





Dual chamber pacemaker system

vitatron • The Pace Makers

# F50D

# **Specifications**

Model E50A1

# Dual chamber pacemaker system

# **Mechanical**

Model Size (HxWxD mm) M (g) V (cc) Connector Radiopaque ID

F50A1 44.7x47.9x7.5 27.1 12.1 IS-1 BI or UNI VG

11.3 years\*

12.0 years\*\*

OAO

On. Off

6,7.5V

2.8.4 mV

(exc. 65, 85)

DDD, DDI, DVI, DOO, VDD, VVIR, VDIR,

VVI, VDI, VVT, VOOR, VOO, AAIR, ADIR,

AAI, ADI, AAT, AOOR, AOO, ODO, OVO,

30, 35, 40...60...175 ppm

80, 90, 95...130...180 ppm

80, 90, 95...130...180 ppm

0.5, 0.75, 1.0...3.5...4, 4.5, 5, 5.5,

0.12, 0.15, 0.21, 0.27, 0.34, 0.4, 0.46, 0.52, 0.64, 0.76, 1, 1.25, 1.5 ms

1, 1.4, 2, 2.8, 4, 5.6, 8, 11.2 mV

Bipolar, Unipolar, Configure

Bipolar, Unipolar, Configure

30, 40, 50 ... 150... 350 ms

30, 40, 50 ... 120... 350 ms

150, 160, 170...250...500 ms

130, 140, 150...180...350 ms

180, 190, 200...**250**...500 ms

130, 140, 150...180...350 ms

20, 28, 36, 44 ms

0.18, 0.25, 0.35, 0.5, 0.7, 1, 1.4, 2,

Auto, Varied, 150, 160, 170 ... 500 ms

### Battery

Туре	Lithium-iodine
Voltage	2.8 V
Average projected capacity	1.3 Ah

#### Longevity

with Reduced VP™+ off with Reduced VP™+ on

# **Bradycardia Pacing**

Programmable parameters Pacing Modes

Mode Switch Lower Rate

Upper Tracking Rate<sup>a</sup> Upper Sensor Rate A and RV Pulse Amplitude<sup>b</sup>

A and RV Pulse Width

Atrial Sensitivity

Ventricular Sensitivity Pacing Polarity (A and V) Sensing Polarity (A and V) Paced AV (PAV) Sensed AV (SAV) **PVARP** Minimum PVARP **PVAB** Atrial Refractory Period Atrial Blanking Period Ventricular Refractory Period 150, 160, 170...230...500 ms Ventricular Blanking (after atrial pace) (PAVB)

Therapies to promote intrinsic activation

On, Off
10, 20, 30 <b>170</b> 250 ms
On, <b>Off</b>
30, 35, 40 <b>50</b> 90 ppm
(exc. 65, 85)
00:00, 00:15, 00:30
<b>22:00</b> 23:45
00:00, 00:15, 00:30
<b>8:00</b> 23:45
Off, 40, 50, 60 ppm

#### **Rate Response Pacing**

ADL Rate
Rate Profile Optimization
ADL Response
Exertion Response
Activity Threshold
Acceleration
Deceleration
RAAV
Start Rate
Stop Rate
Maximum Offset

60, 65, 70...95...175, 180 ppm On, Off 1.2.3.4.5 1, 2, 3, 4, 5 Low, Medium Low, Medium High, High 15 s, 30 s, 60 s 2.5 min, 5 min, 10 min, Exercise 0n, **Off** 50, 55, 60...**80**...175 ppm 55, 60, 65...**120**...180 ppm -10, -20, -30...**-40**...-300 ms

#### Additional Pacing Features

PMT Intervention	On, <b>Off</b>
PVC Response	<b>0n</b> , Off
Ventricular Safety Pacing	<b>On</b> , Off

## Atrial Tachyarrhythmia Therapies and Interventions

Mode Switch On, Off Detected Rate Detect Duration Blanked Flutter Search On, Off

120, 125...175...200 ppm No Delay, 10, 20...60 sec

#### Conducted AF Response<sup>c</sup>

Regularize V-V during AT/AF On, Off Maximum Rate (ppm) 80, 85, 90...110...130

Non-Competitive Atrial Pacing On, Off

# Automatic Pacing, Sensing, and Lead Monitor

### **Implant Detection and Initialization**

At the completion of the 30-minute Implant Detection period, Rate Profile Optimization is enabled; the appropriate pacing and sensing polarities are automatically selected by the device; Ventricular Output Management is enabled and Amplitude and Pulse Width become adaptive. Reduced VP™+ is enabled 60 minutes after implant detection is complete.

Implant Detection Lead Monitor (A and V)	On/Restart, Off/Complete Configure, Monitor Only, Adaptive (Auto Polarity Switch), Off
Notify if <	200 Ω
Notify if >	1000, 2000, 3000, <b>4000 Ω</b>
Monitor Sensitivity	2, 3, 4 <b>8</b> 16
Ventricular Output Managem	ient

Ventricular Output Management Amplitude Margin Minimum Adapted Amplitude Capture Test Frequency

Capture Test Time Acute Phase Days Remaining

V. Sensing During Search

Off, Monitor Only, Adaptive 1.5x, 2x, 2.5x, 3x, 4x (times)

0.5, 0.75...**2**...3.5 V 15, 30 min; 1, 2, 4, 8, 12 hours; Day at rest; Day at...; 7 days at 00:00, 1:00...23:00

Off, 7, 14, 21...84, 112, 140, 168... 252 days Unipolar, Bipolar, Adaptive

## **Diagnostics**

Cardiac Dashboard II Highlights significant events, pacing summary, threshold and impedance trends Ventricular pacing threshold trends Battery longevity Pacing summary and access to rate histogram Atrial and ventricular lead impedance trends Observations

## Histogram reports

Heart rate histograms AV Conduction histograms Reduced VP™+ histogram Sensor indicated rate profile

#### Atrial and ventricular episodes

Atrial and ventricular high rate episodes Ventricular rate during AT/AF AT/AF durations Multiple EGM episodes

#### **Clinician selected diagnostics**

Custom rate trend Ventricular output management detail High rate detail

### **Patient Data Management**

Patient data stored in device Patient identification Leads implanted Device implanted Clinician's stored notes

#### Data management

Automatic printing of initial interrogation report Full page printing Save-to-Disk capacity for electronic file management

## Follow-up and Troubleshooting

Telemetry features Transtelephonic monitor Extended telemetry Extended marker Key parameter history Initial interrogation report Strength duration threshold test Ventricular threshold test Marker Channel™ Threshold margin test Exercise test EP studies Magnet test Underlying rhythm test Sensing test Temporary test

Magnet mode operation

On, Off On, Off Standard, Therapy Trace

BOSERI/RRTDual chamber modeDOO 85 ppm65Single chamber atrial modeAOO 85 ppm65Single chamber ventricular modeVOO 85 ppm65

ERI-RRT

Initiation date

#### Recommended Replacement Time (RRT/ERI)

Replacement message on programmer (Cardiac Dashboard II)	
Battery/lead information	Replacement message and displayed
	battery voltage on programmer
RRT/ERI initiation date	Displayed on programmer

#### References

<sup>a</sup> The atrial and ventricular rate limit is 200 min<sup>-1</sup> (± 20 min<sup>-1</sup>). <sup>b</sup> Tolerance for amplitudes from 0.5 V through 6.0 V is ± 10% and for 7.5 V is -20/+0%. Tolerances are based on 37°C and a 500  $\Omega$  load. Amplitude is determined 200  $\mu$ s after the leading edge of the pace. <sup>c</sup> Conducted AF response is functional during Mode Switch episodes, VVIR, and VDIR modes.

 $^*$  DDD, 60ppm, 100% pacing, ventricular 2.0 V,† atrial 1.5 V, † 0.4 ms pulse width, 1000  $\Omega$  pacing impedance.

\*\* Reduced VP™+ ON 50% pacing.

 $\dagger$  Ventricular output management minimum adapted values at out-of-box settings.

Nominal values indicated in **bold** 

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E50 D Dual Chamber

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