



SPECTRUM™ Multi-Temperature System

Featuring the new fuel-saving Smooth Air™ Blower system.





SPECTRUM multi-temperature systems lead the way in **advanced cargo protection.**

Thermo King's temperature control systems for trailers usher in a new era in transport refrigeration. Fueled by growing concerns over temperature inaccuracy and contamination of perishable food products, governments and customers worldwide are demanding tighter control and more accurate monitoring of temperatures throughout the "cold chain." Regulatory bodies have become industry partners in this effort, creating the Hazard Analysis Critical Control Points (HACCP) as a means of control.


At the same time, transport companies continually seek greater fuel efficiency, along with systems that run quietly and are easy to operate. The new SPECTRUM system meets these new challenges head-on, by incorporating the latest technology and innovation into the industry's most advanced temperature control system. Reliability, temperature control, fast pull down, ease of use, fuel efficiency, quiet operation ... they're all here. The SPECTRUM systems do it all ... and nobody does it better.

SPECTRUM™ Features:

- High performance
- Low fuel consumption
- Whisper™ Quiet operation
- Smart Set™ control for optimum temperature control
- Smart Reefer 2™ (SR-2) controller
- Easy to operate
- Easy to monitor
- Low maintenance
- Hybrid option

Thermo King is the Environmental Leader

Thermo King offers industry-leading products and solutions that enable businesses around the world to reduce energy consumption and costs and decrease harmful environmental emissions.

The  symbol indicates a feature that delivers a significant environmental advantage over previous models or the competition.

Easier than ever to perform a yard check.

The SR-2 controller provides an enlarged display screen with an oversized display of the cargo temperature and system setpoint value. This simple but effective feature allows for a quick check of units in the yard. At a glance you can verify that equipment is functioning properly. In addition, Thermo King's optional remote status light also offers that instant assurance that your system is running as it should.

Optional Rear Remote Control.

- Convenient location for operator
- Set/check all temperatures
- Turn each zone on or off

SmartPower™ Electric standby saves fuel and reduces emissions.

The SPECTRUM with optional SmartPower electric standby allows the unit to run on electric power, reducing emissions and saving fuel.

Reduced Maintenance

EMI-3000, Extended Maintenance Interval includes a special 12,000 hour coolant and high grade mineral oil to significantly extend service life.

- Reduces clean up and disposal costs
- Reduces environmental impact with less spillage and less waste
- Extends engine life
- Reduces maintenance cost up to 45% over competitive models
- Contributes to less operating cost
- This highly touted package features specially designed oil, fuel and air filters

Meeting the challenge of product integrity.

SPECTRUM Incorporates Thermo King's exclusive Whisper™ Quiet technology.

With noise pollution becoming an increasing problem, the Whisper technology built into every SPECTRUM unit offers welcome added value. What makes it whisper quiet? Special Whisper quiet sound deadening components like an extremely quiet engine, tuned intake resonator, special exhaust system and muffler soundproof material, special door gaskets and sound-absorbing door provide a refrigeration system that's a full ten decibels quieter than standard competitive units. As an example, it would take the noise level of ten SPECTRUMS, all operating at the same time, to equal the noise level of one standard competitive unit.

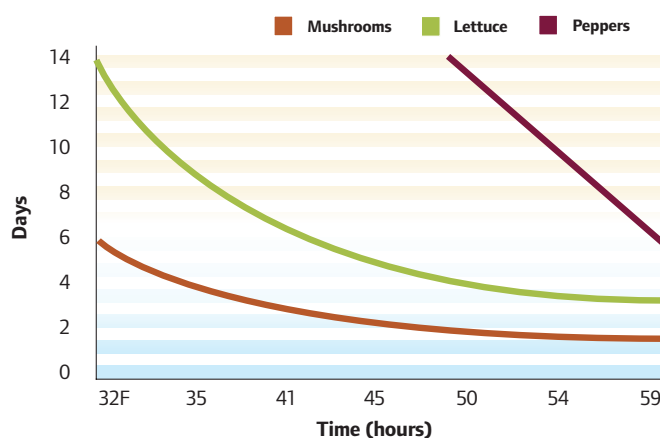
Faster pull down and recovery

It's simple math. The faster you can get the trailer temperature pulled down to the required level for the cargo, the faster you can load and be on the road. SPECTRUM systems achieve the fast recovery through increased capacity - up to 35% more - which results in a 20% faster pull down. Aside from reduced wait time, that also means improved shelf life of perishable products and less fuel consumption because of reduced unit run time.

Tighter control.

Tight temperature control in food storage and distribution is essential to ensure food safety and quality. Small variations in temperature can significantly affect the shelf life of sensitive produce. For example, a difference of 1°F can reduce the shelf life of lettuce by approximately a day.

Temperature Control and Shelf Life

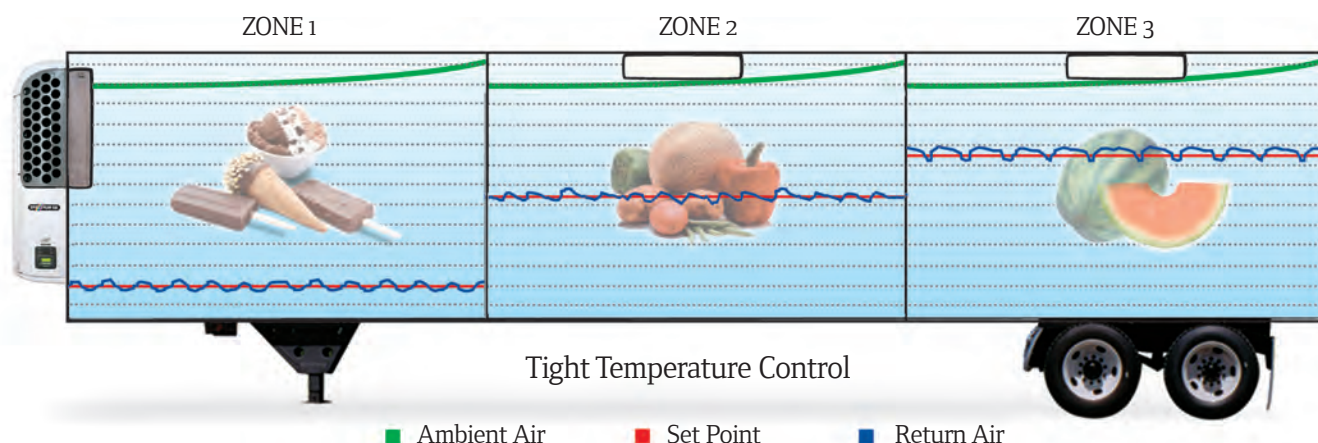


SPECTRUM provides perfect temperature balance in up to three different zones.

Thermo King's Smart Set™ is one of the latest advancements and typical of Thermo King technology – deriving an additional benefit while improving on another. Fresh cargo has always had an advantage with a Thermo King refrigeration unit. With Smart Set, fresh cargo receives precise temperature control. In addition, reduced fuel consumption is realized at all

operating ranges. Cool moist air circulates throughout the entire cargo area, thereby keeping dehydration to a minimum and allowing fresh produce to be delivered in the freshest state.

The illustration below shows a host unit and two separate remote evaporators maintaining tight control in three zones.





The powerful, SR-2 controller offers not just temperature control, but

Total Temperature Management.

Extremely easy to use, simple text display for:

- Changing setpoint
- Customer selectable alarms
- System performance monitoring
- Start of trip
- Viewing all zones at the same time

Enhanced safety and security for load protection is even more effective with:

- Keypad with lock-out
- Mode-lock
- Phase-correction
- Diesel/electric auto switching
- Setpoint warning
- Analyze and store data using Wintrac® software

So smart it can speak 21 languages with a multi-lingual text menu:

- Records all operational parameters
- English, Spanish, French, German, Italian, Dutch, Danish, Norwegian, Swedish, Finnish, Russian, Plus 10 other languages

CargoWatch™ provides temperature and system data for HACCP plan.

- 6 temperature sensors/probes
- 4 door switches
- Humidity sensor
- Data averaging
- Programmable, temperature out-of-range alarms (optional)

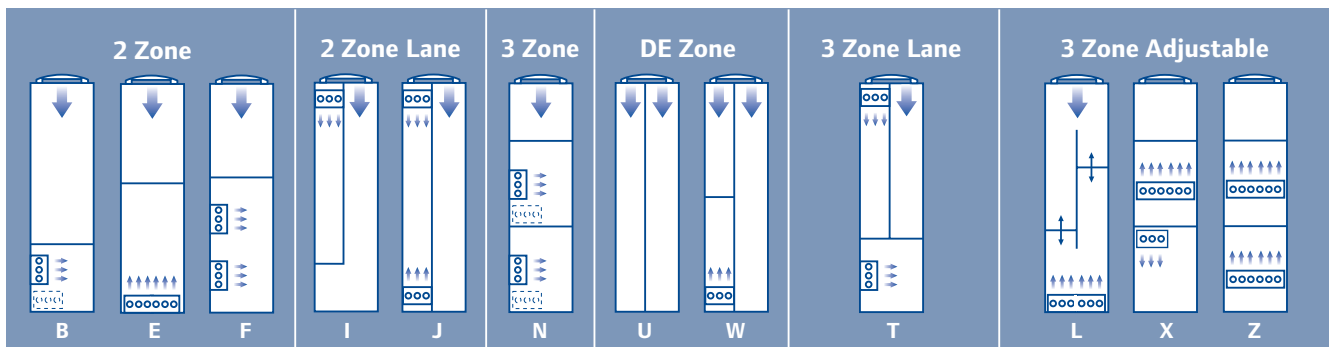
ServiceWatch™ built in preventative maintenance logger is standard.

- Provides improved diagnostics
- Keeps track of system performance and functionality

Improved diagnostics to understand and respond to problems including:

- A comprehensive listing of alarm codes with text descriptions
- Customer-selectable alarms
- A service test mode

SPECTRUM™ Multi-Temperature Zone Plans



Key Features and Options

Standard

Smart Reefer 2™ controller
 SmartSet™
 Smooth Air™ Blower assembly
 EMI-3000
 Whisper™ Quiet technology
 Long-life coolant/silicone hoses
 SmartPower Electric Standby
 Pre-Filter fuel filtration system
 Standard unit color white
 Standard grille color black
 Directional air delivery
 Vibration isolation system
 Aluminum undermount
 fuel tank 50 gal. (186 liter)
 Alternator, 120 Amp, 12 Vdc (SB)
 Alternator, 60 Amp, 12 Vdc (DE)
 CargoWatch™
 Service Watch™

Options (Factory Installed)

Remote status light
 Special color grilles white or gray
 Fuel heater
 Frost plug heater
 Fresh Air Exchange
 Spectrum S-3 Remote EVAP

Options (Dealer Installed)

Thermo King bulkhead
 Rear remote control
 Electronic door switches
 EON battery
 Ultra Sonic fuel sensor



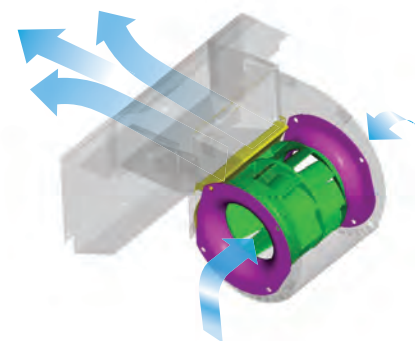
All-New Ultra Sonic Fuel Sensor

Utilizing ultra sonic technology for more accurate fuel readings, this new sensor comes installed in the fuel tank and delivers the following benefits:

- Reduces out-of-fuel shutdowns
- Reduces load loss claims
- Accurately monitors fuel consumption during detached operation

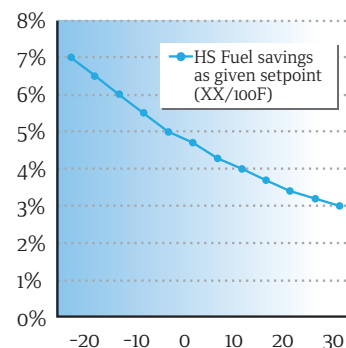
SmoothAir™ Blower Lowers Fuel Usage by up to 7%

Thermo King's innovative new evaporator blower assembly saves fuel while increasing capacity:



- Up to a 7% fuel savings
- 4% greater capacity
- Improved pull-down for reduced runtime
- 24% less power required

A more efficient blade design allowed for a smaller blower assembly. Smoother air inlets mean less friction and less energy consumed, resulting in increased capacity.



Remote evaporators make each temperature zone like an individual trailer.

Designed with high airflow and large capacity, the SPECTRUM S-3 Remote Evaporator is the perfect complement to the SPECTRUM host units. Like a Thermo King host unit it was also built to last being both durable as well as efficient.

Return Air To Evaporator	Btu/hr	Watts
35°F (1.7°C)	29,600	8,675
0°F (-17.8°C)	18,400	5,395
-20°F (-28.9°C)	11,950	3,500

Airflow=1200 CFM

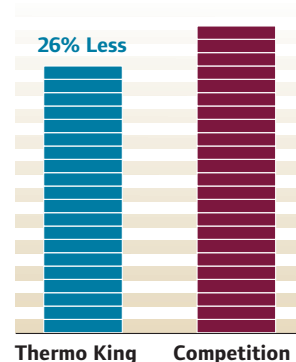
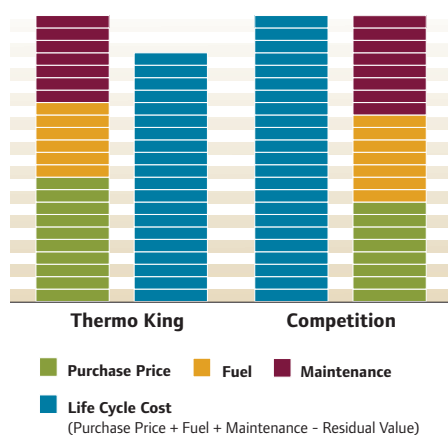


The most economical multi-temperature systems available.

You want performance to protect your load and power to accelerate your cycle times. But at what price?

The combination of price together with fuel costs, maintenance costs and resale value defines the equipment's Total Life Cost. The low fuel consumption of our SPECTRUM systems, our fixed cost maintenance contracts and our superior resale value mean you can have the best for less.

Fuel contributes around 40% of the total life cost of a temperature control system. Competitive products can consume over 20% more fuel. That's 20% higher fuel costs. A typical SPECTRUM is up to 100 lbs. lighter than its nearest competitor. That means less wear and tear on the tractor/trailer. And more revenue generating payload before you weigh out.



Innovative Fuel Management with our Exclusive Pre-Filter System

Pre-Filter

Protect the unit from damage caused by particulates suspended in your fuel system.

- ✓ Designed for ultra-low sulfur fuels
- ✓ Reduces road calls caused by poor quality fuels
- ✓ Clear bowl allows for visual filter checks
- ✓ Spin-on bowl for easy maintenance
- ✓ Extends life of primary fuel filter



EMI-3000 Primary Filter

5-micron filter traps more harmful particles.

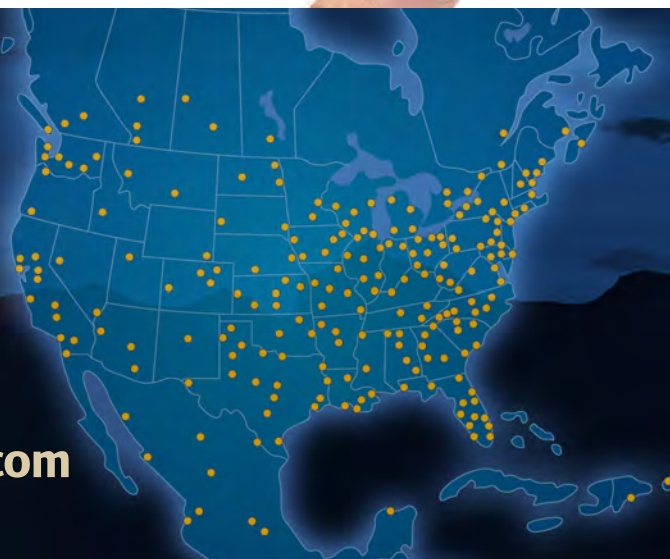
- ✓ Extends engine life
- ✓ Lower maintenance costs than competitive models
- ✓ 3000-hour filter life



Expert Service and Support are as close as this sign.

Enjoy the support of the Thermo King Dealer Network.

Over 200 factory-authorized service centers nationwide-
find one nearby at www.thermoking.com



System Performance

Description

High-capacity, frontmount, diesel or diesel/ electric-powered cooling and heating units in combination with remote evaporators allowing for multiple temperature zones inside the same trailer.

Models available

SPECTRUM SB Model 30, SB Model 50 with SmartPower Electric Standby and DE Model 30: Cooling and heating on engine operation using R-404A refrigerant

Operation

- Continuous run/Cycle-Sentry™
- Automatic defrost initiation
- Programmable defrost timer

Engine

TK486V direct-injection diesel

- Four-cylinder, liquid-cooled
- API classified CI mineral oil after break-in
- 15 qt (14.2 liter) oil capacity
- 34.0 hp rating operating at 2200 rpm
- 3000 hour maintenance intervals
- Meets EPA emissions requirements for Tier 2 through 2007 and Interim Tier 4 through 2012 (applies to units with an engine serial number beginning with "V" or manufactured after April, 2005)

Compressor

- Model X430L
- 30.0 cu in (491.6 cm³) displacement
- High-strength forged crankshaft
- Lightweight, aluminum alloy body, heads and sump
- Replaceable cylinder liners
- Vanasil® ringless pistons
- Gerotor oil pump

Refrigeration capacities

System net cooling capacity at 100°F (38°C) ambient and high-speed engine operation.

SPECTRUM SB

Diesel	Btu/hr
35°F (1.7°C).....	51,000
0°F (-17.8°C)	31,000
-20°F (-28.9°C).....	20,000

SmartPower	Btu/hr
35°F (1.7°C).....	32,000
0°F (-17.8°C)	24,000
-20°F (-28.9°C).....	14,000

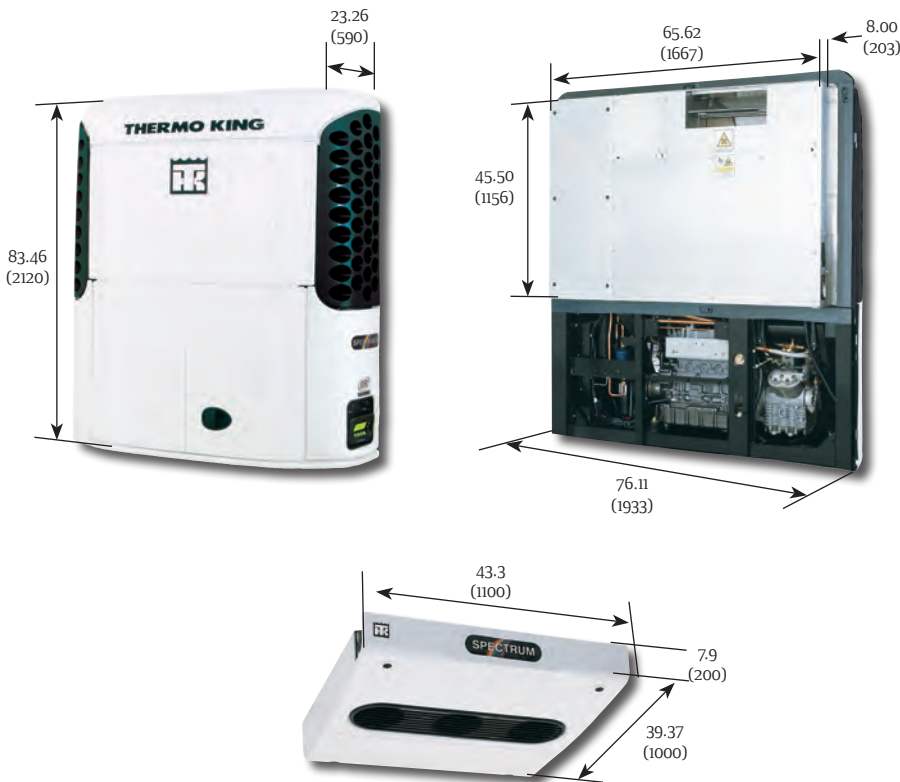
SPECTRUM DE

Diesel	Btu/hr
35°F (1.7°C)	45,000
0°F (-17.8°C)	29,000
-20°F (-28.9°C).....	17,200

Specifications

Dimensions

Inches (Millimeters)



Weight

SPECTRUM SB 30/DE
1645 lbs (746 kg)

SPECTRUM SB 50
1885 lbs (855 kg)

Fuel tank, 50 gallon
35 lbs (16 kg)

Warranty

Terms of the Thermo King Warranty are available on request from your local Thermo King dealer.



Ingersoll Rand's Climate Solutions sector delivers energy-efficient HVACR solutions for customers globally. Its world class brands include Hussmann, a manufacturer of refrigeration and food merchandising solutions, Thermo King, the leader in transport temperature control and Trane, a provider of energy efficient heating, ventilating and air conditioning systems, building and contracting services, parts support and advanced controls for commercial buildings and homes.

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