



The Global Absorption Market Leader  
Worthy of your consideration



## BROAD U.S.A.

*For Earth & Mankind's Tomorrow*

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## Broad Absorbers represent the best of Modern Design & Innovation

Generation XI, "the 11<sup>th</sup> design series" is the result of Broad's investment in research and development of Absorption Technology. It is also driven by the three primary demands of the marketplace:

- 1) Absorbers need to last at least 30 years (24/7/365)
- 2) Simple hands free operation (No operator required)
- 3) Low total cost of ownership. (Energy and Capital Cost)

Each increasing design series enables our customers to operate their chillers in a more energy efficient manner, with greater reliability while lowering the service and operational costs associated a chiller and boiler plant.



Below are some prime examples Broad's pioneering innovation:

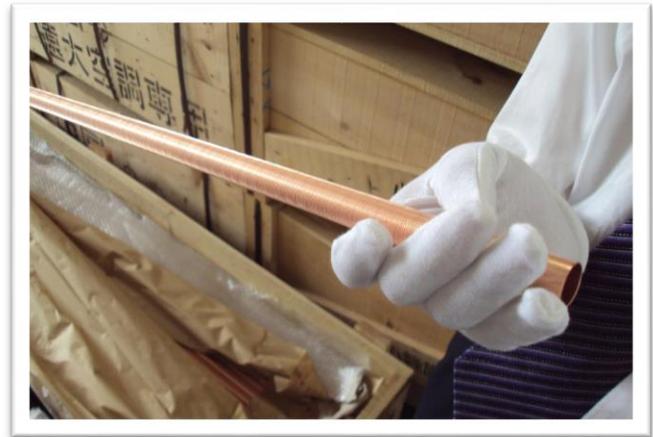
- Upward spray trees that do not clog - circa 1998
- Exhaust driven applications - circa 2000
- Plate type heat exchangers for higher COPs - circa 2000
- Multi energy up to 3 different heat inputs - circa 2003
- No Vacuum Pump for operation - circa 2007
- Stainless steel tubes in 70% of Unit and all heat exchangers.

## Broad Chillers set the bar high on vacuum and material standards

Broad Absorbers whether they are simple single stage or ultra high efficiency multi-energy two stage chillers all are designed to the same stringent Vacuum Standard. The passing test for the standard helium detection test is  $10^{-8}$  atmospheres of pressure per cubic centimeter of volume per second and industry best in class.



The material choice and their impact on longevity of the absorber couple with a great design and good vacuum is what a modern absorber is all about. Broad typically is providing higher quality materials such as oxygen free copper, stainless steel and thicker materials to insure the chiller meets it 30 year life cycle in an efficient and affordable manner without unplanned and costly re-tubing common in other older absorption designs.



Broad Chillers are solution to help our planet reduce climate change





## Lower your Carbon Footprint with Broad Absorption Chillers and eliminate chemical refrigerant in your building.

As the global market leader in energy efficiency Broad Absorbers will provide the lowest CO2 emission to your facility should you consider an absorber application. Absorbers whether directly or indirectly powered by natural gas – considered a 60% green energy will substantially reduce your carbon footprint as opposed to electric grid power HVAC systems.



Both the USEPA and ASHRAE Standard 189.1 have done an excellent job of assisting owners and designers in calculating CO2 emissions or CO2e (which literally means carbon dioxide equivalent).

<http://www.epa.gov/cleanenergy/energy-resources/calculator.html>



## Broad is committed to the Absorption Marketplace – It’s our primary business since we started in 1988

(USA) Carrier, McQuay, & Trane

(ASIA) “Ebarra/Carrier”, “Hitachi/York”, “Kawasaki/Trane” & “Sanyo/Thermax & McQuay”

All of the above USA based firms have been in and out of the absorption market - some multi times since Willis Carrier pioneered single stage commercial absorption in the late 1950s in New York. A few of the above Asian firms have licensed their technology for “others” to build or “name brand” in North American markets with less than the desired results. Broad is committed to always providing proper support to the customers we serve around the world. We are dedicated and focused on insuring owners can always find a proper training, service and after sale support with replacement parts and or units. We are committed to the inherit value and flexible solutions that thermally driven absorption plays in our modern world with limited energy resources.



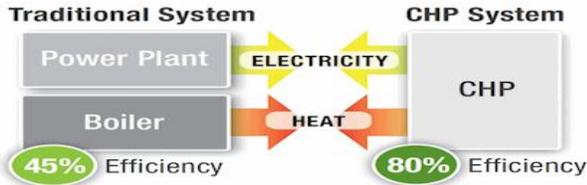
## Broad “Roles Its Own” Absorbers

### Absorption Design is our Core Competency and Primary Focus

Unlike many current players in the Absorption Market Broad designed and created its first absorber in 1988 with its own human capital, hard work, the desire to be the best. This home grown organic approach has allowed Broad to continue to innovate and lead as the worldwide customer base has grown to over 70 plus counties.



## Broad supports CCHP/Cogeneration



Broad has worked closely with the US Department of energy to assist in some early US based demonstration deployments of high efficiency solutions to cogeneration heat recovery. A prime example was of this cooperation was early demonstration site at Fort Bragg in North Carolina back in 2006



Broad USA is an active member of the USCHP and EPA CHP partnership. We doing our part to assist in the August 2012 executive order to deploy over 40GW of CHP by 2020,



## The Benefits of Factory Testing as Standard!

**Owner:** Insures the chiller will yield the operating performance characteristics as designed. It can also be a great opportunity for the operator to learn about the unit which will be cooling or heating the building and to become an expert in the operation of the absorber.

**Design Engineer:** The only way to really validate that the chiller supplied is meeting the design specification requirements. Field testing can be extremely challenging and expensive to replicate.

**Contractor:** Lowers risk of system issues and eliminates field verification of chiller performance which can be very time intensive and difficult to accomplish



## Whole Unit Testing Platform

Our manufacturing facility has over 40 test beds for comprehensive performance tests. It is the largest and most advanced whole unit testing platform in the world. This facility has been certified since 1997.

