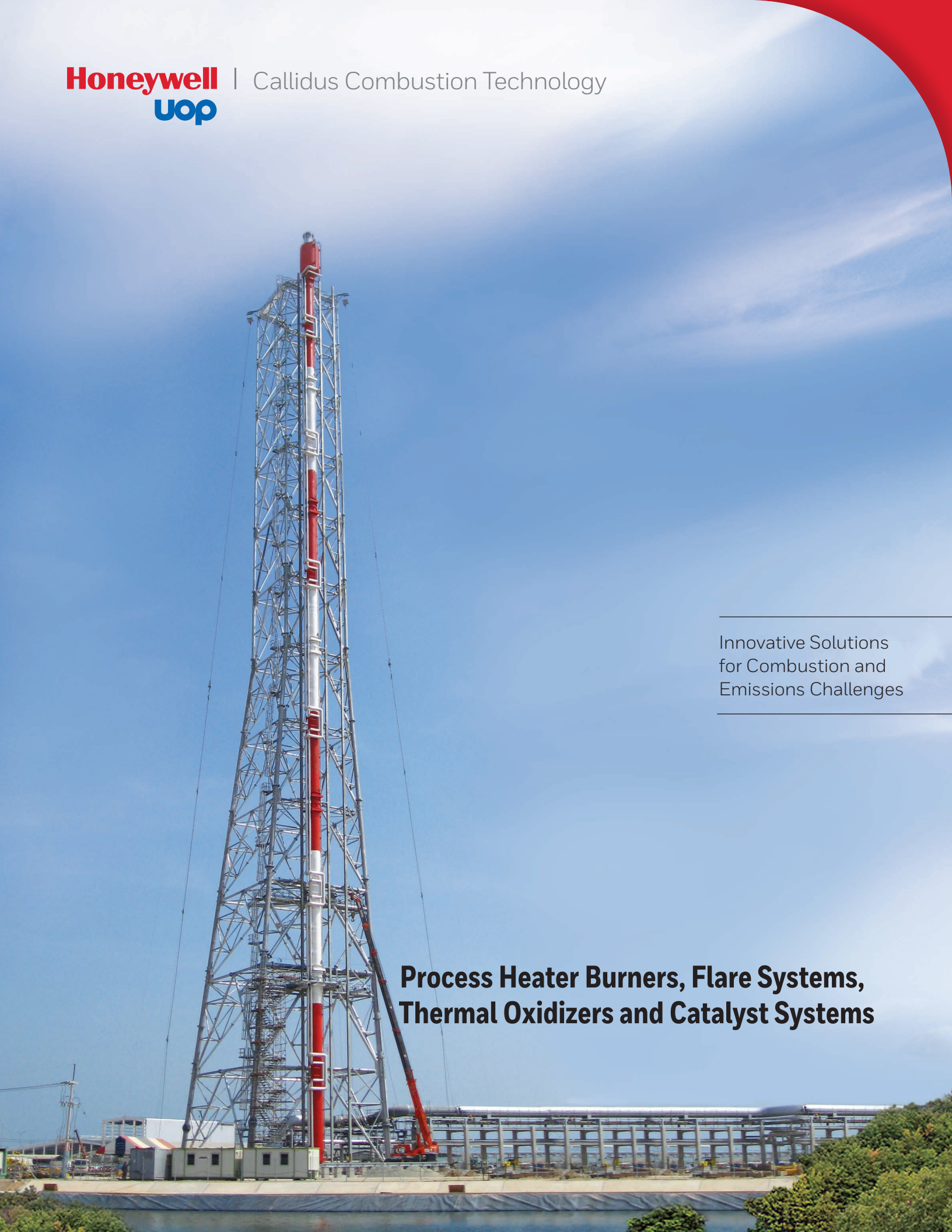
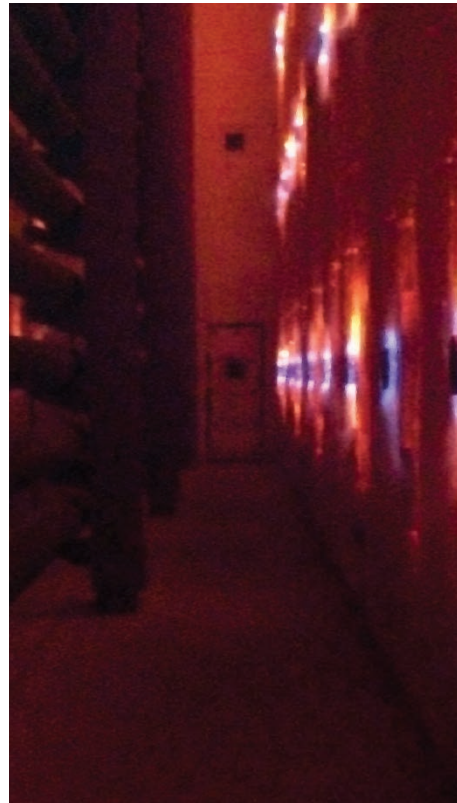

Innovative Solutions
for Combustion and
Emissions Challenges

**Process Heater Burners, Flare Systems,
Thermal Oxidizers and Catalyst Systems**





Radiant Wall Burner



Ultra Low NOx - CUBL Burners



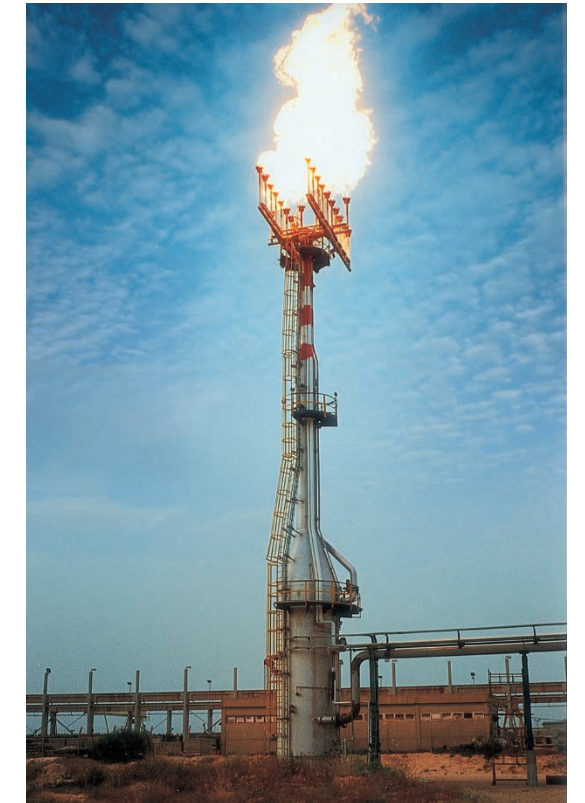
Flat Flame Low NOx Burners

Innovative Flare Design

Honeywell UOP Callidus develops flares and vapor control systems that are designed to match your specifications, process criteria and performance requirements. Our flare equipment functions at optimum levels, meeting EPA and international standards, while safeguarding plant and terminal operations. With thousands of flare system start-ups worldwide, you will find our flares and flare systems operating in hydrocarbon processing, oil and gas production, petrochemical processing and the steel and carbon black industries. Call our flare experts to assist you with your technical needs.



Flare Gas Recovery



Multipoint Steam Flare

Experience, Integrity, Professionalism and Technology

With more than two decades of overcoming combustion and emissions challenges, Honeywell UOP Callidus consistently leads the industry by setting the standards for maximum performance and minimum emissions.

Burners that Set the Standards

Innovation and technology are the keys to our burners. For more than two decades, our team has been on the leading edge in designing burner equipment. The burner design group has worked in cooperation with our customers to develop the technology and solutions to some of the greatest challenges in the reduction of NO_x. Honeywell UOP Callidus set the standard with the patented low emission (LE) burner achieving NO_x levels of 20 ppm. More recently, we demonstrated our technical expertise and leadership with the introduction of the next generation Ultra Low NO_x CUBL burner.

The CUBL has demonstrated exceptional stability, reliability and performance under the most stringent emissions regulations, regularly operating between 10-15 ppm in the field.

Honeywell UOP Callidus burners can be found in fired heaters and burner related services for the refining and petrochemical industries across the globe, and they consistently demonstrate the lowest NO_x rating and highest quality on the market today.

Applications

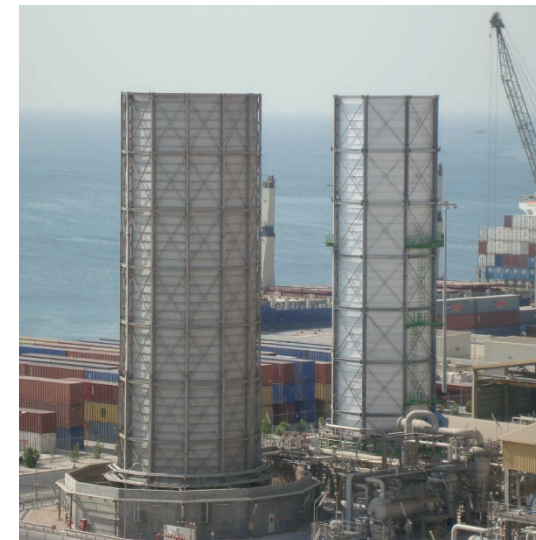
- Refinery process heaters
- Reforming furnaces
- Cracking furnaces
- Coking furnaces

Burners

- Forced and natural draft
- Conventional and low NO_x
- Gas, liquid or combination
- Ambient or preheated forced draft
- Radiant wall
- Pre-mix applications

Specialty Burners

- Ultra low NO_x
- Low Btu gas burners
- Vertical up or down and horizontal fired



Totally Enclosed Ground Flare (TEGF)



Multipoint Smokeless Flare

Applications:

- Hydrocarbon processing
- Oil & gas production
- Steel industries
- Carbon black industries
- Petrochemical industries
- Offshore/onshore production
- Terminals

Flares and Flare Systems:

- Pipe flare
- Multipoint smokeless flare
- Steam smokeless flare
- Ultra low-noise steam flares
- Totally enclosed ground flare
- HP gas assisted flare
- Air assisted flare
- Low Btu flare
- Pit burners
- Portable flare
- Offshore flare
- Production flare

Flare Gas Recovery Systems:

- Refinery, petrochemical, and gas processing applications
- Multiple compressor technologies available

Associated Auxiliary Equipment:

- Knock-out vessels
- Liquid seal vessels
- Ignition systems
- Pilot monitors

Thermal Oxidizers to Meet your Requirements

Let Honeywell UOP Callidus' experienced thermal oxidizers engineering group focus on meeting your individual requirements. Our broad base of incinerator designs and wealth of experience allow us to evaluate your environmental problems and provide custom designed solutions for your specific situation. Our incineration systems are in service in a variety of gas and liquid waste applications including halogenated, chlorinated, fume, tail gas and nitrogen bearing wastes. Each system is designed and built to meet the highest quality standards and to meet or exceed the latest environmental regulations including NO_x standards.



Thermal Oxidizer System



SCR System

Applications:

- Fume and vent streams
- Sulfur plant tail gas streams
- Carbon black tail gas streams
- Wastes containing salts
- Halogenated organic wastes
- Nitrogen bearing wastes
- Acrylonitrile process wastes
- Spent solvents
- Pharmaceutical plant wastes
- Petrochemical plant wastes
- Hazardous waste streams

Thermal Oxidizer Systems:

- Fume incinerator
- Tail gas incinerator
- Halogenated waste incinerator
- Low NO_x (deNO_xidizer™) system
- Down-fired incinerator
- Catalytic oxidizers

Catalyst Systems

Honeywell UOP Callidus can help you reduce levels of NO_x, CO and hydrocarbon emissions for Simple Cycle Catalyst Systems and Selective Catalytic Reduction Systems (SCR). Serving the power and process industries, each catalytic system is custom designed to meet each clients individual operational and emissions specifications.

Power Installations:

- Flow distribution device
- Ammonia injection grid
- Catalyst and associated equipment
- Silencing equipment
- Ammonia vaporization/flow control
- Outlet stack with EPA test ports

Process Installations:

- Dilution air system
- Catalyst and associated equipment
- Ammonia vaporization
- Inlet/exhaust ducting
- Reheat burner (as required)

Field Service and Parts

We recognize that the value of our equipment is dependent on performance. Our experienced field service personnel are dedicated to ensuring that our equipment is installed properly and operated with maximum efficiency throughout its functional life. We also provide a range of rental flares for various applications. Contact one of our representatives for further information regarding rental equipment.

Honeywell UOP Callidus provides full-service spare parts and retrofitting capabilities for our own and other manufacturers' equipment. We can replace existing components with our own parts or upgrade equipment to enhance performance.

Our global commitment to total customer service ensures that Callidus products and systems meet your expectations.



Global Field Service

Our Services Include:

- Turnkey installation
- Operator training
- Tuning for optimum performance
- Rental flares
- Troubleshooting equipment performance
- Individual part replacement
- Retrofitting for enhanced performance

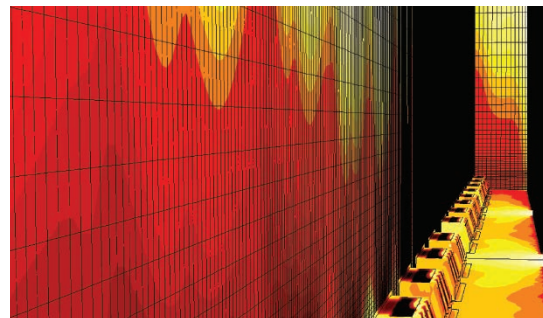
Research and Development

Honeywell UOP Callidus is committed to leading environmental and combustion technology discoveries, and we know that part of our success is directly related to our investment in research and development. Our industrial-scale R&D center, which tests burners, thermal oxidizers and flares, is the prime example of this investment. The center is fully instrumented with computerized data acquisition systems devoted to research and development of new products, product improvements, new combustion processes and problem solving applications.

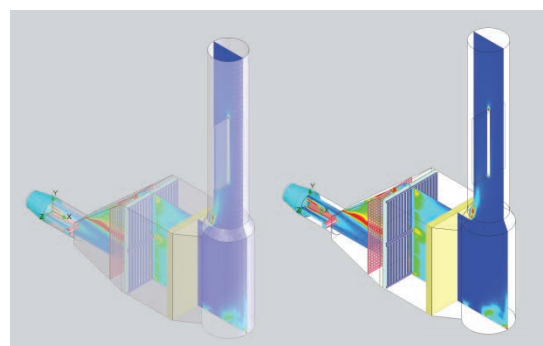
Because of our expertise, innovation, flexibility and emphasis on customer service, we have been selected on multiple occasions to work in cooperation with our clients to develop cutting-edge equipment and solutions to specific process challenges and needs.

Computational Fluid Dynamic Modeling

Our in-house Computational Fluid Dynamic Modeling (CFD) capabilities are used for engineering analysis of critical applications. CFD creates three-dimensional models of fired equipment in conjunction with Fluent® software to solve thermodynamic equations. When our models are combined with real world experience and years of proven R&D, we are able to predict field performance of entire systems and are able to avoid potential performance problems prior to fabrication.



Thermal modeling using computational fluid dynamics



Thermal and flow computer simulations are used in each system we design



Burner test facility houses seven test furnaces

Flare Test

Capabilities:

- Multipoint
- Enclosed ground
- Production flares
- Steam assist
- Air assist
- Offshore

Burner Test

Capabilities:

- Seven test furnaces
- Low NO_x
- Radiant wall
- Gas, liquid or combination
- Vertical and horizontal fired
- Ultra Low NO_x

Typical Applications:

- Rapid prototyping of custom-designed equipment
- Performance confirmation of upgrade and retrofit projects
- Resolution of issues with challenging in-field equipment
- Pre-purchase product assessment



Quality and Manufacturing

Our manufacturing facility demonstrates the highest quality standards in the industry. In some cases, many of our internal quality assurance programs require higher performance standards than some industry certifications. Callidus fabrication and manufacturing is certified ISO 9001:2000 in USA and China.

Callidus manufacturing and fabrication facilities are upgraded on a continual basis. Our current facilities in Oklahoma and China occupy more than 115,000 sq. ft. consisting of proven manufacturing techniques and equipment. As a global player in the combustion equipment market, some of our fabrication takes place around the world in strategic locations, while proprietary items are fabricated at our U.S. facility.

At Honeywell UOP Callidus, quality assurance is everyone's job. Every step of the project is consistently reviewed to ensure that we live up to your expectations.



Callidus China Fabrication Facility



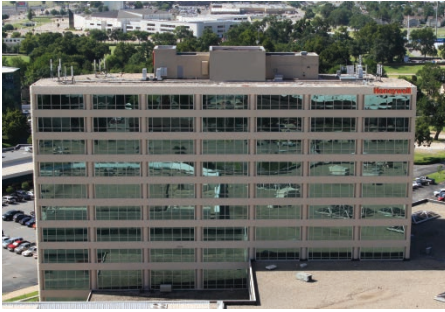
Callidus manufacturing emphasizes safety, quality and accuracy

Global Installation Teams

Our installation teams provide first-class service to our customers. Familiarity and hands-on experience with product lines enable us to provide enhanced product management and efficient, expedient turnarounds with a high level of quality control

Advantages:

- Product knowledge and experience
- Project management
- Cost controls
- Project reporting
- Modularization
- Quality control
- Identify, resolve unexpected surprises



Honeywell UOP Callidus headquarters - Tulsa, Oklahoma, USA



Honeywell UOP Callidus combustion test facility - China



Honeywell UOP Callidus 82,000 sq. ft. manufacturing and fabrication facility in USA

Global Coverage

Callidus reaches the global market through our headquarters located in Tulsa, Oklahoma, USA, with regional direct sales offices and independent sales representation around the world. Meeting our customers' expectations and setting the standards for the combustion industry have always been our goals. Each burner, flare, thermal oxidizer and catalyst system we design and manufacture is built with those goals in mind.

Test Facility

Honeywell UOP Callidus test facilities in the U.S. and China are used for combustion technology research and development, as well as for customer demonstrations. Our array of test systems allow us to closely match actual field operating conditions, providing results that will more accurately predict actual measured performance.

ISO 9001:2008 Certification



USA Certification



China Certification

High-Performance Combustion Solutions
Service – Parts – Installation

Contact us—we're here to help.

CallidusHelp@Honeywell.com

For more information

For more information, please visit www.callidus.com to find a local sales representative

Corporate Headquarters Callidus Technologies

7130 South Lewis Ave.
Suite 335
Tulsa, Oklahoma. 74136
Tel: +1-918-496-7599
www.callidus.com



UOP7326-3
March 2016
Printed in U.S.A.
© 2016 UOP LLC. All rights reserved.

