



## *Pricelist December 2009*

### *Water Bath LPG Vaporizers*

08-Series



05-Series



- Capacities 168 gph to 10000 gph (322 kg/h to 20 metric tons per hour)
- For Propane, Butane, and other LPG
- Forced Draft Power Burners
- Low-Fire/High-Fire Modulation
- Small Footprint, High Efficiency
- Conforms to ASME, NFPA, PED/CE
- FM approved, CE Mark available
- Heavy-Gauge Steel Construction
- All-Welded Design
- Step-in Control Room for small models
- Walk-in Control Room for larger models
- PLC Controls with First-Out Monitor
- Color LCD Touch Screen
- Many Standard Options:
  - ⇒ Extended Control Room (Maintenance House)
  - ⇒ Remote Monitoring and Operation (Ethernet) via Web Browser
  - ⇒ Integration with LPG/Air Mixers for Standby Systems and PeakShaving Systems
  - ⇒ Siemens or Allen-Bradley PLC
  - ⇒ High-Pressure up to 400 psi
  - ⇒ Integration into Plant Monitoring
  - ⇒ Wireless Access
  - ⇒ Multi-Language Operator Interface
  - ⇒ Control Room with Heater and A/C

This price list supersedes the price list of July 2008 and all previous price lists. Prices shown in this list are believed to be accurate at the time of printing. They are given for standard equipment, standard options, and standard product configurations. All sales are subject to the terms and conditions as shown on page 16 of this price list. Please contact the factory or your nearest authorized AES distributor for a price quote and current delivery times. **Prices and product configurations are subject to change without notice.**

## Options and Accessories for Horizontal Water Bath Vaporizers

Listed below are the most common options and accessories for Horizontal Water Bath Vaporizers. Additional factory-installed options and accessories are available to meet almost any needs a customer may have. This includes non-standard control systems (higher-level Allen-Bradley PLCs such as CompactLogix, ControlLogix, and SLC; Siemens S7-300 PLCs); non-standard paint colors; Utility Packages with dual temperature controllers and high-capacity water circulation pumps; etc.

Please contact your area distributor or the factory to discuss your specific needs.

Standard Options Standard Accessories	WB - 168	WB - 208	WB - 258	WB - 308	WB - 358	WB - 408	WB - 458	WB - 508	WB - 455	WB - 555	WB - 655	WB - 755	WB - 855	WB - 1005	WB - 1205	WB - 1505	WB - 1805	WB - 2005	WB - 2205	WB - 2505	WB - 3005	WB - 3505	WB - 4505	WB - 5505	WB - 7005	WB - 10005	WB - 12005	WB - 15005
	ASME "U"-Stamp or PED for CE Mark	\$ 1,861.00			\$ 2,797.00				\$ 3,290.00				\$ 5,184.00				contact AES											
Extended Control Room	N/A				\$ 3,681.00				\$ 0.00 (Standard)																			
Enclosure Fan with Thermostat	\$ 621.00																											
UL508a Stamp or CE for Control Panel	\$ 1,600.00												\$ 2,600.00												contact AES			
<b>PLC Configurations</b>																												
S7-1200 / HMI5070	Siemens S7-1200 with Ethernet Interface and 7-inch high-resolution (800x480) Touch Screen \$ 0.00 (Standard Configuration)																											
ML-1100 / HMI504T	Allen-Bradley MicroLogix-1100 with Ethernet Interface and 4.3-inch high-resolution (480x272) Touch Screen \$ 0.00 (available at no additional charge)																											
S7-1200 / HMI277-6 Web	Siemens S7-1200 with 6-inch (320x240) Siemens Touch Panel with built-in Web Server for Remote Access and Control \$ 2,792.00																											
S7-1200 / HMI277-8 Web	Siemens S7-1200 with 8-inch (640x480) Siemens Touch Panel with built-in Web Server for Remote Access and Control \$ 3,634.00																											
S7-200 / HMI5070	Siemens S7-200 with Ethernet Interface or Profibus DP Interface and 7-inch high-resolution EOI (800x480) \$ 1,277.00																											
ML-1100 / HMI5070	Allen-Bradley MicroLogix-1100 with Ethernet Interface and 7-inch high-resolution (800x480) Touch Screen \$ 1,277.00																											
ML-1100 / PVP-6	Allen-Bradley MicroLogix-1100 with Ethernet Interface and 6-inch Allen-Bradley PanelView-Plus (320x240) \$ 3,085.00																											
ML-1100 / PVP-7	Allen-Bradley MicroLogix-1100 with Ethernet Interface and 7-inch Allen-Bradley PanelView-Plus (640x480) \$ 5,510.00																											
Allen-Bradley Factory Talk View ME ST	Software with single license for remote access to systems with Allen-Bradley PLC \$ 3,575.00																											
Other PLC/EOI Configurations	Other PLC/EOI Configurations, for example Siemens S7-300, Allen-Bradley CompactLogix, Bristol ControlWave Micro, GE 90-30, and others are available. Contact AES with your specific needs.																											
Other Vaporizer Options	Other vaporizer options, for example high-pressure, installation in ISO shipping containers, air conditioning for Control Room, wireless Ethernet bridge, Utility Package, etc., are available. Contact AES with your specific needs.																											

## JEFFCOOL®-P155 Heat Transfer Solution

Water Bath Vaporizers use - as the name implies - water as the heat transfer medium. However, since the heat exchanger components and the bath box of the WB series are manufactured from carbon steel, it is recommended that the heat transfer solution be a mixture of water and an industrial coolant/heat transfer fluid with inhibitors to provide rust/corrosion protection.

Under no circumstances should an automotive grade coolant be used as the heat transfer fluid. Using standard automotive coolant could cause premature deterioration of the heat exchangers.

It is also recommended that the water in the heat transfer solutions be de-ionized. While it is acceptable to use very small amounts of standard tapwater to replenish any water that might have evaporated, it is not recommended to use standard tap-water for the initial charge of the water bath. If at all possible, topping-off should be done with pre-diluted solutions at the required system concentration.

Alternate Energy Systems recommends a 50/50 Propylene-Glycol/DI-Water solution for all installations. This mixture will provide burst protection to -60°F (-50°C), and will provide freeze protection to -30°F (-34°C), while providing a maximum of corrosion protection.

Alternate Energy Systems has selected JEFFCOOL® P150 heat transfer fluid (manufactured by Huntsman Corporation, The Woodlands, TX) as our preferred heat transfer solution. We are stocking JEFFCOOL® P150 heat transfer fluid, pre-mixed 50/50 (= P155) with DI-Water, in 55-gallon drums and in 275-gallon totes, and can ship the quantities needed for the initial charge on the same truck as the vaporizer at no, or very minimal, additional shipping charges. If required, we can also provide a small utility pump, complete with suction hose and discharge hose, for the transfer of the JEFFCOOL® P150 heat transfer fluid from the drums or totes to the vaporizer.

AES Part #	Description	Price in US-\$
HTS0055	Jeffcool P155 transfer solution in 55-gallon non-returnable plastic drum (see Note 2)	\$ 738.00 / drum
HTS0275	Jeffcool P155 heat transfer solution in 275-gallon non-returnable plastic tote with steel-cage reinforcement (see Note 2)	\$ 3,690.00 / tote
HTS0004	Maintenance Sample Kit, including self-addressed shipping box, pre-labeled sample bottle, weather-proof self-adhesive product installation tag and detailed sampling procedures. Analytical results from the samples will be forwarded by the laboratory directly to our customer.	See Note 1
HTS0005	Utility Pump Kit for the transfer of Jeffcool P155 from the shipping containers to the vaporizer. Kit includes industrial-grade pump for AC110V 60Hz Single Phase (transfer rate approximately 365 gallons per hour): 10-ft. suction hose; 40-ft. discharge hose.	\$ 423.00

Note 1: Available at no charge to customers who have purchased their Heat Transfer Solution through AES. Contact AES for pricing if your Heat Transfer Solution is not JEFFCOOL®-P155, or if it was not purchased from AES.

Note 2: JEFFCOOL®-P155 is delivered in non-returnable containers. The cost of the containers is included in the price of the Heat Transfer Solution. AES accepts returned containers (freight pre-paid) for recycling and will credit the customer's account \$35.00 for each returned 55-gallon drum, and \$70.00 for each returned 275-gallon tote.

## Horizontal Water Bath Vaporizers

AES manufactures two lines of Water Bath Vaporizers, the 08-Series for capacities from 168 gph to 508 gph (322 kg/h to 975 kg/h), and the 05-Series for capacities from 455 gph to 10005 gph (873 kg/h to 20 metric tons per hour).

All AES water bath vaporizers are of "horizontal" design. Top, sides, and rear are insulated to hold the temperature of the water bath. The vaporizing tube bundle and all LPG piping conform to the standards of the ASME Boiler and Pressure Vessel Code and the latest edition of NFPA Pamphlet #58. The design is approved by Factory Mutual (FM) and Canadian Standards Association (CSA), and is accepted for Industrial Risk Insurers (IRI) installations. The vaporizers are also available with European CE Approval (third-party inspection by TÜV Rheinland).



A mixture of water and antifreeze is the heat transfer medium. A pump constantly circulates the solution to reduce heat stratification. The vaporizers are skid mounted, factory tested, primed, painted and ready for installation. They are ready for connection to properly sized electrical supply, liquid propane inlet and vapor outlet.

The vaporizers come with 2 sets of Operating Manuals and Test Reports, are designed for outdoor installation, and require only nominal preventive maintenance.

The model number (WB-xxxx) designates the vaporization capacity in gallons per hour Propane vaporization at 0°F (-18°C) inlet temperature.

All WB vaporizers are manufactured with a protective enclosure for the burner and the control components. Models WB-1805 and above are equipped with an extended control room (maintenance house), which is available as an option for the smaller models WB-455 to WB-1505.

Model numbers ending in "8" utilize a European-style compact power burner; model numbers ending in "5" utilize Maxon TOT burners (or similar types). Both series are equipped with Agency-approved Safety Relays and electronic flame safe guard. This combination elevates the safety of the vaporizers to "Performance Level 3" (formerly known as SIL 4).

Both series of vaporizers are equipped with "Smart" Liquid Carryover Protection function, using a Rosemount pressure transmitters and a Rosemount temperature transmitter in the vapor outlet.

Prices for all models include a control panel with Siemens S7-1200 or Allen-Bradley MicroLogix-1100 PLC and a high-resolution color LCD display with Touch Screen Operator Interface for system status display and first-outage indication. Ethernet Interface is standard on all PLCs. The Siemens PLCs are also available with Profibus DP interface; and with remote monitoring and control via a web browser, without the need for additional software.

Detailed equipment description can be found in AES brochure "Water Bath LPG Vaporizers".

Model Number	Nominal Capacity in gal per hour	Nominal Capacity in kg/h	Burner Input in MMBTU/h	Dimensions In inches			Water Tank Capacity In gallons	Shipping Weight in lbs.	Price in US-\$
				W	L	H			
WB-168	168	322	0.200	48	132	112	165	3500	\$24,000.00
WB-208	208	399	0.250	48	132	112	165	3500	\$26,000.00
WB-258	258	495	0.310	48	132	112	165	3500	\$30,000.00
WB-308	308	585	0.370	48	132	112	165	3500	\$33,000.00
WB-358	358	687	0.430	48	132	112	165	3500	\$35,000.00
WB-408	408	783	0.490	48	132	112	165	3500	\$36,500.00
WB-458	458	879	0.550	48	132	112	165	3500	\$38,000.00
WB-508	508	975	0.610	48	132	112	165	3500	\$41,000.00
WB-455	455	873	0.540	72	138	112	220	5400	\$44,430.00
WB-555	555	1065	0.660	72	138	112	220	5400	\$47,535.00
WB-655	655	1257	0.780	72	138	112	220	5400	\$51,324.00
WB-755	755	1449	0.900	72	142	112	385	6200	\$56,491.00
WB-855	855	1640	1.020	72	142	112	385	6200	\$59,585.00
WB-1005	1005	1928	1.200	78	164	112	495	8000	\$68,021.00
WB-1205	1205	2312	1.440	78	164	112	495	8000	\$73,642.00
WB-1505	1505	2888	1.800	78	164	112	495	8000	\$82,129.00
WB-1805	1805	3463	2.160	84	204	112	990	14000	\$93,005.00
WB-2005	2005	3847	2.400	84	204	112	990	14000	\$107,111.00
WB-2205	2205	4231	2.640	84	204	112	990	14000	\$110,687.00
WB-2505	2505	4807	3.000	84	204	112	990	14000	\$123,395.00
WB-3005	3005	5766	3.750	84	240	112	2035	16500	\$132,608.00
WB-3505	3505	6726	4.200	84	240	112	2035	16500	\$141,889.00
WB-4505	4505	8645	5.400	84	310	112	2420	20000	\$165,909.00
WB-5505	5505	10534	6.600	84	310	112	2420	20000	\$191,312.00
WB-7005	7005	13442	8.400	These Vaporizers are typically manufactured to meet customer-specific requirements. Please contact your area distributor or the factory to discuss your specific needs.					
WB-10005	10005	19199	12.000						

Weights and dimensions are approximate. Specifications are subject to change without notice. Call factory or distributor for price quotation and actual lead times.

## Terms and Conditions, Warranty Information

The following are the standard terms and conditions of Alternate Energy Systems, Inc. for **domestic** customers. Actual terms and conditions for a specific order may have adjusted language and may be attached to the acknowledgement of the purchase order. Contact Alternate Energy Systems, Inc. for terms and conditions for export orders.

### Acceptance:

Where these terms and conditions are incorporated in a proposal submitted by Alternate Energy Systems, Inc. ("Seller"), that proposal, together with these terms and conditions, expresses the Seller's entire undertaking and responsibility when the Purchaser's written order is transmitted to the Seller within thirty (30) days from the proposal date, and when the Purchaser's order is accepted by the Seller at its offices. Any previous quotations, agreements, conversations, or understandings, are superseded hereby.

For all other orders, these terms and conditions shall govern the contract between the Purchaser and the Seller. Any deviation from these terms and conditions must be agreed upon by the Seller, in writing. Specifically, the fact that Seller provides product in response to an order issued by the Purchaser, carrying deviating terms and conditions, does not automatically indicate that the Seller has accepted the Purchaser's terms and conditions.

### Limited Warranty:

Seller guarantees that all products of its manufacture, sold pursuant hereto, shall be free of defects in workmanship and material, normal wear and tear excepted, for the standard period of one year from date of shipment from Seller. Certain products may carry shorter or longer warranty periods, in effect for these particular products at the time of shipment from the Seller. Commercial items, and other components, such as controls, electric motors, drives, etc., utilized in these manufactured products, are not guaranteed by Seller. Instead, they are covered by, and are subject to, their respective manufacturers' guarantees only. Complete products represented by, distributed by, or purchased and resold in any other manner by, Seller, are not guaranteed by Seller, but will be subject to their respective manufacturer's guarantee.

In the event of defects developing within the Seller's applicable guarantee period under normal and proper use, the Seller will only be obligated to furnish, F. O. B. point of manufacture or the Seller's plant, at its option, without charge, parts required to replace materials found defective; or, at Seller's option, replacement of defective item. Seller or its suppliers shall not be held liable for any further costs or expense, or for indirect or consequential damages, including removal or reinstallation cost, and lost profits. Deterioration or wear caused by chemicals, abrasive action, or excessive heat shall not constitute defects under warranty, unless such conditions are expressly provided for by the Seller, in writing. Products or parts that have been subject to accidental damage, misuse, unauthorized disassembly or alterations, improper installation, lack of proper lubrication, or lack of other service requirements established by the manufacturer, will not be covered by warranty. THE WARRANTY STATED HEREIN IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS, STATUTORY, OR IMPLIED; INCLUDING, WITHOUT LIMITATION, THAT OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

### Taxes:

Unless otherwise specifically noted in a proposal, prices quoted by seller do not include any applicable city, county, state or federal taxes. Any of these taxes to which a transaction is subject, are to be borne by the Purchaser, even if collection is required by the Seller.

### Applicable Codes:

Seller or any manufacturer it represents, shall not be liable for any expense involved in meeting any federal, state or local codes. Federal codes, such as those represented in OSHA, refer to the employer (Purchaser) and not to the supplier (Seller). They cannot be delegated. However, the Seller will endeavor to help the Purchaser comply with these codes.

### Component Equipment:

Seller's sales proposals are based on supplying its chosen make of motors, controls, drives and miscellaneous incidental equipment of the type required. If the Purchaser specifies a particular brand of one of these devices, the Seller reserves the right to charge any additional price involved, and its estimated shipping date is subject to such delays as may be required to obtain any non-stock item.

### Shipping:

Seller will use all reasonable care in shipping the equipment and will endeavor to make shipment within the time estimated. However, it assumes no responsibility for loss of, or damage to, the equipment after shipment from its plant, or for unavoidable delays, such as those caused by fire, strikes, carriers, or other causes beyond the Seller's control. Unless instructed otherwise, all shipments will be insured at the buyer's expense and at the net invoice value of the goods.

### Erection and Installation:

Seller assumes no responsibility for improper operation of equipment due to faulty erection or installation, when the equipment is erected by the Purchaser or his designates.

### Cancellation:

All orders placed with, and accepted by, Seller are firm and not subject to cancellation, except by mutual consent. They are cancelable then only on terms that will indemnify the Seller against any losses incurred.

### Claims:

Claims for shortages or damage to merchandise should be made to the transportation company making delivery. Should any piece of equipment prove defective, it will be repaired or replaced under the applicable warranty provided herein. Under no circumstances should any items be returned to Seller or the manufacturer from which Seller procured the item, without prior written Return Goods Authorization from Seller.

If Goods are returned without obtaining Return Goods Authorization, Seller and its associated manufacturers will not be responsible for the cost of repairs made in the field, if they are made without the written agreement of, and specific written instructions from, Seller and the affected manufacturer, if any.

### Payment Terms:

Full net payment must reach Seller's office by the 30th day after invoice date. The following finance charges will apply for later payment, unless other agreements exist for that sale only:

The account is subject to a finance charge for late payment of the lower of (A) the maximum allowable rate, or (B) 1½ % per month (Annual Percentage Rate: 18%) on the total past due balance at any time that the past due balance includes any charge remaining unpaid 30 days after the date on which it was billed. There shall be no finance charge under a "Consumer Credit Transaction" as defined under the Federal Truth in Lending Law.

### Governing Law:

This agreement has been executed in, and shall be governed by, the laws of the State of Georgia.

### Security Agreement and Security Interest:

Purchaser agrees that Seller shall have and retain a security interest in the material furnished pursuant under this Agreement and, if full payment of all sums due is not received by Seller in accordance with the payment terms set forth herein and on the face hereof, Seller shall have the right to enter Purchaser's premises, and any other place where the material may be located, and repossess the material. This right of repossession shall be in addition to, and in no way in limitation of, any rights or remedies Seller may have under law or this Agreement by reason of Purchaser's failure to pay.

### Purchaser's Acceptance of above Conditions:

All orders shall be subject to the terms and conditions described above, and to no others, whatsoever. When attached to the Seller's written quotation, this document contains the entire agreement between the parties, and there will be no oral or written understandings, terms or conditions, and Purchaser will not have relied upon any conditions or representation not contained therein. No waiver, alteration or modification of the terms and conditions on this and the other side hereof shall be binding unless in writing and signed by an executive officer or by a duly authorized representative of the Seller.

THE PURCHASER'S RECEIPT OF THE INVOICE SHALL CONSTITUTE AN ACCEPTANCE BY THE PURCHASER OF ALL THE TERMS AND CONDITIONS CONTAINED DESCRIBED ABOVE, AND ANY ATTACHMENT HEREOF OTHER THAN ANY TERMS OR CONDITIONS TO WHICH THE PURCHASER SHALL PROMPTLY TAKE EXCEPTION BY SPECIFIED WRITTEN OBJECTION.

Version 12/99 (05/04)