

Headquarters:

TAMGLASS LTD. OY  
Vehmaistenkatu 5,  
P.O. Box 25, 33731 Tampere, FINLAND  
Tel. +358-3-372 3111  
Fax +358-3-372 3190

Sales & service offices:

TAMGLASS EMA SALES  
Vehmaistenkatu 5, P.O. Box 25  
33731 Tampere, FINLAND  
Tel. +358-3-372 3111  
Fax +358-3-372 3235

TAMGLASS AMERICA, INC.  
1007 Parkway View Drive  
Pittsburgh, PA 15205-1424, U.S.A.  
Tel. +1-412-787 7020  
Fax +1-412-787 0534

TAMGLASS UK LTD.  
7 Swanwick Court  
Alfreton, Derbyshire DE55 7AS, U.K.  
Tel. +44-1773 545850  
Fax +44-1773 545851

TAMGLASS GmbH  
Hermannstr. 15,  
90439 Nürnberg, GERMANY  
Tel. +49-911-61 50 05  
Fax +49-911-61 39 66

TAMGLASS S.A.R.L.  
4, rue de la Pyramide  
92100 Boulogne, FRANCE  
Tel. +33-1-46 04 50 92  
Fax +33-1-46 04 50 51

TAMGLASS FAR EAST LTD.  
Unit 705, Level 7, Tower 1  
Grand Central Plaza  
138 Shatin Rural Committee Road  
Shatin, NT, HONG KONG  
Tel. +852-2693 5251  
Fax +852-2694 9036

TAMGLASS JAPAN, INC.  
21-3 Toyotsu-Cho, Suita-Shi  
Osaka 564-0051, JAPAN  
Tel. +81-6-6330 5139  
Fax +81-6-6330 5136

TAMGLASS SINGAPORE PTE. LTD.  
No. 101 Lorong 23, Geylang #01-03  
Prosper House, SINGAPORE 388 399  
Tel. +65-6842 4232  
Fax +65-6842 4234

TAMGLASS MIDDLE EAST  
SC 6 Roundabout 8 Jebel Ali,  
P.O. Box 17322, Dubai  
UNITED ARAB EMIRATES  
Tel. +971-4-8838 268  
Fax +971-4-8836 779

CATTIN MACHINES, S.A.  
Boulevard des Eplatures 50  
2300 La Chaux-de-Fonds, SWITZERLAND  
Tel. +41-32-925 7070  
Fax +41-32-925 7071

Manufacturing facilities:

TAMGLASS ENGINEERING LTD. OY  
Vehmaistenkatu 5, P.O. Box 25  
33731 Tampere, FINLAND  
Tel. +358-3-372 3111  
Fax +358-3-372 3190

TAMGLASS TEMPERING SYSTEMS, INC.  
510 Whitmore Street, Cinnaminson  
N.J. 08077-1626, U.S.A.  
Tel. +1-856-786 1200  
Fax +1-856-786 7606

TAMGLASS SOUTH AMERICA LTDA.  
Avenida Dona Ruyce Ferraz Alvim,  
2906 - Jardim Ruyce  
Diadema - SP, CEP 09961-540, BRAZIL  
Tel. +55 11 4066 2506  
Fax. +55 11 4067 3911

TAMGLASS (TIANJIN) CO. LTD.  
No 5 Xingwang Road  
Wuqing Development Area  
Development Area CHINA  
Tel. +86 22 82123212  
Fax. +86 22 82122122

TAMGLASS REFURBISHING CENTRE  
Lenkkitie 11, 35300 Orivesi, FINLAND  
Tel. +358-3-334 0801  
Fax +358-3-334 0802

Internet: www.tamglass.com

## STANDARD SCOPE OF DELIVERY FOR TAMGLASS SuperConvection™

### MAIN COMPONENTS OF TAMGLASS SuperConvection™

- Loading and unloading conveyors with lifting tables. Laser is used for detecting and measuring loads.
- Complete heating furnace with hydraulic opening.
- Profiled convection system with HeatEx™ heat exchanger and CleanAirCon™ air filtering.
- Integrated high efficiency quenching / cooling section.
- Blower system with ductwork for quench / cooling.
- Complete drive system.
- Batteries for emergency drive with DC motor.
- Microprocessor-based control system with a monitor as an operator interface. Modem included to enable remote on-line help.
- Electrical cabins with internal wiring.
- Complete set of manuals for operation and maintenance.
- Installation supervision with operation and maintenance training.
- Layout design for customer's factory.

### OPTIONAL FEATURES (indicator in parenthesis)

- (2) - Multiple furnace sections adding heating capacity of the system.
- (Q) - Multiple cooling sections for increased cooling capacity.
- (A28) - Tempering 2.8 mm thickness according to ANSI Z97.1.
- (B30) - Tempering 3.0 mm thickness according to ANSI Z97.1.
- (C32) - Tempering 3.2 mm thickness according to ANSI Z97.1.

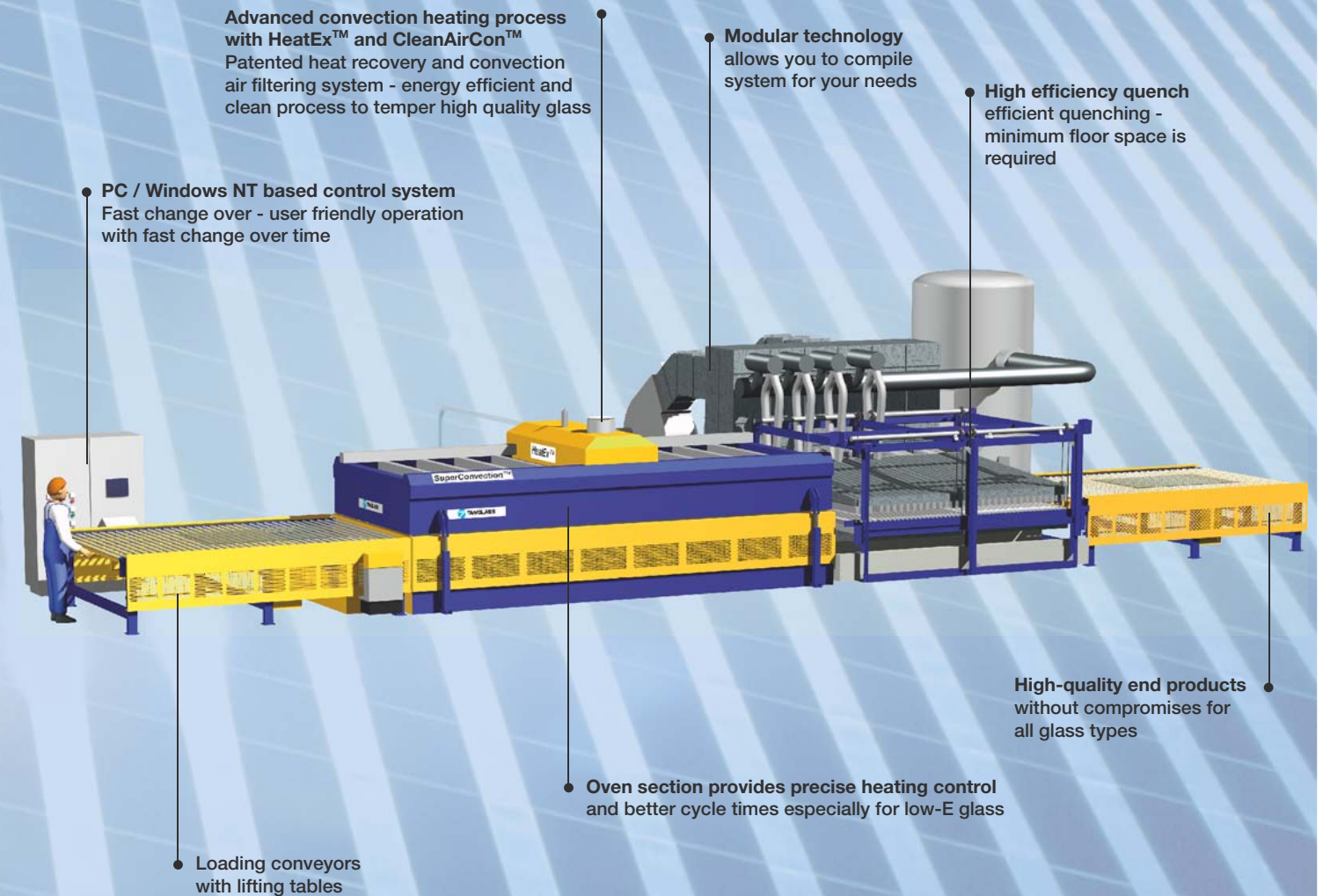
- (PT) - pass through quench blower system for tempering of thin glass. Applicable for future expansions.
- (B) - Readiness for thin glass unit.
- (TS) - Thick glass tempering capability up to 19 mm thickness by two speed blower motor.
- (MR) - Integrated motorized pyrometer on display with graphic recorder in the OIT.
- (RB3) - Integrated bottom pyrometer on display with graphic recorder in the OIT.
- (DR) - Dense roller spacing provides customer with the capability to process small glass sizes.
- (HS) - Heat strengthening system for 3 to 10 mm glass, ASTM 1048.
- (MCC) - Maintenance & consultation contract.
- (NR85) - Noise reduction cabin.
- Compliance with ECE R43, BS 6206
- Other optional features available upon request.

### UTILITIES SUPPLIED BY THE BUYER

- Electric power supply for heating, drives, and blowers - 3 phases, full size neutral (heating only), and ground wire.
- Compressed air requirements designed for 0.74 m<sup>3</sup>/min. at 7 bars or 26 CFM at 100 PSI maximum continuous duty (requirements for convection system specified on table 4).

## TECHNICAL INFORMATION

# SuperConvection™ BATCH-TYPE HORIZONTAL FLAT GLASS TEMPERING SYSTEM WITH CONVECTION



**Advanced convection heating process with HeatEx™ and CleanAirCon™**  
Patented heat recovery and convection air filtering system - energy efficient and clean process to temper high quality glass

**Modular technology**  
allows you to compile system for your needs

**High efficiency quench**  
efficient quenching - minimum floor space is required

**PC / Windows NT based control system**  
Fast change over - user friendly operation with fast change over time

**High-quality end products**  
without compromises for all glass types

**Oven section provides precise heating control**  
and better cycle times especially for low-E glass

**Loading conveyors with lifting tables**



# SPACE REQUIREMENTS

Table 1. Main dimensions of Tamglass SuperConvection™

| Tamglass SuperConvection™ | Total length |      | Total width |      | Total height |        | Blower room dimensions |          | Blower room dimensions with thin glass option |          |
|---------------------------|--------------|------|-------------|------|--------------|--------|------------------------|----------|---|----------|
|                           |              |      |             |      |              |        | L x W x H              |          | L x W x H                                     |          |
|                           | (m)          | (ft) | (m)         | (ft) | (m) *        | (ft) * | (m)                    | (ft)     | (m)   | (ft)     |
| SuperConvection 86x144    | 19.1         | 63   | 6.6         | 22   | 3.6          | 12     | 8.5x5.5x4.0            | 25x16x12 | 12.0x6.5x5.3                                  | 36x19x16 |
| SuperConvection 86x180    | 21.5         | 71   | 6.6         | 22   | 3.6          | 12     | 9.1x6.0x4.0            | 27x18x12 | 13.5x6.5x5.3                                  | 40x19x16 |
| SuperConvection 96x144    | 19.1         | 63   | 6.9         | 23   | 3.6          | 12     | 9.1x6.0x4.0            | 27x18x13 | 13.5x6.5x5.3                                  | 40x19x16 |
| SuperConvection 96x180    | 21.5         | 71   | 6.9         | 23   | 3.6          | 12     | 9.7x6.5x4.0            | 29x19x14 | 14.0x7.0x5.3                                  | 42x21x16 |

NOTE: \* Total height when furnace in 'UP' position.  
Blower room dimensions subject to customer layout.  
Dimensions for two zone furnaces are given separately.

SuperConvection™  
Left-handed model with C32 option

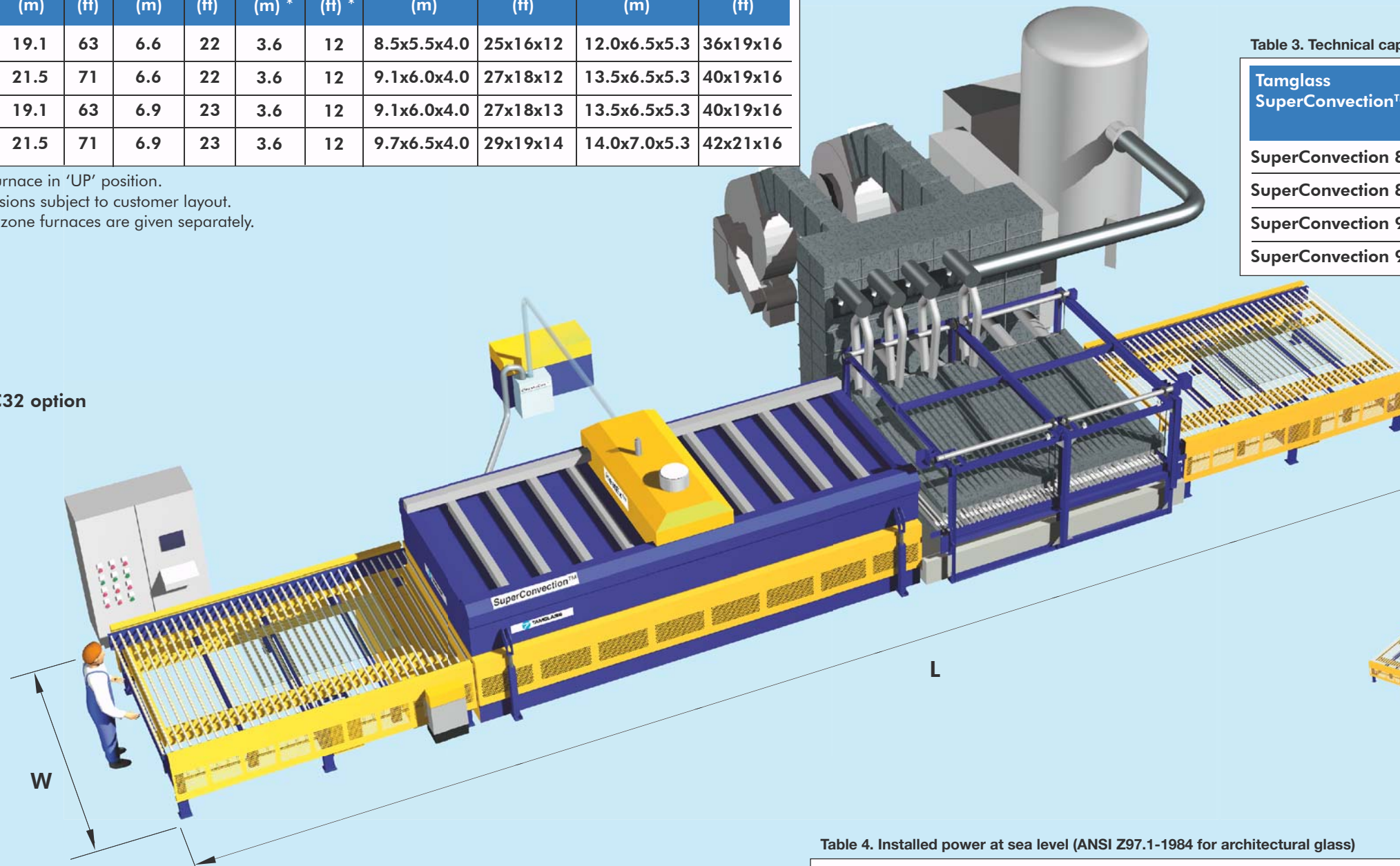


Table 2. Capacity (ANSI Z97.1-1984 for architectural glass)

| Tamglass SuperConvection™ | 3.2 mm (ANSI) |         | 4 mm (ANSI) |         | 6 mm (ANSI) |         | 12 mm (ANSI) |         |
|---------------------------|---------------|---------|-------------|---------|-------------|---------|--------------|---------|
|                           | (m²/h)        | (ft²/h) | (m²/h)      | (ft²/h) | (m²/h)      | (ft²/h) | (m²/h)       | (ft²/h) |
| SuperConvection 86x144    | 221           | 2382    | 186         | 1997    | 131         | 1407    | 48           | 516     |
| SuperConvection 86x180    | 277           | 2977    | 232         | 2497    | 163         | 1759    | 60           | 645     |
| SuperConvection 96x144    | 247           | 2658    | 207         | 2230    | 146         | 1571    | 54           | 576     |
| SuperConvection 96x180    | 309           | 3323    | 259         | 2787    | 182         | 1964    | 67           | 720     |

NOTE: Capacities based on 100% loading efficiency with clear float glass with max. glass 40"x80" (1016x2032 mm), and depending on the edge work quality. Capacities for two-zone furnaces are specified separately.

# TECHNICAL DATA

Key for Tamglass SuperConvection™ furnaces

- Batch horizontal tempering furnace
- Maximum loading area
- Option indicator

SuperConvection™ - 86 x 144 - C32 - DR

Table 3. Technical capabilities of Tamglass SuperConvection™

| Tamglass SuperConvection™ | Loading area |        | Min glass size |      |
|---------------------------|--------------|--------|----------------|------|
|                           | (mm)         | (in)   | (mm)           | (in) |
| SuperConvection 86x144    | 2184x3650    | 86x144 | 102x400        | 4x16 |
| SuperConvection 86x180    | 2184x4570    | 86x180 | 102x400        | 4x16 |
| SuperConvection 96x144    | 2438x3650    | 96x144 | 102x400        | 4x16 |
| SuperConvection 96x180    | 2438x4570    | 96x180 | 102x400        | 4x16 |

NOTE: Smaller glass size is an optional feature.

SuperConvection™  
Right-handed model with PT option

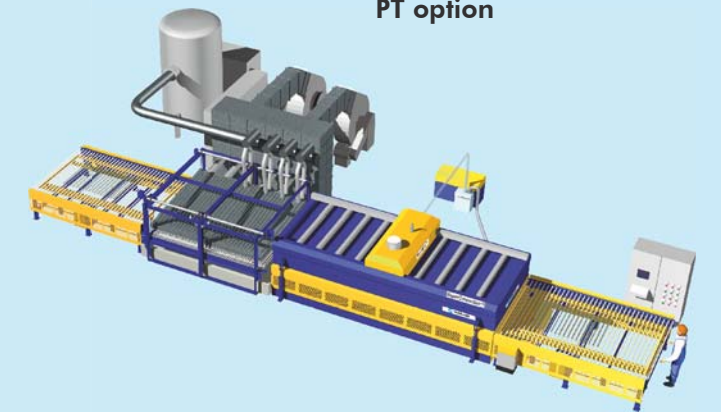


Table 4. Installed power at sea level (ANSI Z97.1-1984 for architectural glass)

Pictures may include optional features.

| Tamglass SuperConvection™ | Heating + Drive (kW) | Convection compressor (kW) | Quench + Cooling (kW) | TOTAL (kW) | Added power for booster* unit (kW) |
|---------------------------|----------------------|----------------------------|-----------------------|------------|------------------------------------|
| SuperConvection 86x144    | 675                  | 75                         | 298                   | 1048       | 132                                |
| SuperConvection 86x180    | 881                  | 75                         | 373                   | 1329       | 132                                |
| SuperConvection 96x144    | 744                  | 86                         | 373                   | 1203       | 160                                |
| SuperConvection 96x180    | 1057                 | 86                         | 447                   | 1590       | 200                                |

NOTE: Installed power specified separately for special conditions (high altitude, temperature).  
\* Additional power needed for booster compressor to temper 3.2 mm glass.