

# BIOSMART<sup>®</sup> TECHNOLOGIES

## 1. Product Name

■ BioSmart Radiant Infrared Wall Systems

## 2. Manufacturer

BioSmart Technologies, LLC  
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## 3. Product Description

BioSmart Technologies has been producing infrared heating products since 2004. The technology used is state-of-the-art industrial ceramic plate technology enclosed in an insulated, patented heating chamber that produces dark field infrared waves, especially those in the 4-12 micron range. This enables the heat generated by the system to penetrate the walls, floors, and ceiling evenly within a given space without temperature deviations. The heat is absorbed quickly by the objects and surfaces in the room which radiate the energy back into the room. Less heat escapes through the exterior walls and windows resulting in a net energy savings of 25-35% over conventional heating systems that utilize electrical power. In most areas of the U.S. BioSmart radiant infrared heating systems are more economical and cost less to operate compared to heat pumps, propane, heating oil, or natural gas.

BioSmart radiant infrared heating units are designed to be installed in each room and are controlled by a millivolt thermostat or any HVAC thermostat or smart thermostat such as a NEST or ECOBee. They are compatible with all programmable WIFI thermostats or they can be controlled through a centrally controlled relay board coupled to a wireless APP or hard wired computer system.

BioSmart radiant infrared wall units have a depth of 3.5 inches and are designed to fit into conventional wall systems between the studs. They may be mounted high or low on the wall or into the ceiling provided there is a minimum 4/12 pitch.

Most BioSmart units offer virtually silent operation making them preferable to HVAC if fan noise is an issue.

### Basic Uses

The heating units come in various sizes ranging from 500 watts to 1500 watts and are designed for zoned heating applications where individual rooms can be controlled separately thus increasing the energy savings achieved.



### Applications include:

- Affordable housing
- Residential remodel & retrofitting
- HVAC replacement
- Luxury homes
- Condominiums
- High rise apartments
- Extended care facilities
- Nursing homes
- Offices
- Hotels & Motels
- School rooms
- Hospitals
- Offices

### Types

There are several types of BioSmart Radiant infrared heating units

- Heating units designed for external millivolt thermostat control or WIFI compatible smart thermostat.
- Heating units designed with internal thermostat controls.
- Heating units with UV and TIO2 air purification designed for external millivolt thermostat control or WIFI compatible smart thermostat.
- Heating units with UV and TIO2 air purification designed with internal thermostat controls.

## Bio-500

Cabinet	All metal - 22 & 24 gauge with synthetic, paintable shell
Weight	8 lbs
Dimensions	20 1/2" x 4 3/4" x 4" (HxWxD)
Power Requirements	120 or 220 volt AC
Power Consumption	6.3A @ 120 volt, 3.4A @ 220 volt, 1500 watt
Safety Cut-Off	Prevents damage to the unit
Life Expectancy	25+ Years
Zoned Heat Capability	Pre-wired - simple two-wire contact to any zone control panel
Heat Type	Therapeutic far infrared heat
Heat Chamber	Copper-lined for maximum ion transfer
Heating Elements	1 -500 watt ceramic far infrared emitters
Infrared Emitter Life Expectancy	40,000 hours
Heat Output	2,800 BTU infrared heat
Fan System	1 high volume, low noise 90mm DC Fan
Fan Noise Level	38 dB
Chassis Safety Insulation	Exceeds all government and independent laboratory standards for safety in an installed heating appliance (a safety standard that exceeds other manufacturer's specifications).
Internal Ceramic Blanket	Provides R45 insulation between the wall and the heater. The heater cabinet remains cool to the touch while delivering warm (105° C) far infrared heat into the room.
Thermostat Type	Any standard digital, programmable or mechanical (no in line high voltage)
Listed Approvals	C-TUV-US (International UL Equivalent)
Warranty	5-Year limited



## Bio-1000F

Heat Type	Therapeutic infrared heat
Weight	13 lbs
Dimensions	12 5/8" x 4" x 16" (WxDxH)
Power Requirements	120 or 220 volt AC
Power Consumption	1000W - 9A @ 120 volt, 4.5A @ 220 volt; 1200W - 10A @ 120 volt, 5.5A @ 220 volt,
Heat Chamber	Copper-lined for maximum ion transfer
Heating Elements	2 ceramic far infrared emitters
Infrared Emitter Life Expectancy	60,000 hours
Heat Output	4,000 - 4,800 BTU infrared heat
Fan System	3 high volume, low noise 90mm DC Fans
Fan Noise Level	18 dB - practically silent
Life Expectancy	25+ Years
Cabinet	All metal - 22 & 24 gauge with synthetic, paintable plastic front cover
Internal Ceramic Blanket	Provides R 45 insulation between the wall and the heater. The heater cabinet remains cool to the touch while delivering warm (105° C) far infrared heat into the room.
Chassis Safety Insulation	Exceeds all government and independent laboratory standards for safety in an installed heating appliance (a safety standard that exceeds other manufacturer's specifications).
Thermostat Type	Any standard digital, programmable, or smart thermostat is compatible
Safety Cut-Off	High-limit switch with manual reset prevents damage to the unit
Zoned Heating	Can be controlled singly or in parallel with multiple units by any low-voltage computer terminal relay board, control panel, or WiFi thermostat.
Listed Approvals	C-TUV-US (International UL Equivalent)
Warranty	5-Year limited



## Bio-1500FTA

Heat Type	Therapeutic infrared heat
Weight	13 lbs
Dimensions	12 5/8" x 4" x 16" (WxDxH)
Power Requirements	120 or 220 volt AC
Power Consumption	1000W - 9A @ 120 volt, 4.5A @ 220 volt; 1200W - 10A @ 120 volt, 5.5A @ 220 volt,
Heat Chamber	Copper-lined for maximum ion transfer
Heating Elements	2 ceramic far infrared emitters
Infrared Emitter Life Expectancy	60,000 hours
Heat Output	4,000 - 4,800 BTU infrared heat
Fan System	3 high volume, low noise 90mm DC Fans
Fan Noise Level	18 dB - practically silent
Life Expectancy	25+ Years
Cabinet	All metal - 22 & 24 gauge with synthetic, paintable plastic front cover
Internal Ceramic Blanket	Provides R 45 insulation between the wall and the heater. The heater cabinet remains cool to the touch while delivering warm (105° C) far infrared heat into the room.
Chassis Safety Insulation	Exceeds all government and independent laboratory standards for safety in an installed heating appliance (a safety standard that exceeds other manufacturer's specifications).
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## Color & Finish

BioSmart Radiant infrared wall units come standard with an antique white semi-gloss finish on the front grill. This finish readily accepts any designer color required to match interiors.

## Benefits

- Lower installation costs.
- Lower maintenance costs.
- Designed to last 25+ years, that's over 100,000 hrs.
- No cross contamination, bacteria, mold, or dust through ductwork.
- Provides heat where and when you need it.
- Provides sterile, moist, clean therapeutic heat.
- Energy savings of 25-35%.
- Zoned heating options that can be controlled from anywhere or pre-programmed through a smart phone to increase energy savings.
- Infrared heat is more comfortable and therapeutic for infants and the elderly.

## Options

BioSmart Radiant Infrared heating units come in both 120 and 230 volt configurations. It is recommended that for maximum efficiency 230 volts systems are preferred.

## 4. Technical Data

### Certifications & Approvals

- C-TUV-US
- RoHS
- CE

## 5. Installation

### Preparatory work

- Remove unit from shipping box and inspect for damage.
- Register warranty information with BioSmart.
- New construction – prepare vertical wood or steel stud supports spaced 13" apart for installation of heater unit. Unit may be placed low or high on the wall not to exceed less than 12" from, the floor or ceilings. Heating units may be mounted in cathedral ceilings having a minimum 4/12 pitch.
- Retrofit projects – cut a hole 13"W x 16"H in the sheetrock at the desired location, preferably between to existing studs. Select a location where an appropriately sized power line can be obtained.

## Precautions

- Heating unit should be installed by a licensed electrician or HVAC installer.

## Method

- Install appropriate mounting brackets to heating unit with supplied hardware.
- Remove fan baffle at bottom of heating unit to expose terminal blocks.
- Run an appropriately sized wire into the bottom of the heating unit and connect to appropriate terminals.
- Connect the two thermostat wires to the appropriate terminal block.
- Reinstall the fan baffle and front cover.
- Note: If a 24 volt smart thermostat is being utilized, install the power module accessory at the base of the heating unit prior to connecting the thermostat wires. This module will allow the introduction of a "C" wire to provide power to the Smart or WIFI thermostat.

## Building Codes

- Ensure that installation complies with the requirements of all applicable local, state and federal code jurisdictions.

## 6. Availability & Cost

BioSmart radiant infrared heating systems are sold direct and through authorized dealers and distributors in the U.S. Contact BioSmart for cost information within a specific region.

## 7. Warranty

Limited 5 year warranty - see warranty for details.

## 8. Maintenance

BioSmart radiant infrared heating systems require periodic cleaning of the air intake grill and fan assembly. It is recommended that this procedure be followed annually before a new heating system begins. Vacuuming the fan assembly and front grill with a conventional brush attachment is sufficient to accomplish the task.

## 9. Technical Services

Technical assistance, including detailed information, product literature, test results, and project assistance in preparing project specifications is available from BioSmart.

## 10. Product Information

Detailed additional product information is available from the manufacturer upon request.

# 11. Thermostat Options & Controls

BioSmart In-Wall heating systems are compatible with many thermostat options, including those below or their equivalent:

### ■ Conventional Millivolt Thermostats

Honeywell TS812A

Honeywell TH1100DV1000



### ■ Programmable HVAC Thermostats

Honeywell RTH111B

Honeywell RTH2300B



### ■ WiFi Thermostats

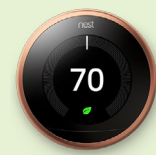
Honeywell RTH6580WF



### ■ Smart Thermostats

EcoBee

Nest



### ■ WiFi Relays

NCD WiFi Relay

NCD R120PL\_WIFI



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