

## THE HARVESTOR-III™ POWER MODULE

### OVERVIEW

The new **Harvestor-III™ third-generation power module** line provides perpetual electric power with best-in-class vibration energy harvesting (VEH) combined with *ultra-efficient* power management circuitry in compact, lightweight and durable enclosures.

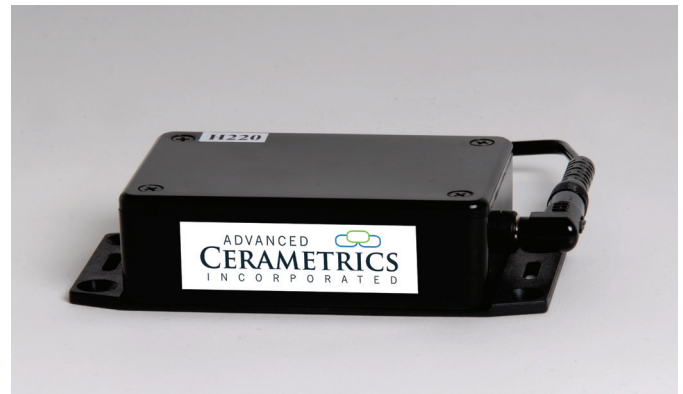
ACI's proprietary and uniquely-flexible piezo-fiber composites (PFCs) enable **breakthrough performance in vibration energy harvesting** - delivering useful electrical power for sensors, wireless networks and low power circuits.

When subjected to vibration from a wide range of sources (transportation, aviation, industrial, infrastructure), the Harvestor-III™ power module uses the piezo effect to capture the vibration energy and convert it into electric energy, regulate it, and store it for useful DC voltage output.

### APPLICATIONS

Applications for the Harvestor-III Power modules often include perpetual power for wireless sensors, monitoring devices, preventive maintenance, and a range of milliwatt-powered electronic circuits and devices. In continuous or intermittent vibratory environments, the Harvestor provides an alternative to wired power and can also be used to replace or augment battery power to extend maintenance-free system life.

- Embedded Sensor Power Supply
- Wireless Transmitter Node Power Supply
- Condition Based Monitoring
- Battery Replacement
- Hybrid Energy Harvesting-Battery augmentation systems



### PRODUCT LINE FEATURES & BENEFITS

- Perpetual power supply from ambient vibration: cost-effective and convenient.
- Energy harvesting, power conditioning, power storage, and regulated DC output in one convenient, mountable enclosure.
- Range of resonant frequencies available for easy integration and system design
- Broad frequency response around resonance for optimum in-situ performance
- Excellent high *and* low frequency VEH performance
- Proprietary piezoelectric fiber composite bimorph (PFCB) transducers convert ambient mechanical vibrations into electrical power
- Regulated 3V and 3.3V (DC) output
- 8.0V electronic protection clamp
- Ready for use as configured. Customization also available for your application.

### MARKETS SERVED

- Industrial Sensing
- Transportation  
*Auto, Rail, Aviation*
- Infrastructure Monitoring
- Aerospace
- Government  
*Military, Homeland Security*



# THE HARVESTOR-III™ POWER MODULE

## RANGE OF STANDARD MODELS: OPTIMIZED PERFORMANCE

### Model H30

The Harvestor-III Model H30 is optimized for low frequency (30 Hz) ambient vibration environments not uncommon in many industrial mechanical equipment and infrastructure settings.

### Models H60, H120 and H220

The Harvestor-III Models H60, H120 and H220 are optimized for vibration environments exhibiting these frequencies of vibration often found emanating from 60 Hz electric motors, engines, industrial and transportation systems and other higher frequency vibration environments.

## HARVESTOR-III™ TECHNICAL SPECIFICATIONS

Model No.	H30	H60	H120	H220
Center Frequency (Hz)	30	60	120	220
Voltage Out (V)* DC Power Jack	3.0	3.0	3.0	3.0
Standard Storage Capacity (mF)**	1	1	1	1
Standard Dimensions (mm)	L 165 W 35 H 40	L 125.30 W 50 H 22.5	L 125.3 W 50 H 22.5	L 110.2 W 56 H 23.5

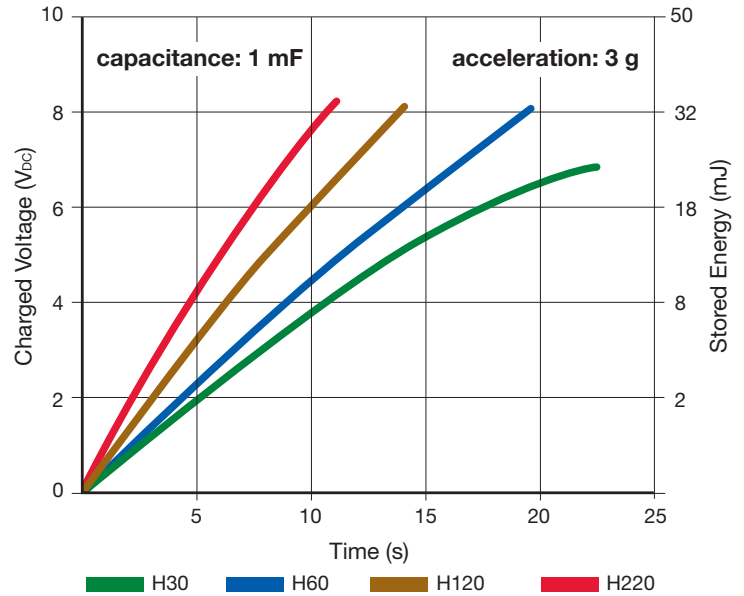
\* Optional 3.3V configurable

\*\* Configurable

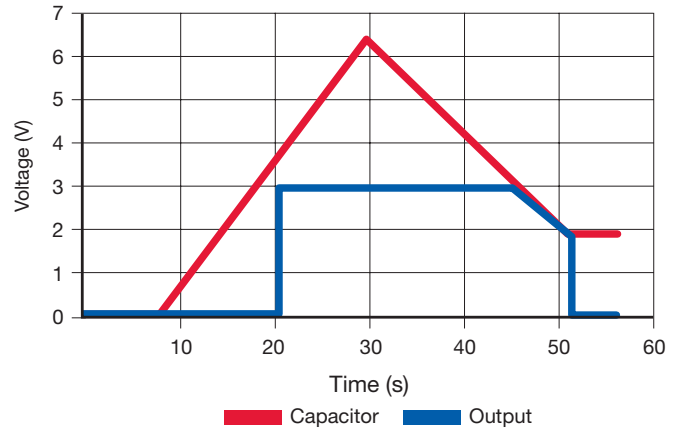
## HARVESTOR-III™ POWER MODULES

Model	Part Number
H30	FIB-H30
H60	FIB-H60
H120	FIB-H120
H220	FIB-H220

## POWER HARVESTING/CHARGING PERFORMANCE



## LATEST GENERATION ENERGY MANAGEMENT CIRCUIT: CHARGING & REGULATED VOLTAGE OUTPUT



## ENERGY HARVESTING DEPLOYMENT EXAMPLE

