

 **Cata-Dyne**[™]
Explosion-Proof Gas Catalytic Heaters

Infrared Gas Catalytic Heaters

Enclosures

Line Heaters

Systems and Accessories

 **CCI Thermal**
Technologies Inc.
Heating and Filtration Solutions

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CCI Thermal Technologies Inc. is a leader in advanced heating solutions. We offer our customers the broadest based industry knowledge, expertise and industrial heating products. In addition to our focus on product quality, we are setting a new industry standard for customer service.

At our facilities across North America we manufacture five of the top brands in industrial heating:

- Cata-Dyne™ - Explosion-Proof Gas Catalytic Heaters
- Ruffneck™ - Heaters for the Harshest Environments
- Caloritech™ - Engineered Electric Heat
- Norseman™ - Electric Explosion-Proof Heaters
- DriQuik™ - Curing Solutions

Cata-Dyne™, gas catalytic explosion-proof heaters are available in various models with BTU ratings ranging from 1,000 to 48,000 BTU/hr (0.3 kW - 14.0 kW). In addition, these heaters can be banked together to obtain any BTU (kW) rating desired. CCI Thermal's Cata-Dyne™ heaters are competitively priced, simple to install and operate, and require minimal maintenance under normal operating conditions. These heaters are economical to operate and highly efficient.

We invite you to visit www.ccithermal.com to view the broad range of innovative industrial heating products manufactured by CCI Thermal Technologies Inc.



Edmonton, Alberta



Oakville, Ontario



Orillia, Ontario

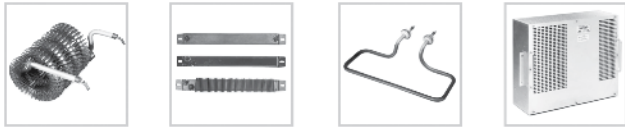


Greensburg, Indiana

Catalogs at a Glance

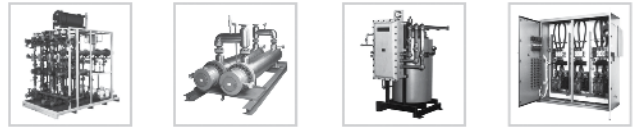
Caloritech™ Catalog: Section A Elements and Specialty Heaters

calvane heaters, tubular heaters,
bolt heaters, tubular band heaters,
mitosis heaters, finned tubular heaters,
cartridge heaters, strip and finned strip
heaters, hot plate/drum heaters, cast-in
heaters, transit heaters.



Caloritech™ Catalog: Section D Engineered Products

circulation heaters, heat transfer
systems, custom engineered
products, panel heaters, control
panels, technical data.



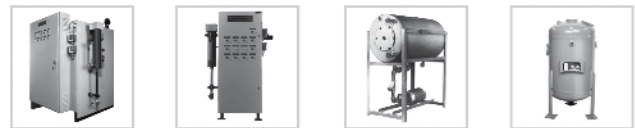
Caloritech™ Catalog: Section B Immersion Heaters

screwplug heaters, domestic
immersion heaters, urn heaters,
flange heaters, over-the-side heaters,
pipe insert heaters, gate and gain
heaters.



Caloritech™ Catalog: Section E Boilers

hot water boilers, steam boilers,
condensate receiver packages, blow
off tanks, packaged circulation
heaters, calorifiers.



Caloritech™ Catalog: Section C Air and Space Heaters

infrared radiant heaters, panel
heaters, convection heaters,
commercial and explosion-proof
duct heaters, unit heaters, gate and
gain heaters.



Caloritech™ Catalog: Section F Controls

electronic controls, industrial
thermostats, explosion-proof
thermostats, thermostats,
thermoswitches,
thermocouples and thermowells,
x-Max® explosion-proof housings.



Cata-Dyne™ Catalog

explosion-proof infrared gas catalytic heaters, high temperature industrial infrared heaters, infrared gas catalytic heating systems, accessories.



Ruffneck™ Catalog

explosion-proof electric air heaters, heat-exchanger unit heaters, corrosion-resistant washdown unit heaters, convection heaters, thermostats.



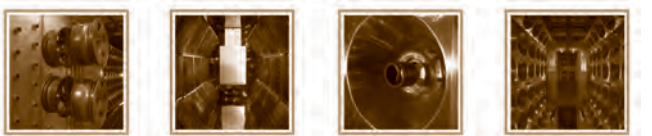
Norseman™ Catalog

natural convection explosion-proof heaters, forced air explosion-proof heaters, thermostats.



DriQuik™ Catalog

long, medium and short wavelength infrared ovens and emitters, dusters, cooling tunnels and control panels.

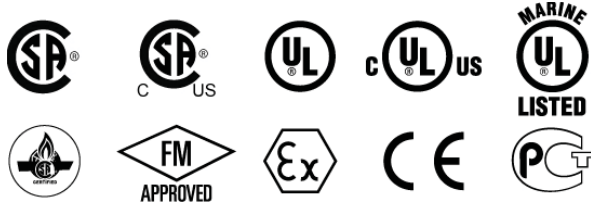


Putting Safety First

CCI Thermal has always been committed to the safety and well being of our customers.

We are familiar with the safety regulations of heating products in a wide variety of environments and ensure that our products meet or exceed the requirements for their applications.

CCI Thermal takes great pride in its lines of certified products.



Visit us at www.ccithermal.com

Our web site offers on-line PDF catalogs, product specifications, installation manuals, and technical documentation 24 hours a day. Additionally, you will find easy access to anyone of our factory representatives, regional sales managers or customer service personnel.

Quality

All our business processes are steered by the principles of ISO 9001:2000, providing an operational framework that places emphasis on continual improvement and customer satisfaction.



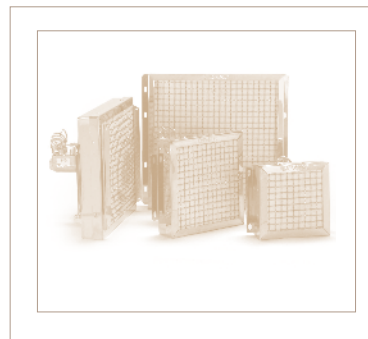
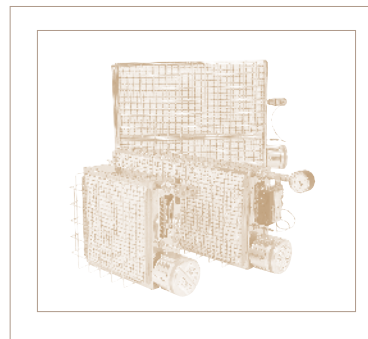
Cata-Dyne™

Explosion-Proof Infrared
Gas Catalytic Heaters

The Industry Standard

Cata-Dyne™ heaters boast the most efficient conversion of hydrocarbon fuels to infrared energy compared to any competitive brand on the market today, with over a quarter of a million units in service during our 40-year history and an exceptional safety record.

Designed for both hazardous and non-hazardous applications, Cata-Dyne™ is the benchmark in innovation for space or spot heating.



Cata-Dyne™

By CCI Thermal Technologies Inc.

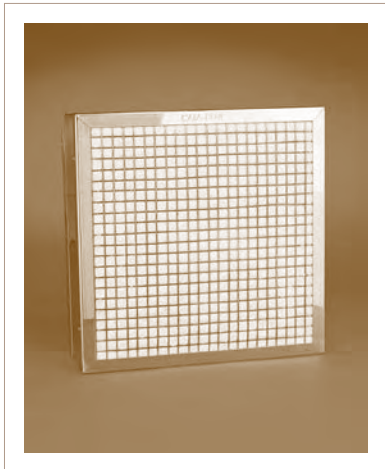
Customer Care

CCI Thermal's state of the art, 105,000 square foot, Edmonton manufacturing facility is designed to ensure our worldwide customer base of the most efficient explosion-proof and general purpose infrared gas catalytic heaters and heating systems for use in industrial heating. We are the only fully integrated infrared gas catalytic manufacturing plant in the world, sharing our unique technology and manufacturing techniques with three other manufacturing facilities. This enables us to exert greater quality control over our product lines and allows us to respond quickly to our customer's special heating application needs.

CCI Thermal has set the industry standard for total quality customer service by offering same or next day product delivery. We also refurbish "well used" heaters into "like new" condition in our repair service center.

Every heater manufactured or repaired by CCI Thermal undergoes stringent safety and performance testing in accordance with all applicable Safety Certification standards including CSA, FM and CE/ATEX. Our ongoing

commitment to the safety and well being of our customers includes free product safety instruction sessions by our field sales professionals covering everything from an overview of basic infrared technology to detailed explanations on how our unique Cata-Dyne™ catalytic technology works.



Infrared Technology

- Infrared is smart. It heats only what needs to be heated: personnel or equipment within a facility, not the surrounding air.
- Infrared is direct. It takes less time and energy to do the job.
- Infrared is versatile. It handles a large variety of process and space heating applications.
- Infrared is environmentally friendly, helping you surpass today's ever-tightening standards.

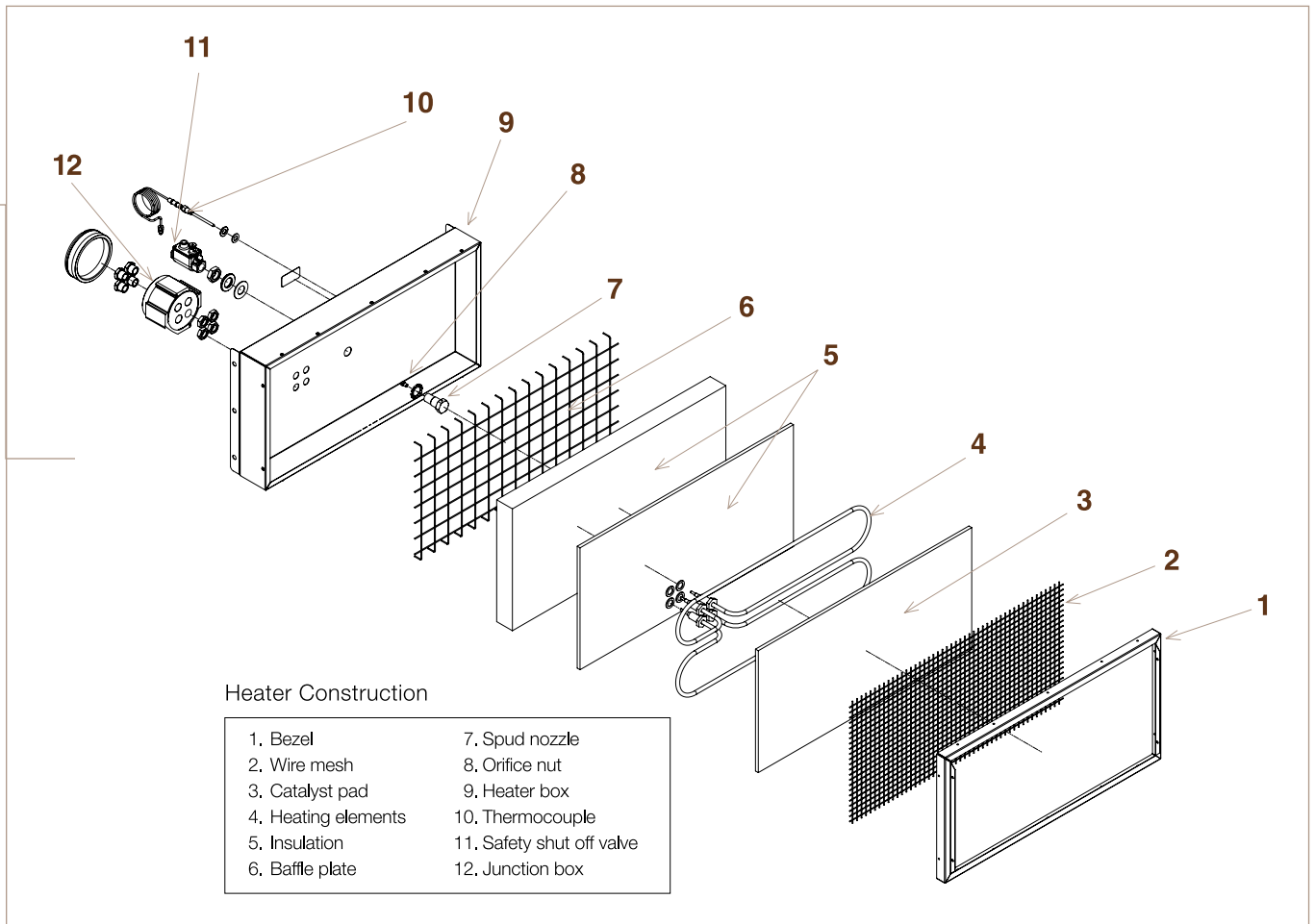
Infrared radiation is a form of electromagnetic energy that is generated by the vibration and rotation of atoms and molecules within all objects with temperatures above absolute zero (0°Kelvin; -459°F; or -273°C).

Electromagnetic energy, which travels at the speed of light, is comprised of waves that can be measured both electrically and magnetically.

Infrared (literally meaning below or beyond the red) is located between the visible and microwave portions of the electromagnetic spectrum and shares many of the same properties of visible light, except it has a longer wavelength. When infrared waves encounter a solid object they can be reflected (bounced off), diffracted (scattered), refracted (bent), transmitted (pass through), or absorbed by the object. Several of these effects can take place at the same time.

How Our Cata-Dyne™ Operates

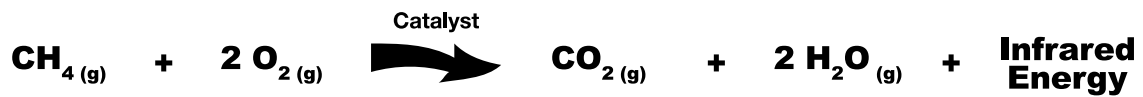
- Power is applied to the electrical elements which provide the required 250°F/120°C preheat temperature for the catalyst pad.
- Fuel enters the rear of the heater through an orifice and a gas distribution system.
- The baffle plate prevents the insulation from choking off the fuel entry points.
- The first layer of insulation allows the fuel to build up enough pressure to provide even gas distribution throughout the heater.
- The fuel passes through the heater insulation and comes in contact with the under side of the catalyst.
- With the catalyst pad at the preheat temperature, the fuel is converted into infrared energy.



How the Catalyst Works

- Once the catalyst pad has reached the activation temperature of 250°F/120°C, the pad is ready to emit infrared energy.
- Natural gas or propane and atmospheric oxygen chemically react with the proprietary catalyst in the pad.
- The reaction creates infrared energy with water & carbon dioxide as by-products.
- The fuel should be clean dry gas; contaminants such as hydrogen sulphide, oil and moisture will affect the longevity of the pad.

Natural Gas



Propane



WX Series

Explosion-Proof Catalytic Heater Standard Unit

Our family of Cata-Dyne™ heaters, each incorporating our proprietary explosion proof catalyst pad, comes in three convenient configurations that offer our customers greater space application flexibility.

The Cata-Dyne™ WX Series infrared gas catalytic explosion-proof heaters are the industry standard for hazardous location heating needs. They are available in over twenty, three-inch depth cabinet sizes, with gas, electrical and accessory connections on the back side of the heater. These are the heaters of choice for many of our customers who have come to trust their reliability.

Applications

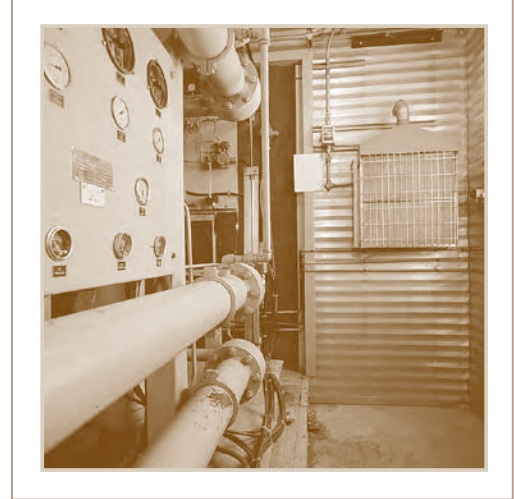
WX Series heaters are used in many different applications that involve spot or space heating where hazardous materials may be present.

These include:

- Comfort heating for industrial buildings and installations.
- Freeze protection for equipment or components.
- Drying or curing processes.

Features

- Heater box constructed of 300 series stainless steel for corrosion protection.
- Cata-Dyne™ proprietary explosion-proof catalyst pad.
- Standard 3/8" NPT gas connections.



- Explosion-proof electrical junction box with standard 3/4" NPT connections.
- Cata-Dyne™ heaters are designed to operate on either natural gas or propane.
- Cata-Dyne™ heaters do not require electrical power to operate once they have been started.
- Our explosion-proof catalytic technology is the most efficient in the industrial heating market.
- Heater contains no moving parts and is designed to operate indefinitely when supplied with air and clean fuel.
- Internal heater components such as our proprietary catalyst pad and preheat Caloritech™ tubular element are manufactured in-house.

Certification

The WX Series Cata-Dyne™ explosion-proof catalytic heaters are approved for the following:

- Canadian Standards Association (CSA) for use in Class I, Division 1 & 2, Group D hazardous locations
- Factory Mutual (FM) for use in Class I, Division 1, Group D hazardous locations. Temperature code T2C at an ambient temperature of 40°C/104°F
- CE marked and ATEX certified

See Table 1 on page 14 for fuel & electrical ratings.

MKII Series

Explosion-Proof Catalytic Heater Side Mount Controls

Our Cata-Dyne™ MKII Series introduced in early 2002 has become a welcome addition to our traditional product offerings. Its sleek side mount controls are ideal for customers seeking to reduce costs with easier and quicker heater installation.

Applications

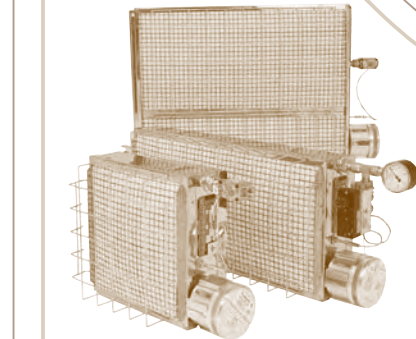
MKII Series heaters are used in many different applications that involve spot or space heating where hazardous materials may be present.

These include:

- Comfort heating for industrial buildings and installations.
- Freeze protection for equipment or components.
- Drying or curing processes.

Features

- Heater box constructed of 300 series stainless-steel for corrosion protection.
- Cata-Dyne™ proprietary explosion-proof catalyst pad.
- Standard 3/8" NPT gas connections.
- Cata-Dyne™ heaters are designed to operate on either natural gas or propane.
- Cata-Dyne™ heaters do not require electrical power to operate once they have been started.
- Our QuikSTART heater technology reaches the catalytic threshold faster, bringing the heater to full operating temperature in half the time.



- Shorter thermocouple is nickel plated with an added polymer sleeve to enhance the corrosion protection for a stronger electromagnetic connection to the safety shut-off valve (SSOV).
- All gas control components as well as all electrical connections are side mounted for easy installation and access.
- Side mounted rating plate for easy visibility.
- Single start up element with the same power and wattage rating as used in the standard WX heaters dual elements.
- Heater contains no moving parts and is designed to operate indefinitely when supplied with air and clean fuel.
- Internal heater components such as our proprietary catalyst pad and preheat Caloritech™ tubular element are manufactured in-house.

Certification

The MKII Series Cata-Dyne™ explosion-proof catalytic heater is approved for the following:

- Canadian Standards Association (CSA) for use in Class I, Division 1 & 2, Group D hazardous locations.
- Factory Mutual (FM) for use in Class I, Division 1, Group D hazardous locations. Temperature code T2C at an ambient temperature of 40°C/104°F

See Table 2 on page 14 for fuel & electrical ratings.

Slim Line Series

Explosion-Proof Catalytic Heater
Thinner Space Saving Unit

The Cata-Dyne™ Slim Line Series is everything our WX Series heater has become renowned for with the added feature of a more compact 1 1/2" thick stainless steel cabinet. This design versatility allows it to be used in both traditional installations and in compact enclosures for valves, regulators and instrumentation.

Applications

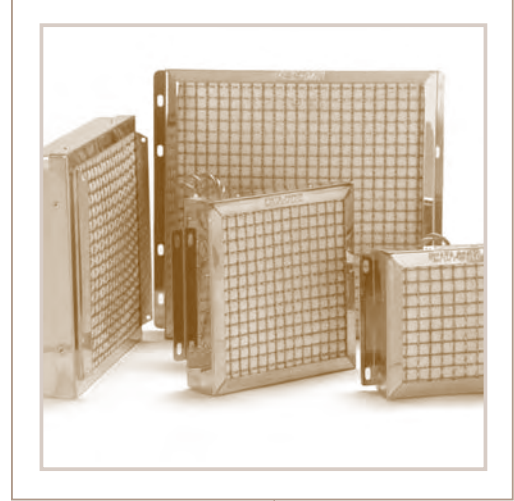
Slim Line heaters are used in many different applications that involve spot or space heating where hazardous materials may be present.

These include:

- Comfort heating for industrial buildings and installations.
- Freeze protection for equipment or components.

Features

- These units are designed to run on either clean natural gas or propane.
- All standard Cata-Dyne™ accessories can be used with the Slim Line models.
- 1 1/2" thinner than the standard Cata-Dyne™ heater.



- Equipped with universal mounting brackets, the heater can easily be mounted into existing facilities or enclosures.
- Heater boxes are constructed of 300 series stainless steel for maximum corrosion protection.
- The units are fitted with standard 3/8" NPT gas connections.
- No power is needed to operate the heaters or their controls once the heater has started and the catalytic reaction has been established.
- Our QuikSTART heater technology reaches the catalytic threshold faster bringing the heater to full operating temperature in half the time.
- Our explosion-proof catalytic technology is the most efficient in the industrial heating market.
- Heater contains no moving parts and is designed to operate indefinitely when supplied with air and clean fuel.
- Internal heater components such as our proprietary catalyst pad and preheat Caloritech™ tubular element are manufactured in-house.

Certifications

- FM, Class I, Division 1, Group D explosion-proof ratings.

See Table 5 on page 16 for fuel & electrical ratings.



Slim Line Series

G Series

Industrial Catalytic Heater

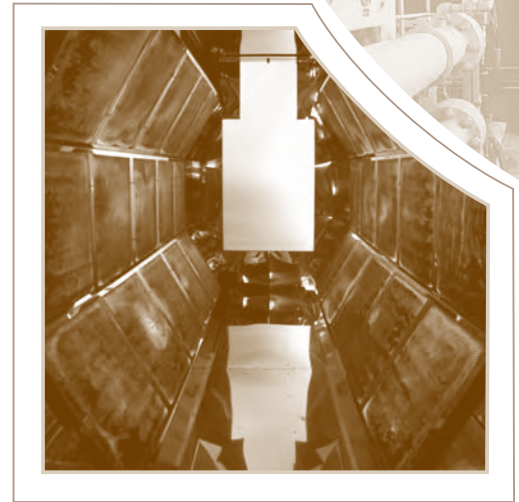
The Cata-Dyne™ G Series infrared gas catalytic heater is designed for use in non-hazardous heating applications such as infrared drying and curing ovens. It is fitted with a patented high temperature catalyst pad, operates on either natural or propane fuel and is available in a wide variety of cabinet sizes.

Applications

- Large surface area of the Cata-Dyne™ heater allows for efficient transfer of infrared heat that can be used in a variety of applications.
 - Facility space heating
 - Process heating
 - Freeze protection
 - Comfort heating for personnel
 - Ovens (see our DriQuik™ catalog for more information)


Features

- All major components produced in our own facilities.
- Patented catalyst manufactured in our Edmonton, Alberta facility.
- Preheat tubular element manufactured in our Orillia, Ontario facility.
- Multiple BTU input ratings and a variety of standard heater sizes available.



- Offered in a variety of preheat voltages.
- Natural gas (NG) or propane (LPG) configurations.
- Choice of manual control or electronic control options (refer to DriQuik™ Catalog).
- Multiple heater mounting bracket configurations are available.
- Heater contains no moving parts and is designed to operate indefinitely when supplied with air and clean fuel.
- Internal heater components such as our proprietary catalyst pad and preheat tubular element are manufactured in-house.

Certifications

- G Series (high performance hot catalytic heater) certified by Canadian Standards Association (CSA) and Factory Mutual (FM) and  (European standards) for non-hazardous area applications.

See Table 6 on page 16 for fuel & electrical ratings.

Fuel and Electrical Rating Data

Table 1 - WX Series - CSA

MODEL NO. Series "X"	Max Gas Input BTU/hr		Max Gas Input kW		Min. Gas Input BTU/hr		Max Gas Flow CFH		Max Gas Flow m ³ /hr		Total Heater Amperage						
	Natural	Propane	Natural	Propane	Natural	Propane	Natural	Propane	Natural	Propane	12V	120V	208V	240V	380V	480V	600V
	WX6x6	1,250	1,000	0.366	0.293	425	250	1.25	0.4	0.0354	0.0113	7.1	0.7	~	0.4	~	~
WX6x12	2,500	2,000	0.732	0.586	850	500	2.5	0.8	0.0708	0.0227	7.1	0.7	~	0.4	~	~	~
WX6x24	5,000	4,000	1.464	1.171	1,675	1,000	5.0	1.6	0.1416	0.0453	15.0	2.1	1.2	1.0	~	~	~
WX6x60	12,500	10,000	3.661	2.929	3,333	2,500	12.5	4.0	0.3540	0.1133	~	~	~	~	~	1.3	~
WX8x8	2,222	1,778	0.651	0.521	593	444	2.2	0.7	0.0629	0.0201	7.1	0.7	~	0.4	~	~	~
WX10x12	4,167	3,333	1.220	0.976	1,111	833	4.2	1.3	0.1180	0.0378	15.0	2.1	1.2	1.0	~	~	~
WX12x12	5,000	4,000	1.464	1.171	1,675	1,000	5.0	1.6	0.1416	0.0453	15.0	2.1	1.2	1.0	~	~	~
WX12X24	10,000	8,000	2.929	2.343	3,300	2,000	10.0	3.2	0.2832	0.0906	30.0	4.2	2.4	2.1	~	1.5	0.9
WX12x36	15,000	12,000	4.393	3.514	4,000	3,000	15.0	4.8	0.4248	0.1359	30.0	5.0	2.9	2.5	1.6	1.3	1.0
WX12x48	20,000	16,000	5.857	4.686	6,675	4,000	20.0	6.4	0.5663	0.1812	30.0	6.7	3.9	3.3	2.1	1.7	1.3
WX12x60	25,000	20,000	7.322	5.857	8,350	5,000	25.0	8.0	0.7079	0.2265	45.0	10.4	6.0	5.2	3.3	2.6	2.1
WX12x72	30,000	24,000	8.786	7.029	8,000	6,000	30.0	9.6	0.8495	0.2718	~	12.1	7.0	6.0	3.8	3.0	2.4
WX18x24	15,000	12,000	4.393	3.514	4,000	3,000	15.0	4.8	0.4248	0.1359	30.0	4.2	2.4	2.1	~	1.5	~
WX18x30	18,750	15,000	5.491	4.393	5,000	3,750	18.75	6.0	0.5309	0.1699	~	~	~	~	~	1.5	~
WX18x36	22,500	18,000	6.590	5.272	6,000	4,500	22.5	7.2	0.6371	0.2039	~	10.0	5.8	5.0	3.2	2.5	2.0
WX18x48	30,000	24,000	8.786	7.029	8,000	6,000	30.0	9.6	0.8495	0.2718	~	13.3	7.7	6.7	4.2	3.3	2.7
WX18x60	37,500	30,000	10.983	8.786	10,000	7,500	37.5	12.0	1.0619	0.3398	~	20.8	12.0	10.4	6.6	5.2	4.2
WX18x72	45,000	36,000	13.179	10.543	12,000	9,000	45.0	14.4	1.2743	0.4078	~	24.2	14.0	12.1	7.6	6.0	4.8
WX24x24	20,000	16,000	5.857	4.686	6,675	4,000	20.0	6.4	0.5663	0.1812	30.0	4.2	2.4	2.1	~	1.5	~
WX24x30	25,000	20,000	7.322	5.857	8,350	5,000	25.0	8.0	0.7079	0.2265	30.0	8.3	2.4	2.1	~	1.5	~
WX24x36	30,000	24,000	8.786	7.029	8,000	6,000	30.0	9.6	0.8495	0.2718	~	10.0	5.8	5.0	3.2	2.5	2.0
WX24x48	40,000	32,000	11.715	9.372	13,350	8,000	40.0	12.8	1.1327	0.3625	~	13.3	7.7	6.7	4.2	3.3	2.7
WX24x60	50,000	40,000	14.644	11.715	16,675	10,000	50.0	16.0	1.4159	0.4531	~	20.8	12.0	10.4	6.6	5.2	4.2
WX24x72	60,000	48,000	17.572	14.058	16,000	12,000	60.0	19.2	1.6990	0.5437	~	24.2	14.0	12.1	7.6	6.0	4.8

Table2 - MKII Series - CSA

MODEL NO. Series "X"	Max Gas Input BTU/hr		Max Gas Input kW		Min. Gas Input BTU/hr		Max Gas Flow CFH		Max Gas Flow m ³ /hr		Total Heater Amperage						
	Natural	Propane	Natural	Propane	Natural	Propane	Natural	Propane	Natural	Propane	12V	120V	208V	240V	380V	480V	600V
	MKII12x12	5,000	4,000	1.464	1.171	1,675	1,000	5.0	2.0	0.1416	0.0566	15.0	2.1	~	~	~	~
MKII12x24	10,000	8,000	2.929	2.343	3,300	2,000	10.0	4.0	0.2832	0.1133	30.0	4.2	~	~	~	~	~
MKII18x24	15,000	12,000	4.393	3.514	4,000	3,000	15.0	6.0	0.4248	0.1699	30.0	4.2	~	~	~	~	~
MKII18x48	30,000	24,000	8.786	7.029	8,000	6,000	30.0	12.0	0.8495	0.3398	~	13.3	~	~	~	~	~
MKII24x24	20,000	16,000	5.857	4.686	6,675	4,000	20.0	8.0	0.5663	0.2265	30.0	4.2	~	~	~	~	~
MKII24x48	40,000	32,000	11.715	9.372	13,350	8,000	40.0	16.0	1.1327	0.4531	~	13.3	~	~	~	~	~



Fuel and Electrical Rating Data - Cont'd

Table 3- WX Series - FM

MODEL NO. Series "X"	Max Gas Input BTU/hr NG & LPG	Max Gas Input kW NG & LPG	Min. Gas Input BTU/hr		Max Gas Flow CFH		Max Gas Flow m ³ /hr		Total Heater Amperage						
			Natural	Propane	Natural	Propane	Natural	Propane	12V	120V	208V	240V	380V	480V	600V
WX6x6	1,250	0.366	425	250	1.25	0.5	0.0354	0.0142	7.1	0.7	~	0.4	~	~	~
WX6x12	2,500	0.732	850	500	2.5	1.0	0.0708	0.0283	7.1	0.7	~	0.4	~	~	~
WX6x24	5,000	1.464	1,675	1,000	5.0	2.0	0.1416	0.0566	15.0	2.1	1.2	1.0	~	~	~
WX6x60	12,500	3.661	3,333	2,500	12.5	5.0	0.3540	0.1416	~	~	~	~	~	1.3	~
WX8x8	2,222	0.651	593	444	2.2	0.9	0.0629	0.0252	7.1	0.7	~	0.4	~	~	~
WX10x12	4,167	1.220	1,111	833	4.2	1.7	0.1180	0.0472	15.0	2.1	1.2	1.0	~	~	~
WX12x12	5,000	1.464	1,675	1,000	5.0	2.0	0.1416	0.0566	15.0	2.1	1.2	1.0	~	~	~
WX12x24	10,000	2.929	3,300	2,000	10.0	4.0	0.2832	0.1133	30.0	4.2	2.4	2.1	~	1.5	0.9
WX12x36	15,000	4.393	4,000	3,000	15.0	6.0	0.4248	0.1699	30.0	5.0	2.9	2.5	1.6	1.3	1.0
WX12x48	20,000	5.857	6,675	4,000	20.0	8.0	0.5663	0.2265	30.0	6.7	3.9	3.3	2.1	1.7	1.3
WX12x60	25,000	7.322	8,350	5,000	25.0	10.0	0.7079	0.2832	45.0	10.4	6.0	5.2	3.3	2.6	2.1
WX12x72	30,000	8.786	8,000	6,000	30.0	12.0	0.8495	0.3398	~	12.1	7.0	6.0	3.8	3.0	2.4
WX18x24	15,000	4.393	4,000	3,000	15.0	6.0	0.4248	0.1699	30.0	4.2	2.4	2.1	~	1.5	~
WX18x30	18,750	5.491	5,000	3,750	18.75	7.5	0.5309	0.2124	~	~	~	~	~	1.5	~
WX18x36	22,500	6.590	6,000	4,500	22.5	9.0	0.6371	0.2549	~	10.0	5.8	5.0	3.2	2.5	2.0
WX18x48	30,000	8.786	8,000	6,000	30.0	12.0	0.8495	0.3398	~	13.3	7.7	6.7	4.2	3.3	2.7
WX18x60	37,500	10.983	10,000	7,500	37.5	15.0	1.0619	0.4248	~	20.8	12.0	10.4	6.6	5.2	4.2
WX18x72	45,000	13.179	12,000	9,000	45.0	18.0	1.2743	0.5097	~	24.2	14.0	12.1	7.6	6.0	4.8
WX24x24	20,000	5.857	6,675	4,000	20.0	8.0	0.5663	0.2265	30.0	4.2	2.4	2.1	~	1.5	~
WX24x30	25,000	7.322	8,350	5,000	25.0	10.0	0.7079	0.2832	30.0	8.3	2.4	2.1	~	1.5	~
WX24x36	30,000	8.786	8,000	6,000	30.0	12.0	0.8495	0.3398	~	10.0	5.8	5.0	3.2	2.5	2.0
WX24x48	40,000	11.715	13,350	8,000	40.0	16.0	1.1327	0.4531	~	13.3	7.7	6.7	4.2	3.3	2.7
WX24x60	50,000	14.644	16,675	10,000	50.0	20.0	1.4159	0.5663	~	20.8	12.0	10.4	6.6	5.2	4.2
WX24x72	60,000	17.572	16,000	12,000	60.0	24.0	1.6990	0.6796	~	24.2	14.0	12.1	7.6	6.0	4.8

Table 4- MKII Series - FM

MODEL NO. Series "X"	Max Gas Input BTU/hr NG & LPG	Max Gas Input kW NG & LPG	Min. Gas Input BTU/hr		Max Gas Flow CFH		Max Gas Flow m ³ /hr		Total Heater Amperage						
			Natural	Propane	Natural	Propane	Natural	Propane	12V	120V	208V	240V	380V	480V	600V
MKII12x12	5,000	1.464	1,675	1,000	5.0	2.0	0.1416	0.0566	15.0	2.1	~	~	~	~	~
MKII12x24	10,000	2.929	3,300	2,000	10.0	4.0	0.2832	0.1133	30.0	4.2	~	~	~	~	~
MKII18x24	15,000	4.393	4,000	3,000	15.0	6.0	0.4248	0.1699	30.0	4.2	~	~	~	~	~
MKII18x48	30,000	8.786	8,000	6,000	30.0	12.0	0.8495	0.3398	~	13.3	~	~	~	~	~
MKII24x24	20,000	5.857	6,675	4,000	20.0	8.0	0.5663	0.2265	30.0	4.2	~	~	~	~	~
MKII24x48	40,000	11.715	13,350	8,000	40.0	16.0	1.1327	0.4531	~	13.3	~	~	~	~	~

Fuel and Electrical Rating Data - Cont'd

Table 5 - Slim Line Series

Heater Size	Max Gas Input BTU/hr NG / LPG	Max Gas Input kW NG / LPG	Min. Gas Input BTUH		Max Gas Flow CFH		Max Gas Flow m3/hr		Total Heater Amperage						
			Natural	Propane	Natural	Propane	Natural	Propane	12 V	120 V	208 V	240 V	380 V	480V	600 V
6x6	1,750	0.513	583	438	1.8	0.7	0.0496	0.0198	7.1	0.7	~	0.4	~	~	~
6x12	3,500	1.025	1167	875	3.5	1.4	0.0991	0.0396	7.1	0.7	~	0.4	~	~	~
6x24	7,000	2.050	2333	1750	7.0	2.8	0.1982	0.0793	15.0	2.1	1.2	1.0	~	~	~
8x8	3,111	0.911	1037	778	3.1	1.2	0.0881	0.0352	7.1	0.7	~	0.4	~	~	~
10x12	5,883	1.708	1944	1458	5.8	2.3	0.1652	0.0661	15.0	2.1	1.2	1.0	~	~	~
12x12	7,000	2.050	2333	1750	7.0	2.8	0.1982	0.0793	15.0	2.1	1.2	1.0	~	~	~
12x24	14,000	4.100	4667	3500	14.0	5.6	0.3964	0.1586	30	4.2	2.4	2	~	~	~

Table 6 - G Series

Heater Size	Max Gas Input BTU/hr NG & LPG	Max Gas Input kW NG & LPG	Min. Gas Input BTUH		Max Gas Flow CFH		Max Gas Flow m3/hr		Total Heater Amperage						
			Natural	Propane	Natural	Propane	Natural	Propane	12 V	120 V	208 V	240 V	380 V	480V	600 V
6x6	1,500	0.439	500	375	1.5	0.6	0.0425	0.0170	7.1	0.7	~	0.4	~	~	~
6x12	3,000	0.879	1,000	750	3.0	1.2	0.0850	0.0340	7.1	0.7	~	0.4	~	~	~
6x24	6,000	1.757	2,000	1,500	6.0	2.4	0.1699	0.0680	15.0	2.1	1.2	1.0	~	~	~
6x60	15,000	1.025	5,000	3,750	15.0	6.0	0.4248	0.1699	~	~	~	~	~	1.3	~
8x8	3,500	1.025	1,200	1,000	3.5	1.4	0.0991	0.0396	7.1	0.7	~	0.4	~	~	~
10x12	5,000	1.464	1,700	1250	5.0	2.0	0.1416	0.0566	15.0	2.1	1.2	1.0	~	~	~
12x12	6,000	1.757	2,000	1,500	6.0	2.4	0.1699	0.0680	15.0	2.1	1.2	1.0	~	~	~
12X24	12,000	3.514	4,000	3,000	12.0	4.8	0.3398	0.1359	30.0	4.2	2.4	2.1	~	1.5	0.9
12x36	18,000	5.272	6,000	4,500	18.0	7.2	0.5097	0.2039	~	5.0	2.9	2.5	1.6	1.3	1.0
12x48	24,000	7.029	8,000	6,000	24.0	9.6	0.6796	0.2718	30.0	6.7	3.9	3.3	2.1	1.7	1.3
12x60	30,000	8.786	10,000	7,500	30.0	12.0	0.8495	0.3398	45.0	10.4	6.0	5.2	3.3	2.6	2.1
12x72	36,000	10.543	12,000	9,000	36.0	14.4	1.0194	0.4078	~	12.1	7.0	6.0	3.8	3.0	2.4
18x24	18,000	5.272	6,000	4,500	18.0	7.2	0.5097	0.2039	30.0	4.2	2.4	2.1	~	1.5	~
18x30	22,500	6.590	7,500	5,625	22.5	9.0	0.6371	0.2549	~	~	~	~	~	1.5	~
18x36	27,000	7.908	9,000	6,750	27.0	10.8	0.7646	0.3058	~	10.0	5.8	5.0	3.2	2.5	2.0
18x48	36,000	10.543	12,000	9,000	36.0	14.4	1.0194	0.4078	~	13.3	7.7	6.7	4.2	3.3	2.7
18x60	45,000	13.179	15,000	11,250	45.0	18.0	1.2743	0.5097	~	20.8	12.0	10.4	6.6	5.2	4.2
18x72	54,000	15.815	18,000	13,500	54.0	21.6	1.5291	0.6116	~	24.2	14.0	12.1	7.6	6.0	4.8
24x24	24,000	7.029	8,000	6,000	24.0	9.6	0.6796	0.2718	30.0	4.2	2.4	2.1	~	1.5	~
24x30	30,000	8.786	10,000	7,500	30.0	12.0	0.8495	0.3398	30.0	4.2	2.4	2.1	~	1.5	~
24x30	30,000	8.786	10,000	7,500	30.0	12.0	0.8495	0.3398	45.0	6.7	~	~	~	~	~
24x30	30,000	8.786	10,000	7,500	30.0	12.0	0.8495	0.3398	~	8.3	~	~	~	~	~
24x36	36,000	10.543	12,000	9,000	36.0	14.4	1.0194	0.4078	~	10.0	5.8	5.0	3.2	2.5	2.0
24x48	48,000	14.058	16,000	12,000	48.0	19.2	1.3592	0.5437	~	13.3	7.7	6.7	4.2	3.3	2.7
24x60	60,000	17.572	20,000	15,000	60.0	24.0	1.6990	0.6796	~	20.8	12.0	10.4	6.6	5.2	4.2
24x72	72,000	21.087	24,000	18,000	72.0	28.8	2.0388	0.8155	~	24.2	14.0	12.1	7.6	6.0	4.8



Cata-Dyne™

Request for Quote Form

1. Client Information

Company Name: _____
 Address: _____
 City, State (Prov): _____
 Country, Zip (Postal Code): _____
 Contact Name: _____
 Phone / Fax: _____
 E-mail: _____

2. Services

Fuel Type and Pressure

Natural Gas 3.5" wc 4.5" wc 7.0" wc
Propane 11" wc

Voltage

12V 120V 208V 240V
 380V 480V 600V

Note: Refer to Tables 1-3 on pg 10 & 11 for available voltages.

3. Heater Selection

Please include quantity in space provided.

WX Series - Rear Mounted Controls (pg 6)

__6x6	__6x12	__6x24	__8x8
__10x12	__12x12	__12x24	__12x36
__12x48	__12x60	__12x72	__18x24
__18x36	__18x48	__18x60	__18x72
__24x24	__24x30	__24x36	__24x48
__24x60	__24x72		

3. Heater Selection (Continued)

Please include quantity in space provided.

MKII Series - Side Mounted Controls (pg 7)

__12x12 __12x24 __18x24 __24x24
 __24x48

Slim Line Series - Thinner Design (pg 8)

__6x6 __6x12 __6x24 __8x8
 __10x12 __12x12

G Series - Non-Hazardous Industrial (pg 9)

Contact the factory for a quote on G Series.

4. Accessories

Please include quantity in space provided.

Safety Controls

__H17CB-5 __H19 __Mertik (Includes Thermostat)

Scrubbers

__NGS 4 __NGS 12

Regulators

__Low Pressure 912 __High Pressure 130

12 V Start Up Leads

__25 ft. __30 ft. __40 ft.

Propane Hoses

__1.5 ft. __5 ft. __10 ft.

Other

__Battery Cable Cabinet	__Vent Hood
__Wall Mount Bracket	__45 Deg. Wall Mount Bracket
__Floor Stand	__Thermostat
__Protection Grill	__Manual Shut-off Ball Valve
__Gas Pressure Test Kit	__P.O.L. Adapter
__NGC Cartridge	

To receive your quote,
 fax this page to: (780) 468-5904
 Attn: Customer Service
 www.ccithermal.com



Cata-Dyne™ Enclosures

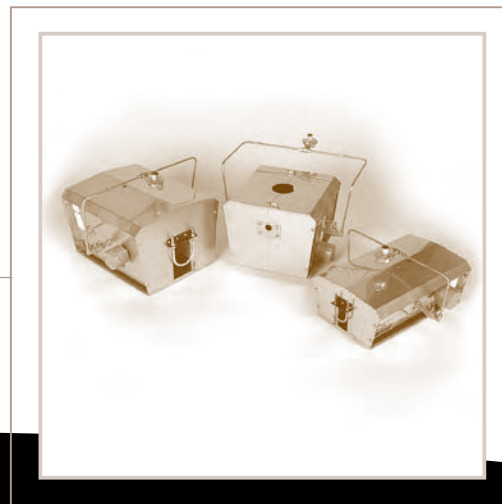
Applications

- Provides total freeze protection for a wide variety of regulators, valves, meters, orifice fittings, chokes and pipelines.
- Ideal heating solution for critical gas pressure reduction and/or restriction locations where electricity is usually not available. These locations are prone to freeze-offs due to the Joule-Thomson effect: 7°F/4°C temperature loss for every 100 psi (689.5 kPa) pressure reduction.
- Standard enclosures are available for a variety of applications including the 600 series regulators and the FCV Choke Valve.
- For custom designed enclosure packages please contact a CCI Thermal representative.

Features

- Built from highly durable stainless steel.
- Simple to install and access, the enclosure system allows for the adjustment of the enclosed regulator, valve, or choke.
- All units are sized specifically for each application to accurately focus the infrared energy.

The Cata-Dyne™ Enclosure is a heating system consisting of our Cata-Dyne™ explosion-proof heater mounted within a stainless steel enclosure providing freeze protection for measurement or regulation equipment. From valves to pipelines, Cata-Dyne™ Enclosures can be custom-designed and built to suit your needs.



Certifications

- CSA, FM and non-certified heaters can be used with the enclosure system.

Table 5 - Heater Enclosures

Heater Quantity & Size	Enclosed Component
1 - 6 x 6	Fisher 1301 Regulator
2 - 8 x 8	Fisher 357 Regulator
2 - 8 x 8	Fisher 627 & 630 Regulators
2 - 8 x 8	Fisher D-Body Control Valve
1 - 8 x 8	461-S Regulator
1 - 10 x 12	10x12 Heater Enclosure, 3 in. Pipe Opening
2 - 12 x 12	FCV-2T Flow Control Valve
2 - 6 x 24	2 in. Diameter Pipe Preheater
2 - 12 x 24	4 in. Diameter Pipe Preheater
1 - 6 x 6	Roots 1.5 Rotary Meter
1 - 6 x 6	RM 1000 Rotary Meter
1 - 6 x 6	Roots 3MLMMA Rotary Meter
1 - 6 x 6	Roots 3M Rotary Meter
1 - 6 x 6	Roots 1M600LMMA Rotary Meter
1 - 6 x 6	Roots 3.6M600LMMA Rotary Meter

Table 6 - Enclosure Gas Manifolds

Part #	Enclosure Manifold
AC-HE-1301-M	Gas Manifold for Fisher 1301 Regulator
AC-HE-357-M	Gas Manifold for Fisher 357 Regulator
AC-HE-600-M	Gas Manifold for Fisher 627 and 630 Regulators
AC-HE-DBODY-M	Gas Manifold for Fisher D-Body Control Valve
AC-HE-FCVCHOKE-M	Gas Manifold for FCV-2T
AC-HE-PP-2-M	Gas Manifold for 2 in. Diameter Pipe Preheater
AC-HE-PP-4-M	Gas Manifold for 4 in. Diameter Pipe Preheater

Table 7 - Enclosure Temperature Controller

Part #	Temperature Control
AC-TC-HT	High Temperature Thermostat

Table 8 - Enclosure Pressure Regulators

Part #	Regulator
AC-R-1301F	Fisher 1301, High Pressure
AC-R-912	Fisher 912, Low Pressure, 11 in. - 250 psi
AC-R-912-3.5	Fisher 912, Low Pressure, 3.5 in. - 250 psi
AC-R-912-4.5	Fisher 912, Low Pressure, 4.5 in. - 250 psi

Note: When ordering please specify the operating fuel, pressure, and start up voltage.

Gas Preheater

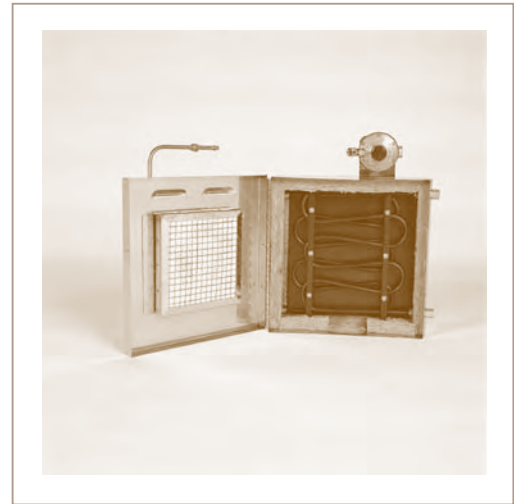
The Cata-Dyne™ Instrument Gas Preheater is the preferred solution for the oil & gas industry providing freeze protection for instrument supply gas, pilot actuated regulators and related applications. The heating unit comes pre-piped in a compact stainless steel casing with a Cata-Dyne™ explosion-proof heater, a stainless steel preheating tube and a regulator. After start-up, these dependable units will continue to supply preheated instrument gas practically maintenance free.

Applications

- Prevents freezing at compressor and metering sites where pressures have to be reduced.
- Often used for gas chromatographs, valves, pilots and other low flow instruments.

Features

- Cata-Dyne™ WX or Slim Line explosion-proof, flameless infrared catalytic gas heater.



- Stainless steel enclosure with both single and dual coil models.
- If standard unit is not available, CCI Thermal will design specialty units to meet any project need.
- Available in both natural gas and propane.
- Operates for extended periods of time without maintenance.
- The compact unit helps eliminate the need for a separate facility to keep gas temperatures optimal.

Certifications

- CSA, FM and non-certified heaters can be used with the gas preheater system.

Table 9

AC-HE-IGP-01	Single Pass	8 x 8
AC-HE-IGP-02	Double Pass	8 x 8
AC-HE-IGP-03	Double Pass	12 x 12
AC-HE-IGP-04	Single Pass	12 x 12



Super Conductor



This innovative heat transfer technology uses radiant heat from conducting rods to create a moisture free heat source. The Cata-Dyne™ Super Conductor comes equipped with a Cata-Dyne™ explosion-proof heater, copper rods, a standard or custom designed metal enclosure and fuel gas train accessories.

Applications

Provides dry penetrating heat for small enclosures that house batteries, radio controls and other moisture-sensitive equipment.

Features

- Keeps instrumentation at an operable temperature up to an outside ambient of - 40°C/-40°F.
- Uses natural gas or propane.
- Electrical power is not required to maintain operation after start-up.
- Compact design.
- Custom sizes and designs available.
- Operates for extended periods of time without maintenance.

Certifications (Heater only)

- CSA, FM and non-certified heaters can be used with the Super Conductors.

Table 10

Part #	Tube Quantity & Length	Heater Size
IN-TSC-8-4P-18	4 x 18"	8 x 8
IN-TSC-8-4P-24	4 x 24"	8 x 8
IN-TSC-12-4P-33	4 x 33"	12 x 12

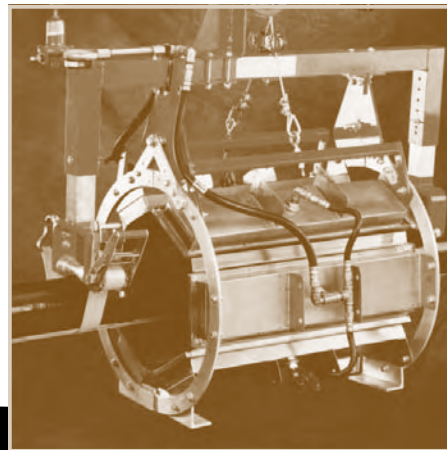


Sure Seal™ Pipeline Systems

Applications

- Large surface area of the Cata-Dyne™ heater allows for efficient transfer of infrared heat that can be utilized in a variety of pipeline applications.
- Suitable for preformed or wrap around sleeves.
- Ideal for both preheat and shrink sleeve processes.
- Can be used for baking to remove hydrogen induced cracking.
- Appropriate for a variety of manufacturers' sleeves.
- Can be used in windy or poor weather.

Sure Seal™ is a unique infrared heating system consisting of a number of Cata-Dyne™ heaters mounted in a clamshell frame configuration to provide a safe and fast method of applying heat to the construction and maintenance of various sizes of pipeline systems.

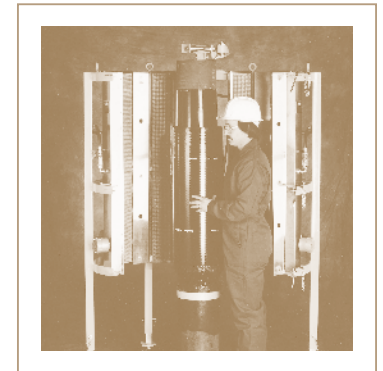
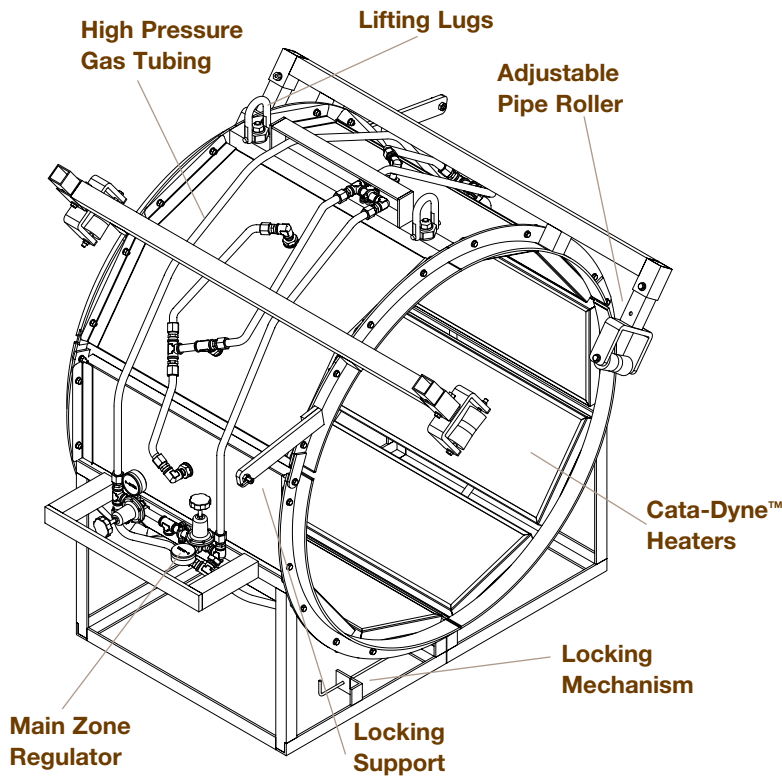
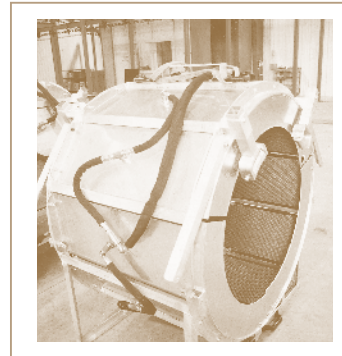


Features

- Utilizes the Cata-Dyne™ heater for high temperature applications.
- Models available for 2" diameter or greater pipelines.
- Requires no water, electricity or compressed air to operate.
- Faster than tiger torch methods and uses less propane.
- Portable and easily operated by one person, depending on pipeline sizes.
- Custom built equipment and other options are available upon special request.
- Utilizes the hottest catalytic gas heater on the market.

Table 11 - Product Dimensions & Data

Part #	Pipe Diameter (in.)	Dimensions			Weight (lbs)	Approx. Propane Consump. (lb/hr)
		L (in.)	H (in.)	W (in.)		
SS2-4/24	2 - 4	40	30	15	78	2.2
SS6-8/24	6 - 8	40	32	19	85	2.2
SS10-12/24	10 - 12	40	34	23	93	2.2
SS16-18/24	16 - 18	40	40	28	122	3.8
SS20-24/36	20 - 24	52	52	40	205	5.5

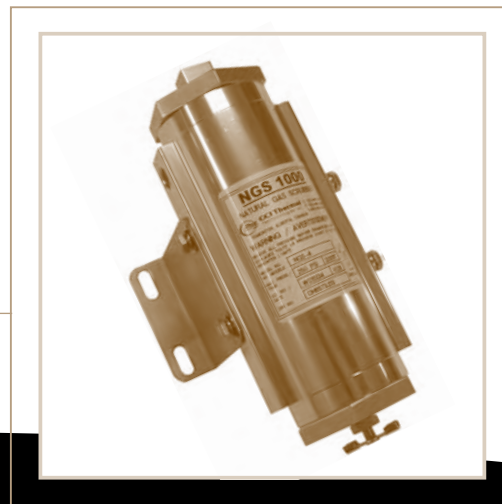


NGS1000 Natural Gas Scrubber

Applications

- Engineered specifically for industrial applications with gas supply lines to equipment such as:
 - Cata-Dyne™ WX, MKII and Slim Line heaters
 - Gas appliances
- Used to remove contaminants found in fuel gas from natural gas wells.
- Certification for pressure vessels CRN# OH65732.
- Interchangeable with existing applications.

Our new NGS1000 Natural Gas Scrubber features a new desiccant based scrubber cartridge designed for easier installation and maintenance.



NGS 1000 Natural Gas Scrubber

Features

- Housing and cover material - extruded, heat treated, machined and anodized 6000 Series aluminum.
- Maximum operating pressure is 250 psi.
- Maximum operating temperature is 200°F (93°C).
- Minimum operating temperature is -40°F (-40°C).
- Flow rate range from 600 SCFH to 1,500 SCFH.
- Inlet and outlet ports available in 1/4" NPT or 3/4" NPT.
- Drain cock.
- Standard stainless steel Universal Mounting Kit.
- Filtration media is available for moisture, sour gas, odor and oil contaminants.
- Cartridge filter change-out indicator plugs available.

Certifications

- Designed and built in accordance with ASME standards. Canadian Registration Number (CRN #0H6573.213) is standard for all units.

Table 12 - Scrubber Selection for Cata-Dyne™ Heaters

Gas Flow (Cu. Ft./hr)	Heater Size	Recommended NGS 1000 Scrubber
1.8	8 x 8	NGS-4
4.0	12 x 12	NGS-4
8.0	12 x 24	NGS-4
12.0	18 x 24	NGS-4
16.0	24 x 24	NGS-12
20.0	24 x 30	NGS-12
24.0	24 x 36	NGS-12

Note: When ordering please specify the operating fuel, pressure, and flow rate.

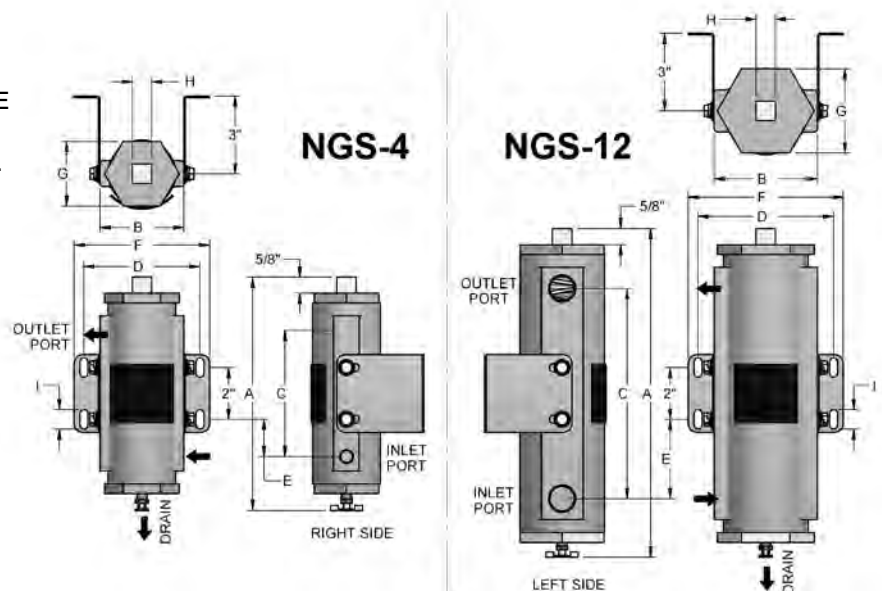


Table 13 - Dimensions and Information

Model #	A Overall Length (in.)	B Overall Width (in.)	C Port to Port (in.)	D (in.)	E (in.)	F (in.)	G (in.)	H (in.)	I (in.)	Pipe Size (NPT)	Replacement Cartridge	Bed Volume (cu. in.)
NGS-4	9	3-1/4	4-7/8	4-1/2	1-7/16	5-1/4	2-1/2	3/4	3/4 x 5/16	1/4	NGC-4	12.56
NGS-12	12-3/4	4	8-1/8	5-1/4	3-1/16	6	3-1/4	3/4	3/4 x 5/16	3/4	NGC-12	30.78

Note: For optimum performance, CCI Thermal will determine the appropriate scrubber for your application depending on your gas analysis.

Cata-Dyne™ Line Heaters

General Description

- The Cata-Dyne™ Line Heater consists of Cata-Dyne™ gas catalytic heaters mounted within a self-contained stainless steel structure. Heaters are strategically positioned to apply direct infrared heat at a pre-determined thermal density to an interior offset serpentine tube heat exchanger.
- The uniform diameter offset serpentine configuration is designed to promote high velocity turbulent flow resulting in maximum transfer of energy to the gas stream.

Features

- Cata-Dyne™ gas catalytic heaters provide infrared energy through a chemical reaction resulting in a quieter heating system.
- The heater does not require the use of glycol to transfer heat.
- The flanged and serpentine tube heat exchanger is designed for quick installation.
- All Cata-Dyne™ gas catalytic heaters and unit enclosures are made with stainless steel, limiting corrosion and maintenance.
- Automatic units feature control panels that are custom engineered with simple to state-of-the-art PLC controlled systems. Heat is applied only when required, and at the rate required, reducing operating costs.

The Cata-Dyne™ Line Heater is used to increase the temperature of gaseous fluids to avoid the formation of hydrates during pressure drop. The heater is designed for use in Class I, Division 1 or 2, Group D hazardous locations.



Table 10 - Cata-Dyne™ Line Heater Models

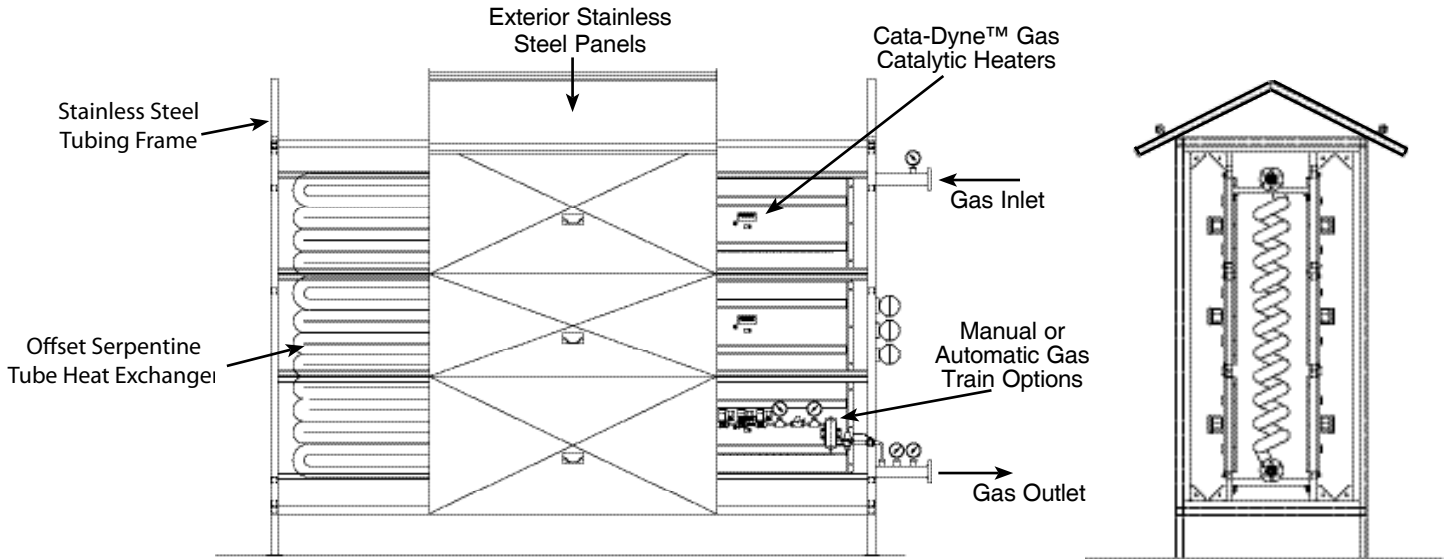
Model	Output(Btu/hr)			External Dimensions (ft.)		
	Minimum Manual	Automatic	Maximum	Length	Width	Height
S2-1	18,200	18,200	62,400	7.25	4.50	5.25
S4-2	36,400	18,200	124,800	7.25	4.50	7.50
S8-2	72,800	36,400	249,600	13.50	4.50	7.50
S12-3	109,200	36,400	374,400	13.50	4.50	9.75
S18-3	163,800	54,600	561,600	19.75	4.50	9.75
S32-4	145,600	72,800	998,400	26.00	5.50	12.00
S40-4	182,000	91,000	1,248,000	32.25	5.50	12.00
S48-4	218,400	109,200	1,497,600	38.50	5.50	12.00
S56-4	254,800	127,400	1,747,200	44.75	5.50	12.00

Applications

Cata-Dyne™ Line Heaters are used for a variety of applications in the Oil & Gas and Power Generation industries.

Common applications include heating:

- High pressure natural gas prior to pressure reduction to prevent the formation of hydrates.
- Fuel gas for natural gas fired turbines.
- Thick oils to improve ease of distribution.

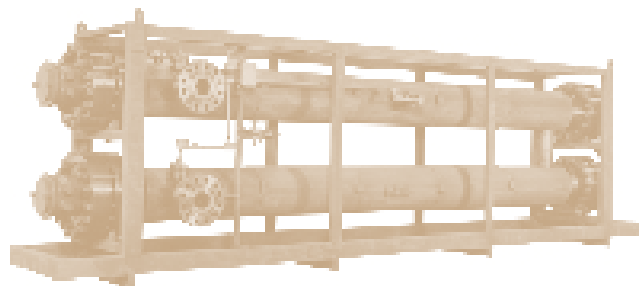


Other Line Heating Technologies from CCI Thermal

CCI Thermal manufactures electric heating equipment and has a team of experienced engineers ready to custom design a system for your application.



Caloritech™ Clamp-On Heater System
 • 58 kW, 250°F / 3500 psig, 15 W/in²



Caloritech™ Circulation Heater System
 • 800 kW, 200°F / 3000 psig, 25 W/in²

Visit us at www.ccithermal.com for more information.

Line Heater Request for Quote Form

Client Information:

Company Name: _____

Address: _____

City, State (Prov): _____

Country, Zip (Postal Code): _____

Contact Name: _____

Phone/Fax: _____

E-mail: _____

Proposal Type Required:

Budgetary or Formal Quote? _____

Other: _____

Required Date for Proposal: _____

Anticipated Shipping Date for Project: _____

Project Name: _____

Application Summary: _____

**To receive your Line Heater quote,
fax this page to: (780) 468-5904
Attention: Projects**

Piping:

Diameter: _____ inches

Flange Rating ANSI/ASME: _____ LB.

Design Temperature: _____ °F

Design Pressure: _____ psig

Temperature:

Heater Inlet: _____ °F

Regulator Temperature Limit (if known): _____ °F

Temperature After Regulation (if known): _____ °F

Pressure:

Arrival Pressure: _____ psig

Pressure Reduction Stage One: _____ psi

Pressure Reduction Stage Two: _____ psi

Pressure Reduction Stage Three: _____ psi

Gas Flow:

Maximum: _____ scfm

Minimum: _____ scfm

Electrical/Controls:

Supply Power: _____ volt/phase

Automated or Manual System? _____

Area Classifications:

Non-Hazardous

or

Hazardous: Class: _____ Div: _____, Group _____, "T" Code: _____

Physical/ Dimensional:

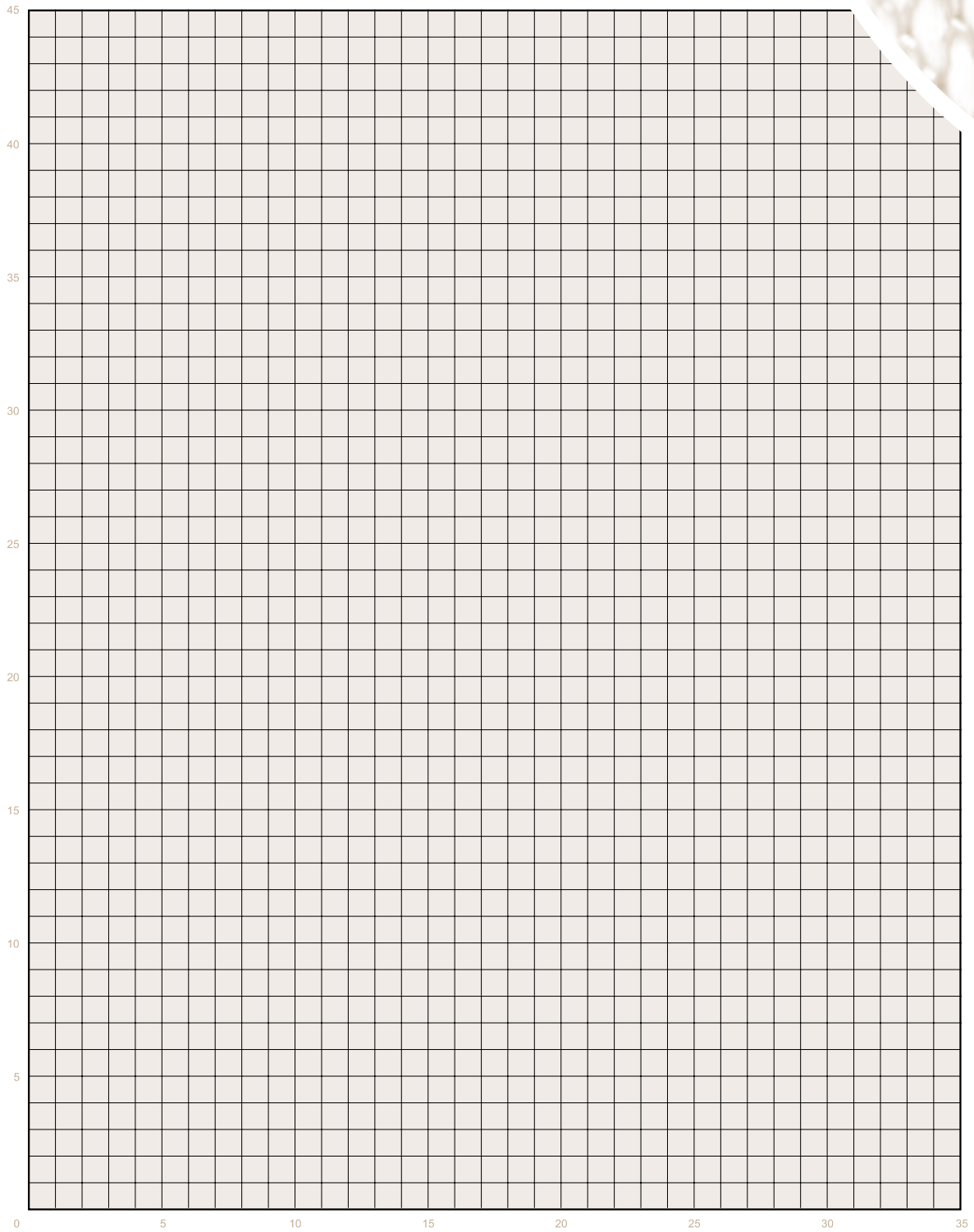
Skid Mounted or Leg Mounted? _____

Width/Height/Length Restrictions: _____

Indoor or Outdoor? _____



Notes:



Notes



Accessories

In many typical oil & gas applications that are classified as Class I hazardous locations, the Cata-Dyne™ heater must be installed in accordance with CSA, FM and ATEX codes and regulations. As a result, the Cata-Dyne™ product line is supported with essential accessories required to ensure the safe and efficient operation of the units.



Safety Shut-off Valves

- The safety shut-off valve works in conjunction with the thermocouple to monitor the catalytic reaction to ensure that it is well established before the fuel supply remains on unattended.
- It is also designed to automatically shut off the gas supply to the heater if the thermocouple senses that the catalyst pad has dropped below the activation temperature.
- Three styles are available to suit your heating application needs:

ASV375 – Safety Shut-off Valve

- 3/8" NPT connections and a maximum inlet pressure of 1/2 psi.
- Designed with a pilot test port located at the base of the valve that can be used to measure operating pressure.

TABLE 14 ASV375

Part #	Description
Valve - ASV375	Safety Shut-off Valve and Thermostat

ASV375NT – Safety Shut-off Valve

- The ASV375NT valve includes an additional tamper-resistant design that discourages mechanical attempts to fix the valve open and override the valve's safety feature.
- 3/8" NPT connections and a maximum inlet pressure of 1/2 psi

TABLE 15 ASV375NT

Part #	Description
Valve - ASV375NT	Tamper-Proof Safety Shut-Off Valve

Mertik Combination Gas Control/Valve

- Designed as a non-electric combination of the safety shut-off valve and a thermostat control.
- Includes a tamper-resistant thermocouple connection that cannot be mechanically fixed open.

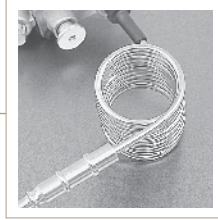
TABLE 16 Mertik

Part #	Description
AC-GV33	Combination Gas Control/Valve

Certifications

- Mertik - CSA and CE
- ASV375 and ASV375NT - CSA





Thermocouple

- The type K thermocouple is a probe made from two dissimilar metals that monitors the temperature of both the electrical start up element and the underside of the catalyst pad inside the Cata-Dyne™ heater.

Certifications

- CSA approved



Gas Pressure Regulators

- All regulators are designed to ensure there is a precise control of gas or propane flow.
- The regulators are part of the piping system connecting to the Cata-Dyne™ units, see installation and operating instructions for precise configuration.
- The following three types of regulators are available:

Appliance Regulator

- The appliance regulator is used for controlling the manifold pressure on all natural gas Cata-Dyne™ heaters and is supplied with all CSA certified models.
- It is a spring type, nonadjustable appliance regulator with a maximum inlet pressure 1/2 psi.
- The available pressure outlet settings are: 3.5", 4.5" and 7.0" w.c.
- Maximum flow capacity: 65,000 Btu/hr.

Service or Low Pressure Regulator

- Used as an appliance regulator for all model sizes of Cata-Dyne™ heaters operating on LPG, and serves as a natural

gas low pressure line regulator when used in conjunction with the ES-404 gas appliance regulator.

- Self operated, spring loaded device that is field adjustable.
- It has a maximum inlet pressure of 250 psi (1.7 MPa) and is factory set at 11 in. w.c. (2.7 kPa) outlet pressure, with a connection size of 1/4 in. NPT inlet by 3/8 in. NPT outlet.
- Maximum rating for propane: 140,000 Btu/hr (41 kW).
- Ambient temperature range: -20°F to 160°F (-29°C to 70°C).
- Maximum rating for natural gas: 70,000 Btu/hr (20.5 kW).
- A 1/8" NPT screwed vent connection is provided.

High Pressure Regulator

- Maximum pressure of 6,000 psi (41 MPa) inlet pressure and is factory set at 50 psi (345 kPa) outlet pressure.
- Connection size is 1/4 in. NPT (one inlet and two outlets).

Certifications

- Appliance Regulator - CSA
- Low Pressure Regulator - UL listed

TABLE 17 Pressure Regulators

Part #	Description
AC-R-ES404-7	Maxi Appliance Regulator 1/2 psi – 7 in. w.c. (1.7 kPa)
AC-R-912	Low Pressure 250 psi – 11 in. w.c. (2.7 kPa)
AC-R-1301F	High Pressure 6000 psi inlet 50 psi outlet





Battery Cables / Electric Start up Leads

- Are used for starting a 12 V Cata-Dyne™ heater from a battery or other power supply.
- Each set of cables comes with heavy duty spring loaded serrated jaw clamps at one end and closed loop terminal ends at the other.
- A strain relief connector is attached at the terminal end to enable the user to seal the connection between the cable and the junction box.
- Lengths are available in 25 ft. (7.6 m), 30 ft. (9.14 m), and 40 ft. (12.19 m).

TABLE 18 Start Up Leads – 12 V

Part #	Description
AC-LEAD-25	25 ft. Lead
AC-LEAD-30	30 ft. Lead
AC-LEAD-40	40 ft. Lead



Battery Cable Cabinet

- This mountable storage cabinet is a convenient solution for storing battery start-up leads, offering protection from adverse weather conditions.

- Each cabinet is manufactured from heavy duty 20 gauge stainless steel, and can be used with all lengths of battery cables from 25 ft.-40 ft. (7.6-12.2 m).
- The units are lockable and easy to install.

TABLE 19 Battery Cable Cabinet

Part #	Description
IN-BATBOX	Battery Cable Cabinet



Fuel Gas Hose

- Versatile braided rubber fuel hose.
- These hoses have a 350 psi maximum working pressure, and are available in lengths of 5, 10, 15, 20 ft. (7.6 -12.2 m). Other custom sizes are available.
- The connection size at each end is 3/8 in. NPT male.

Certifications

- CSA approved Type 1 natural and propane gas hose

TABLE 20 Propane Hoses

Part #	Description
IN-P-H-3/8 x 18 in.	18 in. Hose
IN-P-H-3/8 x 5 ft.	5 ft. Hose
IN-P-H-3/8 x 10 ft.	10 ft. Hose
IN-P-H-3/8 x 15 ft.	15 ft. Hose
IN-P-H-3/8 x 20 ft.	20 ft. Hose
IN-P-H-3/8 x 25 ft.	25 ft. Hose
IN-P-H-3/8 x 30 ft.	30 ft. Hose





Vent Hood Assembly

- A light weight galvanized steel construction venting system for use with the Cata-Dyne™ heater to vent the by-products of reaction (carbon dioxide and water vapour) outside the building.
- Each assembly consists of 1 exhaust hood, 1 length of vent pipe (30 in.), 1 elbow, 1 flashing, and 1 snowcap.
- These assemblies are available for both standard Cata-Dyne™ heaters (6, 8, 12, 24, 36 in.) and MKII models (12, 24 in.).
- The above parts can be ordered individually.

TABLE 21 Vent Hood Assemblies

Part #	Width
AC-VHASSY-6	6 in.
AC-VHASSY-8	8 in.
AC-VHASSY-12	12 in.
AC-VHASSY-24	24 in.
AC-VHASSY-36	36 in.
AC-VHASSY-48	48 in.
AC-MKIIHASSY-12	MKII 12 in.
AC-MKIIHASSY-24	MKII 24 in.



Wall Mounting Brackets

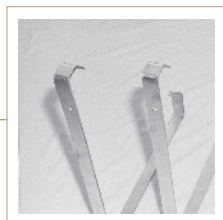
- Stainless steel or mild steel constructed mounting brackets and hardware.

- Standard wall brackets can mount Cata-Dyne™ heaters 7.5 in. (190 mm) away from the wall to allow access to the back of the heater.
- MKII model bracket sizes are half the length of our standard wall mounting brackets allowing the heater to be installed closer to the wall.
- Brackets for large units over 8,000 BTU/hr (2.3kW) are manufactured from heavy gauge mild steel flat bar.

TABLE 22 Wall Mount Brackets

Part #	Heater Size
AC-WBRK-0808	8 x 8
AC-WBRK-0624	6 x 24
AC-WBRK-1212	12 x 12
AC-WBRK-1224	12 x 24
AC-WBRK-1236	12 x 36
AC-WBRK-1248	12 x 48
AC-WBRK-1260	12 x 60
AC-WBRK-1272	12 x 72
AC-WBRK-1824	18 x 24
AC-WBRK-1836	18 x 36
AC-WBRK-1848	18 x 48
AC-WBRK-1860	18 x 60
AC-WBRK-1872	18 x 72
AC-WBRK-2424	24 x 24
AC-WBRK-2430	24 x 30
AC-WBRK-2436	24 x 36
AC-WBRK-2448	24 x 48
AC-WBRK-2460	24 x 60
AC-WBRK-2472	24 x 72
AC-WBRK-MK12	12 x 12 and 12 x 24





45° Wall Mount Brackets

- Specialized mounting angle brackets used to simplify the installation of all 18 in. and 24 in. Cata-Dyne™ heaters.
- Brackets are manufactured from mild rolled steel with a zinc plated finish.

TABLE 23 45° Wall Mount Brackets

Part #	Description
AC-WBRIC-1824-45	Mounting Angle Bracket, 18 x 24, Short Side
AC-WBRIC-1836-45	Mounting Angle Bracket, 18 x 36, Long Side
AC-WBRIC-1848-45	Mounting Angle Bracket, 18 x 48, Long Side
AC-WBRIC-1860-45	Mounting Angle Bracket, 18 x 60, Long Side
AC-WBRIC-872-45	Mounting Angle Bracket, 18 x 72, Long Side
AC-WBRIC-2424-45	Mounting Angle Bracket, 24 x 24, Long Side
AC-WBRIC-2436-45	Mounting Angle Bracket, 24 x 36, Long Side
AC-WBRIC-2448-45	Mounting Angle Bracket, 24 x 48, Long Side
AC-WBRIC-2460-45	Mounting Angle Bracket, 24 x 60, Long Side
AC-WBRIC-2472-45	Mounting Angle Bracket, 24 x 72, Long Side



Floor Stands

- 12 gauge galvanized steel constructed floor stand and hardware.
- Allows the heater to be placed closer to the object being heated than the wall mounting system.
- Floor stands are adjustable, allowing the unit to be moved to the optimum height for the required heating application.

TABLE 24 Floor Mount Brackets

Part #	Heater Size
AC-FSS-8	8 x 8
AC-FSS-24	6 x 24
AC-FSS-12	12 x 12
AC-FSS-24	12 x 24
AC-FSL	12 x 36
AC-FSL	12 x 48
AC-FSL	12 x 60
AC-FSL	12 x 72
AC-FSL	18 x 24
AC-FSL	18 x 36
AC-FSL	18 x 48
AC-FSL	18 x 60
AC-FSL	18 x 72
AC-FSL	24 x 24
AC-FSL	24 x 30
AC-FSL	24 x 36
AC-FSL	24 x 48
AC-FSL	24 x 60
AC-FSL	24 x 72





Thermostatic Temperature Control Valve

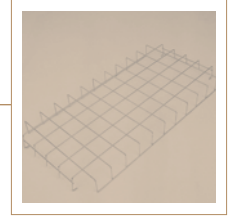
- Designed with a bulb and capillary assembly that automatically regulates the fuel flow to the Cata-Dyne™ heater from 100% when heat is required to approximately 30% when the thermostat is satisfied.
- This unit is used to control building temperature for spot and space heating applications.
- The sensing bulb is filled with a temperature sensitive liquid. Changes in the temperature at the bulb expand and contract the liquid on temperature rise and fall causing the internal mechanism to modulate the flow of fuel.
- Temperature control range of 32°F (0°C) to 110°F (44°C).
- Maximum inlet pressure of 1/2 psi.
- Each unit has a connection size of 3/8" NPT female and a capillary length of 5 ft. (1.5m).
- No electrical power is required to operate this unit.
- The controls are factory set to specific BTU and fuel ratings.

Certifications:

- CSA

TABLE 25 Temperature Control Valve

Part #	Description
AC-TC	0°C - 44°C (32°F - 110°F)



Protection Grills

- Two types of protection grills are available to protect personnel and objects from coming into direct contact with the face of the Cata-Dyne™ heater.

Strap-On Grills

- Comes with four straps on all corners so the grill can be bolted to the heater box.
- Can be bolted to a variety of standard Cata-Dyne™ heaters.
- The bolting hardware is included in the purchase.

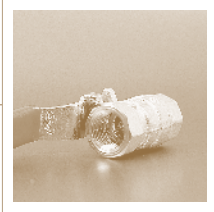
Note: Cannot be used with MKII units

Snap-On Grills

- These grills snap on to the bezel of the Cata-Dyne™ heater.
- Available in a variety of sizes.
- They do not require any additional hardware or tools to install.
- MKII units accept this style only.

Note: Can only be used with units manufactured after Sept 1, 2002.





Manual Shutoff Ball Valve

- The ball valve is installed upstream of all auxiliary heater controls to manually shut-off the fuel supply to the Cata-Dyne™ heater, see installation instructions for correct configuration for each fuel type.
- A 3/8" NPT shut-off ball valve, with female NPT inlet and outlets in forged brass which increases the strength of the body.
- Supplied with all manually controlled Cata-Dyne™ heaters.
- The hard chrome-plated ball has Teflon seats and an anti-corrosion Dacromet treated handle.

Certification:

- CSA approved and UL listed.



Gas Pressure Test Kit

- Pressure gauge and PVC tube used to accurately test and measure the gas pressure going into a Cata-Dyne™ heater by connecting the tube end to the gas test port of the Safety Shut-off Valve.
- Portable kit, ideal for all heater sizes.

- Eliminates the need to fit test ports on pipelines used for heater operation.
- Includes a 15" w.c. (3.7 kPa) pressure gauge, a 6 ft. (1.8 m) PVC tube and the connection to the SSOV.
- It is compatible with both natural gas and propane heaters.



P.O.L. Adapters

Product description:

- Propane fitting adapter used as a straight adapter that reduces a propane cylinder adapter to 1/4" NPT.
- Full flow brass fitting with a 7/8" hex nut.



Conversion Data

1000 BTU/hr = 0.2929 kW or 292.9 W
1000 BTU = 1.054 MJ
3,412 BTU/hr = 1.0 kW

1 psi = 27.91 inches w.c.
1 psi = 6.895 kPa
1 inch w.c. = 0.247 kPa

1 standard cubic foot NAT Gas = 1000 BTU
1 standard cubic foot LPG = 2,500 BTU

1 standard cubic meter NAT Gas = 37 MJ
1 standard cubic meter LPG = 88 MJ

1 pound LPG = 21,560 BTU
1 kilogram LPG = 50.1 MJ

3.5 inches w.c. = 8.7 mbar = 0.87 kPa = 0.126 psi
4 inches w.c. = 9.9 mbar = 0.99 kPa = 0.144 psi
7 inches w.c. = 17.3 mbar = 1.73 kPa = 0.251 psi
11 inches w.c. = 27.2 mbar = 2.72 kPa = 0.394 psi

$^{\circ}\text{C} = (^{\circ}\text{F} - 32) \times (5/9)$
 $^{\circ}\text{F} = (9/5 \times ^{\circ}\text{C}) + 32$

1 ft = 0.3048 m
1 ft² = 0.09290304 m²
1 ft³ = 0.02831685 m³
1 in = 2.54 cm
1 in² = 6.4516 cm²
1 in³ = 16.38706 cm³

1 psi = 27.91 in. w.c.
1 in. w.c. = 0.247 kPa

1 cfm = 0.028312 m³/hr

Inverse Square Law

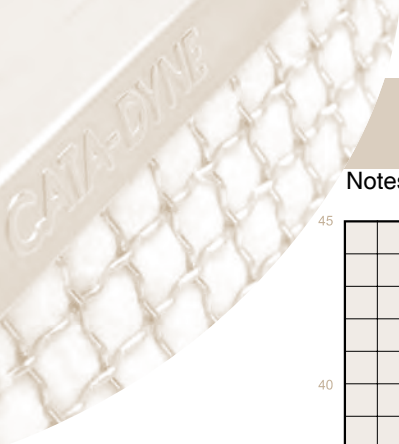
Intensity of infrared energy is inversely proportional to the square of the distance from the source of energy.

For infrared energy, this translates to: $I = P/4\pi r^2$

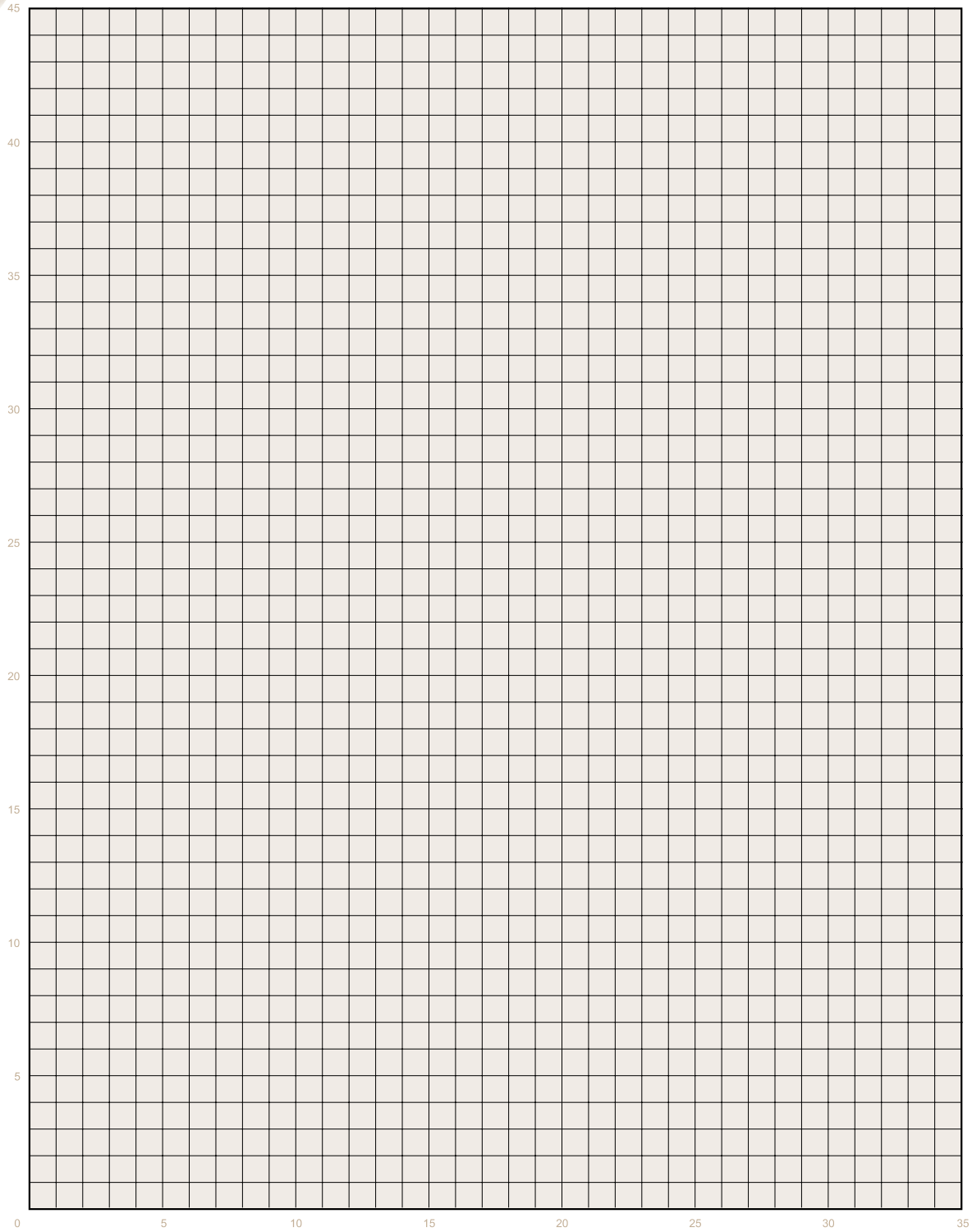
Where: I = intensity of infrared at the heated object

P = total power emitted from IR source

r = the distance from the source to the heated object



Notes:



Notes



CCI Thermal Technologies INC.

A Leader in Advanced Heating Solutions

MISSION STATEMENT

To be recognized as a world-wide industry leader in our core competencies;

To build and maintain a loyal customer base through dedicated customer service;

To provide our customers with broad based industry knowledge, expertise and products;

To promote continuous improvement in all existing product lines and develop and market a wide range of quality products through a commitment to research and development;

To maintain strict quality control standards in all manufactured products;

To support a human resource program that provides ongoing training and development of all employees;

To create an internal work environment that supports teamwork, safety and quality control.



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