromagnetic Emissions

The system is intended for use in the electromagnetic environment specified below. The customer or the user of the system should ensure that it is used in such an environment.

Emissions Test	Compliance	Electromagnetic Environment – Guidance
RF emissions CISPR 11	Group 1	The system uses RF energy only for its internal function. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.
RF emissions CISPR 11	Class B	The system is suitable for use in home healthcare and professional hospital environments.
Harmonic emissions IEC 61000-3-2	Class B	
Voltage fluctuations/flicker emissions IEC 61000-3-3	In compliance	

ACCESSORY CONFORMANCE TO STANDARDS

To maintain electromagnetic interference (EMI) within certified limits, the system must be used with the cables, components, and accessories specified or supplied by Verathon. For additional information, see System Parts & Accessories. The use of accessories or cables other than those specified or supplied may result in increased emissions or decreased immunity of the system.

Table 6. EMC Standards for Accessories

Accessory	Max Cable Length
Monitor power adapter	1.5 m (4.9 ft)
Charging cradle power adapter	1.5 m (4.9 ft)


VERATHON®