History of the Development of the Optimizer® Smart Mini Device

**1999: Impetus I**

The Impetus I. was the first implantable CCM device, which included a fully functional DDD pacemaker and a dedicated CCM output called ETC (excitable tissue control).

**2000: Impetus II**

The Impetus II. Was the first CCM device to utilize a local-sense-based delivery algorithm — CCM signals could be adapted to activity levels using an onboard accelerometer.

**2001: Optimizer I**

The Optimizer I. was the first device to test CCM delivery to the RV in human subjects.

**2001: Optimizer II**

The Optimizer II. was the first CCM device to provide therapy on an automated daily schedule, RA and RV sensitivity ranges were extended with CCM delivered through RV and LS leads.

**2004: Optimizer III**

The Optimizer III. was the first-ever Li-ion cardiac IPC — the header was reconfigured to deliver CCM therapy to the RV. Over nine years of clinical data were collected using this device.

**2013: Optimizer IVs**

The Optimizer IVs featured an inductive charging coil that was reduced in size and moved to the header. The advanced hardware platform resulted in a dramatic volume reduction.

**2016: Optimizer® Smart System**

The Optimizer® Smart System was FDA-approved in 2019 and awarded the FDA designation as a “Breakthrough” device. This device only required two RV leads and was MRI-conditional.

**2022: Optimizer® Smart Mini System**

Today’s current Optimizer® device generation is our latest CCM therapy delivery system. The Optimizer® Smart Mini is 25% smaller and 33% lighter than the previous Optimizer® Smart model introduced in 2016. This model is designed as a physiologically shaped implantable enclosure with a 20-year battery life and provides RF telemetry and advanced diagnostic monitoring.