

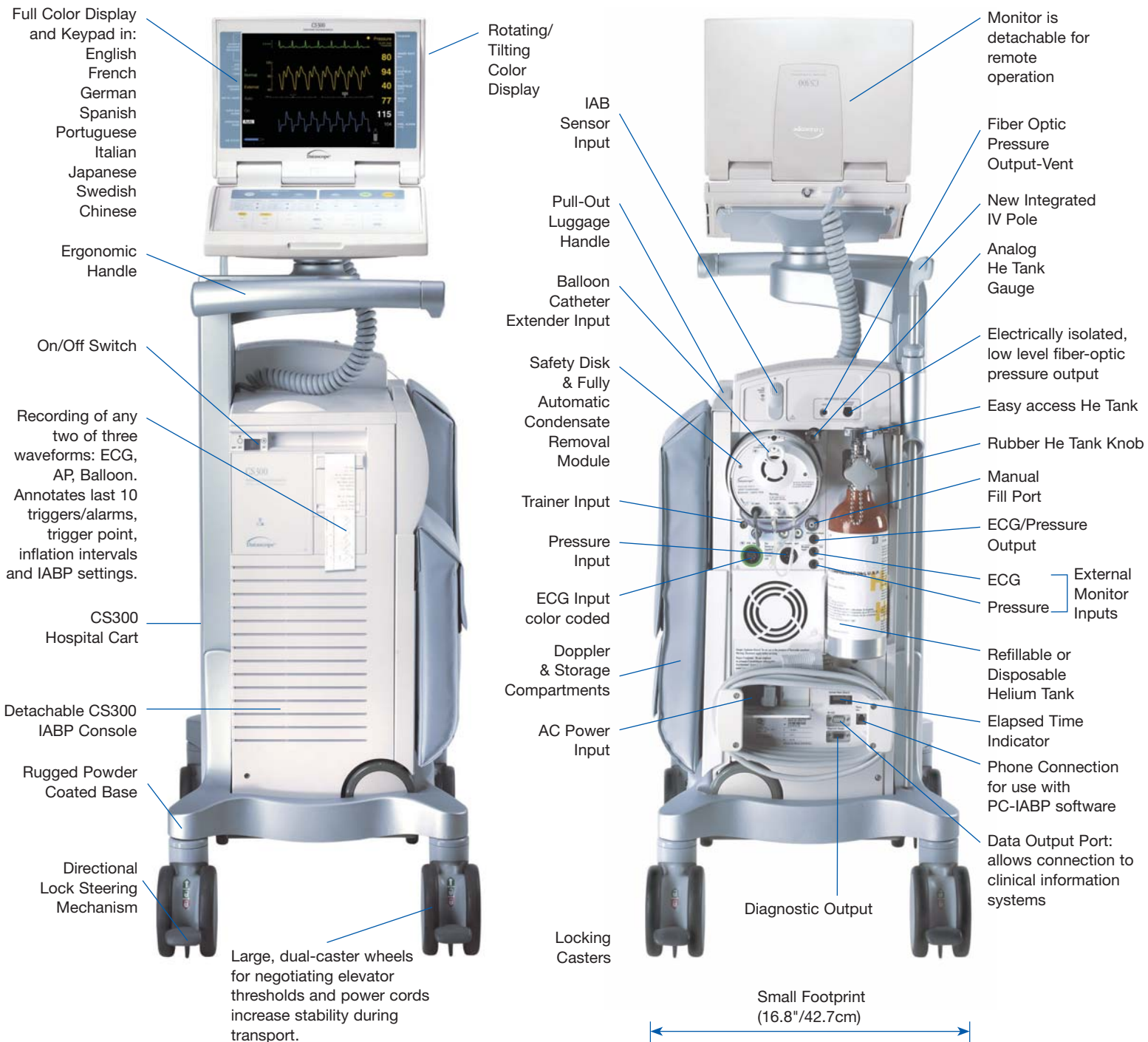
MAQUET
GETINGE GROUP

CS300™ IABP
PRODUCT FEATURES



The **CS300 with INTELLISENSE™** combines fiber-optic speed with automatic *in vivo* calibration. The result is faster time to therapy, faster signal acquisition, and faster adaptation to rate and rhythm changes.

Optimal therapy for all your IABP patients.



CS300 SOFTWARE, COLOR DISPLAY AND KEYPAD CONTROLS

The CS300 with INTELLISENSE™ software is designed to emulate an experienced user, allowing you more time to focus on your patient. This sophisticated algorithm automatically selects the best lead and trigger source, sets optimal inflation and deflation timing, and still allows the clinician the ability to fine tune deflation timing. The CS300 quickly adapts to rate or rhythm changes in order to optimize augmentation and support during diastole.

Bright Full Color Display
High contrast screen with wide viewing angle and easy rotation/tilt.

Alarms
are posted here and are differentiated into high, medium, and low priority status

Fast Inflation Speeds

Fast Deflation Speeds

Operation Mode Indicator:
Auto, Semi Auto, Manual

Time-in-Standby
Posted (here) after 1 minute in standby. Advisory message/tone posted after 10 minutes.

Intuitive IAB Status Indicator

Built-in Service Diagnostics Software
Display/keypad convert to diagnostic program.

Fully automated operational mode

Intuitive arrow key trigger selection controls

Fewer keys for simple operation.

"Laptop style" display and keypad can be detached for remote operation

Easier selection of available help menu screens.



Fast QRS Recognition
Enhanced R-Wave deflation performance.

Color-coded trigger source indicator
corresponds to signal waveform.

Large, crisp labeling

Automatic Scaling of AP and ECG waveforms.

Unassisted Systolic and Diastolic Pressures
Posted in 1:2 or 1:3 assist frequency.

Timing control indicators
display inflate and deflate settings.

Low Augmentation Alarm

Helium and Battery Level Icons

Help Screen Availability Indicator

ZERO PRESSURE
for zeroing of fluid-filled IAB or manual calibration of Sensation fiber-optic IAB.

One-Button Start-Up.
Press START key and CS300 automatically conducts autofill, selects lead and trigger source, sets timing, initiates 1:1 assist and increases augmentation to MAX. When using a Sensation IAB catheter, calibration is also automatic on Start-Up.

STANDBY key
now separate control from START key.

Timing control keys
replace sliders. Settings displayed on-screen for easier viewing.

New, intuitive menu navigation system and controls.

Convenient Signal Source Selection,
switching between direct patient and external signals.

User Preferences.
Allows user to set individual parameters such as waveforms displayed, alarm volume, and printer preferences, including the ability to print strips at specific time intervals.

One-button printing.
Fully annotated printout, user-configurable waveforms and strip length.

CS300 WITH INTELLISENSE SUMMARY TECHNICAL SPECIFICATIONS

Color Display: Color TFT Liquid Crystal Display (LCD) 8.3"(21cm)W x 6.2"(15.8cm)H; up 45°, 10.4" diagonal (26.4 cm) down 55°, right 70°, left 70° viewing angle; Rotates 330°; Tilts 180°; Detachable; Laptop-like closure for storage and protection; Remote monitor mount (optional)

Preferences Menu: User may select display *sweep speed* (25 or 50 mm/sec), *brightness* (low, med., high); *balloon waveform* (on/off); ECG *inflation markers* (on/off); *flashing alarms* (on/off); printer preferences, set date and time)

Operation Modes: Auto, Semi Auto, Manual

ECG Trigger: Threshold dynamically adjusted by system for high sensitivity and selectivity of the R-wave detection; Minimum = 120µV ± 20µV at normal gain; 40µV at max. gain

Pressure Trigger: Default trigger threshold is automatically adjusted to 38% of the systolic pulse height; 7 mm minimum
Manual threshold mode: User adjustable between 7 and 30 mmHg ± 3 mmHg

Pacer A Trigger: R-wave detection (as above) except pacer blanking is extended to 100 ms

Pacer V/A-V Trigger: *V Pacer:* fixed at rate up to 185 bpm (no demand pacing)
A-V Pacer: fixed at rate up to 125 bpm (no demand pacing) with A-V intervals between 80-224 ms
Variable mode: 40-120 bpm; *Normal mode:* 80 ± 1 bpm

Internal Trigger: Rejects all T-Waves where Q-T interval is <300 ms and the amplitude is <70% of QRS input amplitude

Tall T-Wave Rejection: (ECG and Pacer A mode) Rejects all pulses of amplitude ± 2.0 mV to ± 700 mV and durations between 0.1 ms to 2.0 ms with:

Pacer Rejection: (ECG and Pacer A mode) 1) No tail; 2) 100 ms time constant tail < 1 mV; 3) 25 ms time constant tail < 1 mV; 4) 4 ms time constant tail < 2 mV

ECG Leads: In Auto Operation Mode: I, II, III, External
In Semi-Auto Mode: I, II, III, AVR, AVL, AVF, V, External (12 lead compatibility)

ECG Gain (default): 1 V output per 1 mV input ±5% (waveform automatically scaled to occupy ECG display window)

Gain (variable): 0.15 to 3.0 cm/mV ±20% (autoscaling disabled)

Frequency Response: 0.5-12 Hz (display); 0.5-135 Hz (Output to External Monitor)

Defibrillator Protection: Discharge level ≤ 360 J (trace returns to screen in 5 sec max)

ESIS: Automatic suppression with internal ECG amplifier

AP Source Selection: Direct/External (menu based)

AP Input Sensitivity: 5.0µV/V/mmHg

Excitation: +5 VDC ± 5% @ 130 mA (max)

Frequency Response: DC to 12 Hz (display)

Fiber-optic signal acquisition: Detected when sensor is connected to receptacle

Low-level Fiber-optic Pressure Output: Enacted when appropriate cable plugged in (electrically isolated)

Pressure Range: 0 to +300 mmHg (minimum)

Accuracy: 4 mmHg or 4%, whichever is greater

Frequency Response: DC to 26Hz + - 15% (+0 to -3dB)

Excitation: 4 to 8 Volts DC minimum

Noise: .2 mmHg rms (0 to 26Hz bandwidth)

External Mon. Inputs: ECG: 1 V/mV (nominal); AP: 1 V/100 mmHg (nominal)

ECG/BP Output: Phone Jack: ECG 1V / mV, BP 1V/100 mmHg

Mains Voltage: 100-120 VAC ± 10% or 220-240 VAC ± 10%

Mains Frequency: 50/60 Hz ± 3 Hz

Internal Battery: 24 VDC (nominal), 17.2 Amp-hour, approx. 3 hrs. @ 90 bpm

Battery Type: Maintenance free; Sealed lead-acid

System Compressor: Dual head diaphragm pump with brushless DC motor

IAB Helium (He+): Medical-grade; 99L Refillable (2200 psi) or 140L Disposable (2200 psi)

He+ Endurance (nominal): 2 mos. continuous operation - 24 hrs./day

Condensate Removal: Fully automatic condensate removal and disposal

WIN-IABP (optional): Software for remote clinical assistance and training

Service Diagnostics: Built-in software for system analysis and troubleshooting

Modem Data Rate: Up to 9,600 baud

Modem Certifications: Registered with FCC and accepted in ≥ 89 countries

Size on Cart: 43.1" H x 16.8" W x 22.3" D
(109 cm H x 42.7 cm W x 56.6 cm D)

Size off Cart: 26.9" H x 10.8" W x 20.5" D
(68.3 cm H x 27.4 cm W x 52.1 cm D)

Console Weight: 84.8 lbs. (38.4 Kg) nominal (includes S.D., CRM, and He tank)

Monitor: 9.5 lbs. (4.3 Kg) nominal

Hospital Cart Weight: 52.4 lbs. (23.8 Kg) nominal

Internal Battery: 34 lbs. (15.4 Kg) nominal

Storage Bag: 4.6 lbs. (2.1 Kg) nominal (includes doppler and doppler holder)

UTS Version: Rugged base which attaches to docking station (DS)

Dimensions: 30.0" H x 13.2" W x 22.5" D (76.2 cm H x 33.5 cm W x 57.2 cm D)

Console Weight: 135.3 lbs. (61.4 Kg) (includes S.D., CRM, He tank, Monitor, Battery)

Lightweight DS*: 17.8" (45.1 cm) x 20.0" (50.8 cm); 16.3 lbs
**(Suggested Option)*

Op. Temp.: 10°C - 40°C

Op. Humidity: 5 - 95% (R.H.) non-condensing

Op. Altitude: 0 - 12,000 feet (3,657 m); automatic altitude correction for IAB pressure

Printer Type: Thermal array - 50 mm wide

Printer Menu: On-screen selection of waveforms; strip length, timed print, print on alarm and alarm/trigger log

Waveforms (any 1 or 2): ECG (lead number & size labeled), arterial pressure, BPW

Annotation: Event Markers: Trigger pulse, inflation interval
Additional Data: Space for patient I.D.; Date; Time; Alarm and Advisory messages; Timing mode; Trigger; HR, Frequency; Syst/Dias (in 1:1); Assisted and Unassisted Syst/Dias (in 1:2 or 1:3); Augmented Pressure; Mean Pressure; Operation Mode

ACCESSORIES

Doppler: 8 MHz non-directional probe

Saline Pole: Height adjustable

Simulator*: Emulates ventricular rhythms; Pacers; HR; A-fib

Remote Mount*: Mounts keypad/monitor on bypass pump

Storage Case: Holds cables and spare items

Pump Cover*: Padded vinyl with pocket

Ext Cable*: Monitor extension cable

REGULATORY COMPLIANCE

- Safety
 - IEC 60601-1: 1998 / EN 60601: 1990,
 - IEC 60601-2-27: 1994 / EN 60601-2-27: 1994,
 - IEC 60601-2-34: 2000 / EN 60601-2-34 : 2000,
 - IEC 60601-1-8:2003,
 - UL 60601-1:2003, CSA C22.2 - No. 601.1S1 - 94,
 - EC Medical Device Directive 93/42/EEC
 - CSA C22.2 No. 601.1-M90
 - EMC
 - IEC 60601-1-2:2001 / EN 60601-1-2: 2001
 - RTCA/DO-160D Sect. 21 Cat. B
 - RTCA/DO-160D Sect. 20 Cat. T
- Shock & Vibration
 - EN 1789:1999
 - RTCA/DO-160D Sect. 7 Cat. B
 - RTCA/DO-160D Sect. 8 Cat. U
 - MIL-STD-810F
 - IEC 68-2-27
 - IEC 68-2-34
- LCD Screen
 - Complies to NEC spec (NEC: EL-LCD0034 (2))