

Gas condensing boiler  
Output: 650 - 2,000kW

elco

heating  
solutions

# TRIGON<sup>®</sup> XXL

Outstanding performance:

Up to 2MW from a single premix boiler



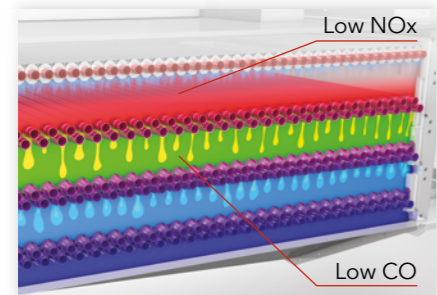
Achieves  
**MAXIMUM  
BREEAM  
CREDITS**

**2**

# TRIGON® XXL – Class-leading outputs with extremely low emissions

## Outstanding design

The TRIGON® XXL offers unrivalled power and performance, delivering outputs up to 2MW, thanks to a one-of-a-kind boiler design.



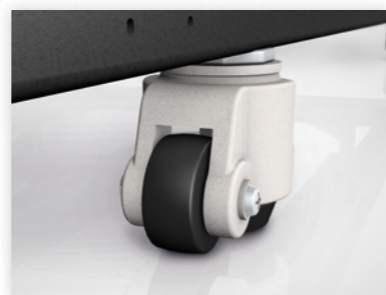
## Extremely low emissions

By combining a unique heat exchanger geometry and a water-cooled cold flame burner, the TRIGON® XXL offers class-leading performance for low NOx and CO.



## Modular construction

ELCO's renowned modular design construction allows the TRIGON® XXL to be disassembled into component parts - providing flexibility when siting the boilers in a commercial property.



## Easy transportation and installation

Integral cargo wheels allow all models to be easily manoeuvred on site.



## Comprehensive control features

Designed for simple system integration, the TRIGON® XXL can operate in cascade arrangements of up to 16 units (32MW) alongside multiple energy sources, while a master-slave cascade function makes commissioning easy.



## BMS connections

The TRIGON® XXL is compatible with common building management system protocols, utilising the ELCO Commercial Gateway for a hassle-free connection.



## Key components

Water flow switch stops the boiler from firing without flow, safeguarding it against heat cell damage.

## Designed for complex systems

The latest commercial heating systems often include multiple heat sources, such as solar, heat pumps and CHP units. As a result, they are becoming more complex and heavily reliant on efficient heat distribution throughout a building.

These demands require accurate hydraulic balancing, which is best achieved using a low loss header or buffer. However, these systems also demand a degree of flexibility and reaction time from integrated heat sources.

ELCO designs its boilers to meet all of these needs by utilising:

## Low water content technology

TRIGON® XXL boilers are fast, furious and respond rapidly - even in complex installations when combined with other heat sources.

## Example comparison:

- The heat up time for a high water content boiler from cold condition to standby temperature is 280 seconds.
- A comparable TRIGON® XXL boiler needs just 30 seconds.

## Compact dimensions and low operating weight

A small footprint and a lightweight construction ensure compatibility with a wide range of applications.

## Rooftop installations/rooftop plant room

By utilising low water content technology, multiple boilers can be situated on rooftops, without any concern over reinforcing the floor - while also delivering superb response times and reduced running costs.



# TRIGON® XXL – Performance for all projects

## The complete range

The TRIGON® XXL range comprises four models that all offer powerful performance, topped by an industry first 2MW version.

### TRIGON® XXL ECO

#### Medium condensing:

- 650 - 1,600kW
- 9 models
- 104.1% efficiency
- NOx (EN 15502)\* = 22 mg/kWh

#### Applications:

- Medium efficiency
- Reduced energy consumption

#### 3 sections:

- 1 burner
- 2 HEX-sections



### TRIGON® XXL EVO

#### High condensing:

- 700 - 1,700kW
- 9 models
- 109.7% efficiency
- NOx (EN 15502)\* = 22 mg/kWh

#### Applications:

- High power/high efficiency
- Low energy consumption

#### 4 sections:

- 1 burner
- 3 HEX-sections



An industry FIRST

### TRIGON® XXL EVO (2 MW)

#### High condensing:

- 2,000kW
- 1 model
- 109.7% efficiency
- NOx (EN 15502)\* = 23 mg/kWh

#### Applications:

- High power/high efficiency
- Low energy consumption

#### 5 sections:

- 1 burner
- 4 HEX-sections



\* NOx values are calculated on GCV

# Technical data TRIGON® XXL ECO

| TRIGON® XXL ECO                             | ECO 650 | ECO 750        | ECO 850        | ECO 950        | ECO 1050       | ECO 1150       | ECO 1300       | ECO 1450       | ECO 1600       |                |
|---|---------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| Nominal heat output at 80/60°C              | kW      | 615            | 719            | 814            | 909            | 1003           | 1097           | 1255           | 1411           | 1568           |
| Minimum heat output at 80/60°C              | kW      | 175            | 204            | 231            | 258            | 285            | 311            | 356            | 400            | 445            |
| Nominal heat output at 40/30°C              | kW      | 620            | 725            | 821            | 917            | 1011           | 1106           | 1265           | 1422           | 1581           |
| Minimum heat output at 40/30°C              | kW      | 192            | 224            | 254            | 284            | 314            | 343            | 392            | 440            | 490            |
| Nominal heat input full load Net            | kW      | 653            | 764            | 865            | 966            | 1066           | 1166           | 1333           | 1499           | 1666           |
| Minimum heat input min. load Net            | kW      | 187            | 218            | 247            | 276            | 305            | 333            | 381            | 428            | 476            |
| Efficiency at 80/60°C full load Net/Gross   | %       | 94.1/<br>84.8  | 94.1/<br>84.8  | 94.1/<br>84.8  | 94.1/<br>84.8  | 94.1/<br>84.8  | 94.1/<br>84.8  | 94.1/<br>84.8  | 94.1/<br>84.8  | 94.1/<br>84.8  |
| Efficiency at 40/30°C min. load Net/Gross   | %       | 104.1/<br>93.8 | 104.1/<br>93.8 | 104.1/<br>93.8 | 104.1/<br>93.8 | 104.1/<br>93.8 | 104.1/<br>93.8 | 104.1/<br>93.8 | 104.1/<br>93.8 | 104.1/<br>93.8 |
| Efficiency at 30°C return 30% load Gross    | %       | 92.7           | 92.7           | 92.7           | 92.7           | 92.7           | 92.7           | 92.7           | 92.7           | 92.7           |
| Gross seasonal efficiency*                  | %       | 91.20          | 91.20          | 91.20          | 91.20          | 91.20          | 91.20          | 91.20          | 91.20          | 91.20          |
| Gas consumption max/min nat gas G20         | m³/h    | 59.9/<br>17.2  | 70.1/<br>20.0  | 79.4/<br>22.7  | 88.6/<br>25.3  | 97.8/<br>28.0  | 107.0/<br>30.6 | 122.3/<br>35.0 | 137.5/<br>39.3 | 152.8/<br>43.7 |
| Gas consumption max/min LPG G31             | kg/h    | 51/<br>14.6    | 59.7/<br>17    | 67.6/<br>19.3  | 75.5/<br>21.6  | 83.3/<br>23.8  | 91.1/<br>26    | 104.1/<br>29.8 | 117.1/<br>33.4 | 130.2/<br>37.2 |
| Gas inlet pressure nominal nat gas (G20)    | mbar    | 20             | 20             | 20             | 20             | 20             | 35             | 35             | 35             | 35             |
| Gas inlet pressure nominal LPG (G31)        | mbar    | 30             | 30             | 30             | 30             | 30             | 50             | 50             | 50             | 50             |
| NOx emissions (EN 15502)***                 | mg/kWh  | 20             | 20             | 20             | 20             | 20             | 20             | 20             | 20             | 20             |
| BREEAM Credits**                            | -       | 2              | 2              | 2              | 2              | 2              | 2              | 2              | 2              | 2              |
| Flue gas temperature at 80/60°C full load   | °C      | 153            | 153            | 153            | 153            | 153            | 153            | 153            | 153            | 153            |
| Max. permissible flue resistance            | Pa      | 150            | 150            | 150            | 150            | 150            | 150            | 150            | 150            | 150            |
| Water pressure max/min                      | bar     | 8/1.5          | 8/1.5          | 8/1.5          | 8/1.5          | 8/1.5          | 8/1.5          | 8/1.5          | 8/1.5          | 8/1.5          |
| Maximum temperature setpoint                | °C      | 90             | 90             | 90             | 90             | 90             | 90             | 90             | 90             | 90             |
| Water flow at ΔT=11K                        | lit/sec | 13.3           | 15.6           | 17.7           | 19.8           | 21.8           | 23.8           | 27.3           | 30.7           | 34.0           |
| Hydraulic resistance at ΔT=11K              | kPa     | 129            | 80             | 96             | 116            | 139            | 225            | 179            | 255            | 354            |
| Water flow at ΔT=20K                        | lit/sec | 7.3            | 8.6            | 9.7            | 10.8           | 11.9           | 13.1           | 15.0           | 16.9           | 18.7           |
| Hydraulic resistance at ΔT=20K              | kPa     | 39             | 24             | 29             | 35             | 42             | 68             | 54             | 77             | 107            |
| Water flow at ΔT=30K                        | lit/sec | 4.9            | 5.8            | 6.4            | 7.2            | 8.0            | 8.7            | 10.3           | 11.2           | 12.4           |
| Hydraulic resistance at ΔT=30K              | kPa     | 18             | 11             | 13             | 16             | 19             | 31             | 24             | 35             | 48             |
| Water content                               | l       | 53             | 70             | 75             | 80             | 85             | 97             | 109            | 116            | 123            |
| Electrical connection                       | V       | 400            | 400            | 400            | 400            | 400            | 400            | 400            | 400            | 400            |
| Electrical power consumption boiler         | W       | 900            | 900            | 1270           | 1270           | 1270           | 2330           | 2330           | 2770           | 2770           |
| Sound Power Level                           | dB(A)   | 68.7           | 68.7           | 68.7           | 68.7           | 68.7           | 68.7           | 68.7           | 68.7           | 68.7           |
| Weight (empty)                              | kg      | 844            | 958            | 1084           | 1221           | 1369           | 1380           | 1740           | 1899           | 1991           |
| <b>Dimensions</b>                           |         |                |                |                |                |                |                |                |                |                |
| Water connections (W)                       | -       | DN65<br>PN16   | DN80<br>PN16   | DN80<br>PN16   | DN80<br>PN16   | DN80<br>PN16   | DN80<br>PN16   | DN80<br>PN16   | DN80<br>PN16   | DN80<br>PN16   |
| Gas connection (G)                          | -       | R2"            | R2"            | R2"            | DN65<br>PN16   | DN65<br>PN16   | DN65<br>PN16   | DN65<br>PN16   | DN80<br>PN16   | DN80<br>PN16   |
| Flue gas connection (C)                     | mm      | 350            | 350            | 400            | 400            | 400            | 450            | 450            | 500            | 500            |
| Air intake connection (for room sealed use) | mm      | 355            | 355            | 355            | 355            | 355            | 450            | 450            | 450            | 450            |
| Condensate connection                       | mm      | 40             | 40             | 40             | 40             | 40             | 400            | 40             | 40             | 40             |
| Boiler length (incl. connections)           | mm      | 2185           | 2565           | 2565           | 2565           | 2565           | 2795           | 3310           | 3310           | 3310           |
| Boiler length (excl. connections)(L1)       | mm      | 1710           | 2085           | 2085           | 2085           | 2085           | 2085           | 2600           | 2600           | 2600           |
| Length chimney plate (L2)                   | mm      | 550            | 550            | 550            | 550            | 550            | 710            | 710            | 710            | 710            |
| Width (B)                                   | mm      | 1370           | 1170           | 1170           | 1370           | 1370           | 1570           | 1370           | 1570           | 1570           |
| Height (H)                                  | mm      | 1555           | 1555           | 1555           | 1555           | 1555           | 1555           | 1575           | 1575           | 1575           |

\* In accordance with equation 2 in the Non-Domestic Building Services Compliance Guide

\*\* BREEAM UK New Construction 2018 \*\*\* NOx values are calculated on GCV



# Technical data TRIGON® XXL EVO

| TRIGON® XXL EVO                                    |         | EVO 700        | EVO 800        | EVO 900        | EVO 1000       | EVO 1100       | EVO 1200       | EVO 1400       | EVO 1550       | EVO 1700       | EVO 2000       |
|--|---------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| Nominal heat output at 80/60°C                     | kW      | 639            | 747            | 846            | 945            | 1043           | 1141           | 1304           | 1467           | 1630           | 1953           |
| Minimum heat output at 80/60°C                     | kW      | 182            | 212            | 241            | 269            | 297            | 324            | 371            | 417            | 464            | 487            |
| Nominal heat output at 40/30°C                     | kW      | 682            | 798            | 904            | 1009           | 1114           | 1218           | 1393           | 1566           | 1741           | 2087           |
| Minimum heat output at 40/30°C                     | kW      | 205            | 239            | 271            | 303            | 334            | 365            | 418            | 469            | 522            | 548            |
| Nominal heat input full load Net                   | kW      | 653            | 764            | 865            | 966            | 1066           | 1166           | 1333           | 1499           | 1666           | 2000           |
| Minimum heat input min. load Net                   | kW      | 187            | 218            | 247            | 276            | 305            | 333            | 381            | 428            | 476            | 500            |
| Efficiency at 80/60°C full load Net/Gross          | %       | 97.8/<br>88.1  | 97.8/<br>88.1  | 97.8/<br>88.1  | 97.8/<br>88.1  | 97.8/<br>88.1  | 97.8/<br>88.1  | 97.8/<br>88.1  | 97.8/<br>88.1  | 97.8/<br>88.1  | 97.7/<br>88.0  |
| Efficiency at 40/30°C min. load Net/Gross          | %       | 109.7/<br>98.8 | 109.7/<br>98.8 | 109.7/<br>98.8 | 109.7/<br>98.8 | 109.7/<br>98.8 | 109.7/<br>98.8 | 109.7/<br>98.8 | 109.7/<br>98.8 | 109.7/<br>98.8 | 109.7/<br>98.8 |
| Efficiency at 30°C return 30% load Gross           | %       | 97.7           | 97.7           | 97.7           | 97.7           | 97.7           | 97.7           | 97.7           | 97.7           | 97.7           | 97.7           |
| Gross seasonal efficiency*                         | %       | 95.9           | 95.9           | 95.9           | 95.9           | 95.9           | 95.9           | 95.9           | 95.9           | 95.9           | 95.9           |
| Gas consumption max/min nat gas G20                | m³/h    | 59.9/<br>17.2  | 70.1/<br>20.0  | 79.4/<br>22.7  | 88.6/<br>25.3  | 97.8/<br>28.0  | 107.0/<br>30.6 | 122.3/<br>35.0 | 137.5/<br>39.3 | 152.8/<br>43.7 | 183.5/<br>45.9 |
| Gas consumption max/min LPG G31                    | kg/h    | 51/<br>14.6    | 59.6/<br>17    | 67.6/<br>19.3  | 75.5/<br>21.6  | 83.3/<br>23.8  | 91.1/<br>26    | 104.1/<br>29.8 | 117.1/<br>33.4 | 130.2/<br>37.2 | 156.3/<br>39.1 |
| Gas inlet pressure nominal nat gas (G20)           | mbar    | 20             | 20             | 20             | 20             | 20             | 35             | 35             | 35             | 35             | 50             |
| Gas inlet pressure nominal LPG (G31)               | mbar    | 30             | 30             | 30             | 30             | 30             | 50             | 50             | 50             | 50             | 50             |
| NOx emissions (EN 15502)                           | mg/kWh  | 20             | 20             | 20             | 20             | 20             | 20             | 20             | 20             | 20             | 21             |
| BREEAM Credits**                                   | -       | 2              | 2              | 2              | 2              | 2              | 2              | 2              | 2              | 2              | 2              |
| Flue gas temperature at 80/60°C full load          | °C      | 69             | 69             | 69             | 69             | 69             | 69             | 69             | 69             | 69             | 73             |
| Max. permissible flue resistance                   | Pa      | 150            | 150            | 150            | 150            | 150            | 150            | 150            | 150            | 150            | 150            |
| Water pressure max/min                             | bar     | 8/1.5          | 8/1.5          | 8/1.5          | 8/1.5          | 8/1.5          | 8/1.5          | 8/1.5          | 8/1.5          | 8/1.5          | 8/1.5          |
| Maximum temperature setpoint                       | °C      | 90             | 90             | 90             | 90             | 90             | 90             | 90             | 90             | 90             | 90             |
| Water flow at ΔT=11K                               | lit/sec | 13.9           | 16.2           | 18.4           | 20.5           | 22.7           | 24.8           | 28.3           | 31.9           | 35.4           | 46.5           |
| Hydraulic resistance at ΔT=11K                     | kPa     | 245            | 133            | 182            | 222            | 275            | 305            | 275            | 424            | 532            | 714            |
| Water flow at ΔT=20K                               | lit/sec | 7.6            | 8.9            | 10.0           | 11.3           | 12.5           | 13.6           | 15.6           | 17.5           | 19.4           | 23.4           |
| Hydraulic resistance at ΔT=20K                     | kPa     | 74             | 40             | 55             | 67             | 83             | 92             | 83             | 128            | 160            | 216            |
| Water flow at ΔT=30K                               | lit/sec | 5.1            | 5.9            | 6.7            | 7.5            | 8.3            | 9.1            | 10.4           | 11.7           | 13.0           | 15.6           |
| Hydraulic resistance at ΔT=30K                     | kPa     | 33             | 18             | 25             | 30             | 37             | 41             | 37             | 57             | 72             | 96             |
| Water content                                      | l       | 73             | 97             | 104            | 110            | 117            | 131            | 147            | 157            | 166            | 209            |
| Electrical connection                              | V       | 400            | 400            | 400            | 400            | 400            | 400            | 400            | 400            | 400            | 400            |
| Electrical power consumption boiler                | W       | 900            | 900            | 1270           | 1270           | 1270           | 2330           | 2330           | 2770           | 2770           | 2770           |
| Sound Power Level                                  | dB(A)   | 68.7           | 68.7           | 68.7           | 68.7           | 68.7           | 68.7           | 68.7           | 68.7           | 68.7           | 72.7           |
| Weight (empty)                                     | kg      | 1136           | 1328           | 1468           | 1634           | 1800           | 1900           | 2000           | 2100           | 2201           | 2500           |
| <b>Dimensions</b>                                  |         |                |                |                |                |                |                |                |                |                |                |
| Water connections (W)                              | -       | DN65<br>PN16   | DN80<br>PN16   | DN80<br>PN16   | DN80<br>PN16   | DN80<br>PN16   | DN80<br>PN16   | DN80<br>PN16   | DN80<br>PN16   | DN80<br>PN16   | DN80<br>PN16   |
| Gas connection (G)                                 | -       | R2"            | R2"            | R2"            | DN65<br>PN16   | DN65<br>PN16   | DN65<br>PN16   | DN65<br>PN16   | DN80<br>PN16   | DN80<br>PN16   | DN80<br>PN16   |
| Flue gas connection (C)                            | mm      | 300            | 350            | 350            | 400            | 400            | 450            | 450            | 500            | 500            | 500            |
| Air intake connection (A)<br>(for room sealed use) | mm      | 250            | 355            | 355            | 355            | 355            | 450            | 450            | 450            | 450            | 450            |
| Condensate connection                              | mm      | 40             | 40             | 40             | 40             | 40             | 40             | 40             | 40             | 40             | 40             |
| Boiler length (incl. connections)                  | mm      | 2185           | 2565           | 2565           | 2565           | 2565           | 2795           | 3310           | 3310           | 3310           | 3310           |
| Boiler length (excl. connections) (L1)             | mm      | 1710           | 2085           | 2085           | 2085           | 2085           | 2085           | 2600           | 2600           | 2600           | 2600           |
| Length chimney plate (L2)                          | mm      | 550            | 550            | 550            | 550            | 550            | 710            | 710            | 710            | 710            | 710            |
| Width (B)  | mm      | 1370           | 1170           | 1170           | 1370           | 1370           | 1570           | 1370           | 1570           | 1570           | 1570           |
| Height (H) (incl. cargo wheels)                    | mm      | 1555           | 1555           | 1555           | 1555           | 1555           | 1555           | 1575           | 1575           | 1575           | 1665           |

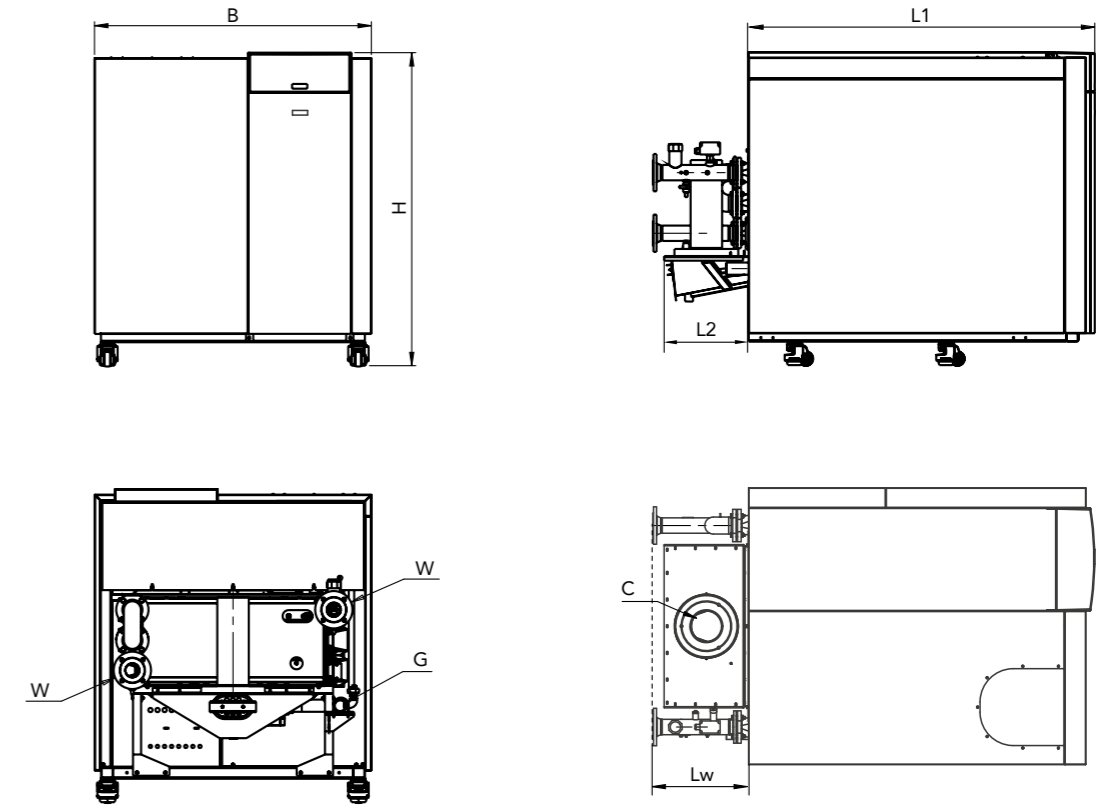
\* In accordance with equation 2 in the Non-Domestic Building Services Compliance Guide



# Dimensions TRIGON® XXL

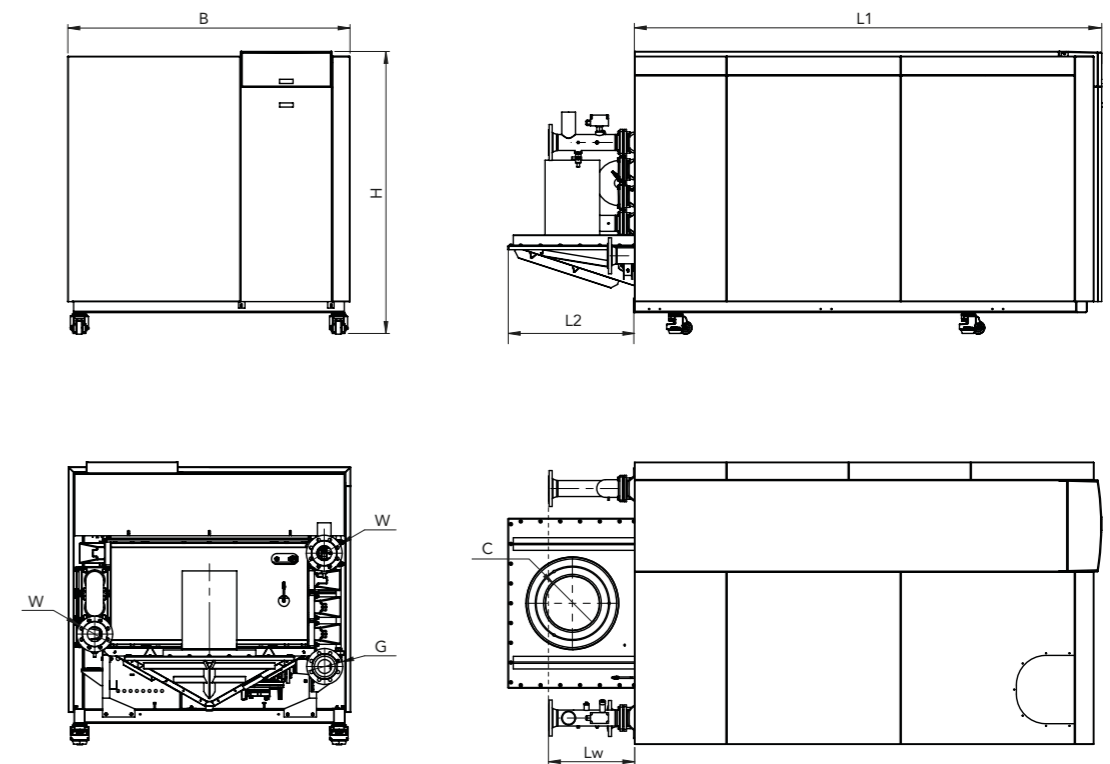
## Dimensions

- ECO 650 - 1150
- EVO 700 - 1100



## Dimensions

- ECO 1300 - 1600
- EVO 1200 - 2000



For detailed dimension indications please consult the TRIGON® XXL technical manual.



# ELCO – A partner you can rely on

As a specialist partner, you can rely on ELCO's extensive boiler expertise, from planning right through to servicing and maintenance. Our specially trained technicians are available around the clock to help with the installation and commissioning of commercial boilers – offering their experience and assistance when you need it the most.



### Commissioning

Our specialists always work together with you in commissioning an ELCO boiler properly to provide a high quality service.



### First class service

Whether it is repairs, maintenance or troubleshooting, our service technicians are there for you seven days a week.



### Trained and certified service technicians

Our ELCO service technicians are specially trained, qualified and fully equipped with the tools required to ensure boilers are maintained to the highest standards.

## More information

|                              |              |                      |
|------------------------------|--------------|----------------------|
| <b>Service Department</b>    | 01268 546770 | service@elco.co.uk   |
| <b>Spares Department</b>     | 01268 546771 | spares@elco.co.uk    |
| <b>Sales Department</b>      | 01268 207244 | enquiries@elco.co.uk |
| <b>After Sales Technical</b> | 01268 546772 | technical@elco.co.uk |
| <b>Training</b>              | 01268 207244 | marketing@elco.co.uk |



[www.elco.co.uk](http://www.elco.co.uk)

## Your local contact is:



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