

PHILIPS AVALON FM30



ABOUT

The **Philips Avalon FM 30** is a fetal and maternal monitor that offers cross-channel verification to separate the maternal pulse rate and blood pressure from the fetal heart rate. The Avalon 30 comes with a color touchscreen interface that features ultrasound, fetal movement, direct fetal heart rate, TOCO, and intrauterine pressure. While also offering the maternal pulse rate, ECG, Spo2, and blood pressure. The Avalon FM 30 comes with a Cordless transducer System, making it easy for the mother to move freely while still continuously monitoring all parameters.

FEATURES

- Crisp and clear intuitive color touchscreen with large numerics and graphics
- Backup memory for seamless monitoring
- LAN interface for compatibility with hospital IT networks and access to additional system capabilities
- Smart transducers with auto-recognition simplify operation
- Transducer plug-and-play with automatic screen layout to focus on the patient, not the system
- Data buffer with multi-patient handling for random printout
- Cross-channel verification of maternal and fetal heart rates



SPECIFICATIONS



DIMENSIONS

M2702A / M2703A

- Height: 5.2 in (133 mm)
- Width: 11.3 in (286 mm)
- Depth: 13.2 in (335 mm)
- Weight: 11.2 lbs (5.1 kg)

M2704A / M2705A

- Height: 6.8 in (172 mm)
- Width: 16.5 in (420 mm)
- Depth: 14.6 in (370 mm)
- Weight: 19.8 lbs (<9.0 kg)

OPERATING ENVIRONMENTAL CONDITIONS

Monitor

- **Temperature Range:** 0°C to 45°C (32°F to 113°F)
- **Humidity Range:** <95% relative humidity @ 40°C/104°F
- **Altitude Range:** -500 to 3000 m/-1640 to 9840 ft.

Transducer

- **Temperature Range:** 0°C to 40°C (32°F to 104°F)
- **Humidity Range:** <95% relative humidity @ 40°C/104°F
- **Altitude Range:** -500 to 3000 m/-1640 to 9840 ft.

SPO2

Temperature Range: 0°C to 37°C (32°F to 98.6°F)

DISPLAY

Monitor Screen: 6.5 in / 16.51 cm

Touchscreen Operation: Optional

BATTERY

Operating Time: up to 4 hours

STORAGE ENVIRONMENTAL CONDITIONS

Monitor

- **Temperature Range:** -20°C to 60°C (-4°F to 140°F)
- **Humidity Range:** <90% relative humidity @ 60°C/140°F
- **Altitude Range:** -500 to 13100 m/-1640 to 43000 ft.

Transducer

- **Temperature Range:** -20°C to 60°C (-4°F to 140°F)
- **Humidity Range:** <90% relative humidity @ 60°C/140°F
- **Altitude Range:** -500 to 13100 m/-1640 to 43000 ft.

FETAL / MATERNAL ULTRASOUND

Measurement Method: Ultrasound Pulsed Doppler

Measurement Range: US 50 to 240 bpm

Display Resolution: 1 bpm

Printer Resolution: 1/4 bpm

Jitter @ 200 bpm: = 3 bpm

Display Update Rate: 1/ Second

SPECIFICATIONS



Average output: power $P = (4.3 \pm 0.4) \text{ mW}$

Peak-negative acoustic pressure: $p_- = (33.9 \pm 3.6) \text{ kPa}$

Output beam intensity: (I_{ob}) (= spatial average – temporal average intensity) $I_{sata} = (2.38 \pm 0.75) \text{ mW/cm}^2$

Spatial-peak temporal average intensity: $I_{spta} = (10.3 \pm 2.2) \text{ mW/cm}^2$

Effective radiating area: @ -6 dB 1.81 cm^2

Beat to Beat Change: (max.) for Ultrasound 28 bpm

Frequency: $1 \text{ MHz} \pm 100 \text{ Hz}$

Signal Range: $3.5 \mu\text{Vpp}$ to $350 \mu\text{Vpp}$ @ 200 Hz

ECG

DECG: Single Lead ECG (derived from Fetal Scalp Electrode)

MECG: Single Lead ECG (derived from RA and LA electrodes)

Measurement Range: 30 to 240 bpm

Display Resolution: 1 bpm

Recorder Resolution: 1/4 bpm

Accuracy: $\pm 1 \text{ bpm}$ or 1%, whichever is greater

Beat to Beat Change (max.) 28 bpm

Differential Input Impedance: $> 15 \text{ MO}$

Electrode Offset Potential Tolerance: $\pm 400 \text{ mV}$

Filter Bandwidth: 0.8 to 80 Hz

Inop Auxiliary Current (Leads Off Detection): $< 100 \mu\text{A}$

Input Signal Range DECG: $20 \mu\text{Vpp}$ to 6 mVpp
MECG: $150 \mu\text{Vpp}$ to 6 mVpp

Dielectric Strength: 1500 Vrms

Defibrillator Protection: None

ESU Protection: None

NON-INVASIVE BLOOD PRESSURE

Measurement Ranges

- Systolic 30 to 270 mmHg (4 to 36 kPa)
- Diastolic 10 to 245 mmHg (1.5 to 32 kPa)
- Mean 20 to 255 mmHg (2.5 to 34 kPa)

Accuracy

- Max. Std. Deviation: 8 mmHg (1.1 kPa)
- Max. Mean Error: $\pm 5 \text{ mmHg}$ ($\pm 0.7 \text{ kPa}$)

Pulse Rate Range Accuracy

- 40 to 300 bpm
- 40 to 100 bpm: $\pm 5 \text{ bpm}$
- 101 to 200 bpm: $\pm 5\%$ of reading
- 201 to 300 bpm: $\pm 10\%$ of reading

Measurement Time

- Typical at HR $> 60 \text{ bpm}$
- Auto/manual: 30 seconds (adult)
- Maximum time: 180 seconds (adult)

Adult Cuff Inflation Time: Less than 10 seconds

Cuff Inflation Pressure: $165 \pm 15 \text{ mmHg}$

Auto Mode Repetition Times: 1, 2, 2.5, 3, 5, 10, 15, 20, 30, 45, 60 or 120 minutes

SPECIFICATIONS



PARAMETERS

External fetal parameters: US/Toco

Twin capability: Standard

Triplets capability: Optional

Internal fetal parameters: DECG, IUP

Smart Pulse technology: Standard

Cross channel verification: Standard

Fetal movement profile: Standard

INTERFACES

PS/2 interfaces Optional

System interface (optional) Serial, LAN

READINGS

NST trace interpretation (optional) Up to three Fetal Heart Rates (FHR)

NST timer Standard

DATA STORAGE

Data buffer Up to one hr