

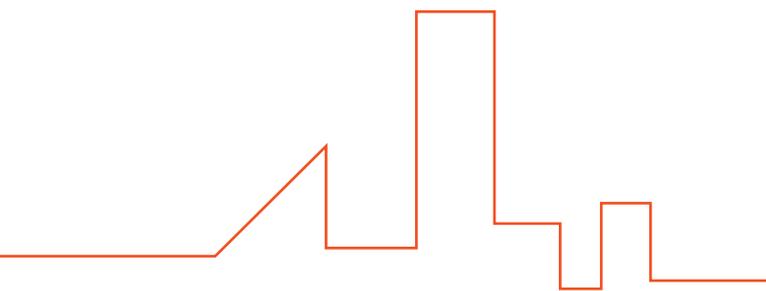


Heating



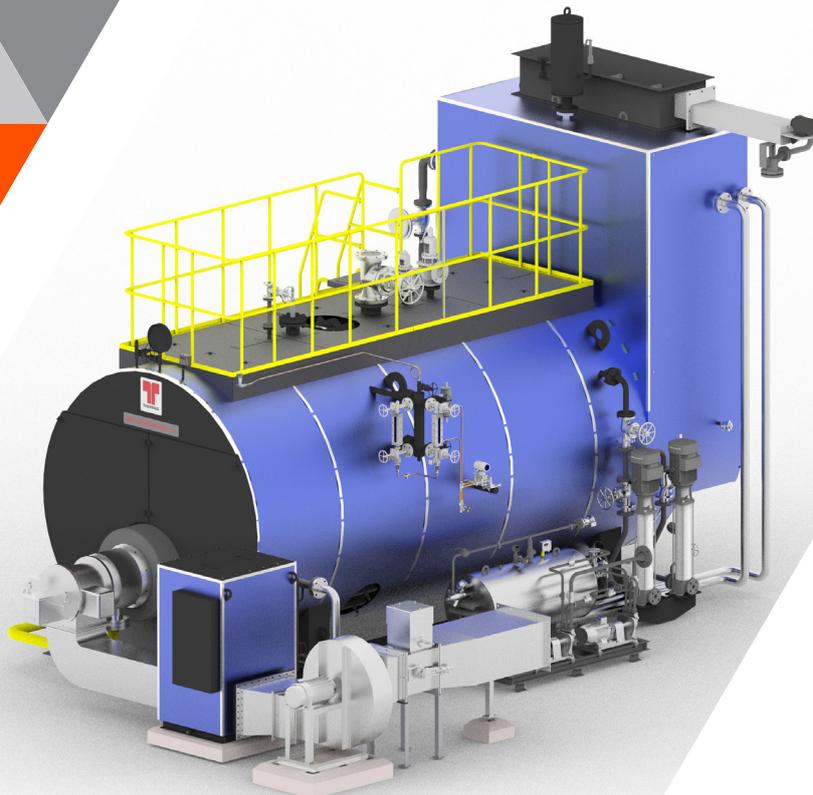
# Shellmax Global Ultra

Flexible. Compact. Advanced



Capacity: 1 TPH to 16 TPH,  
customisable up to 34 TPH

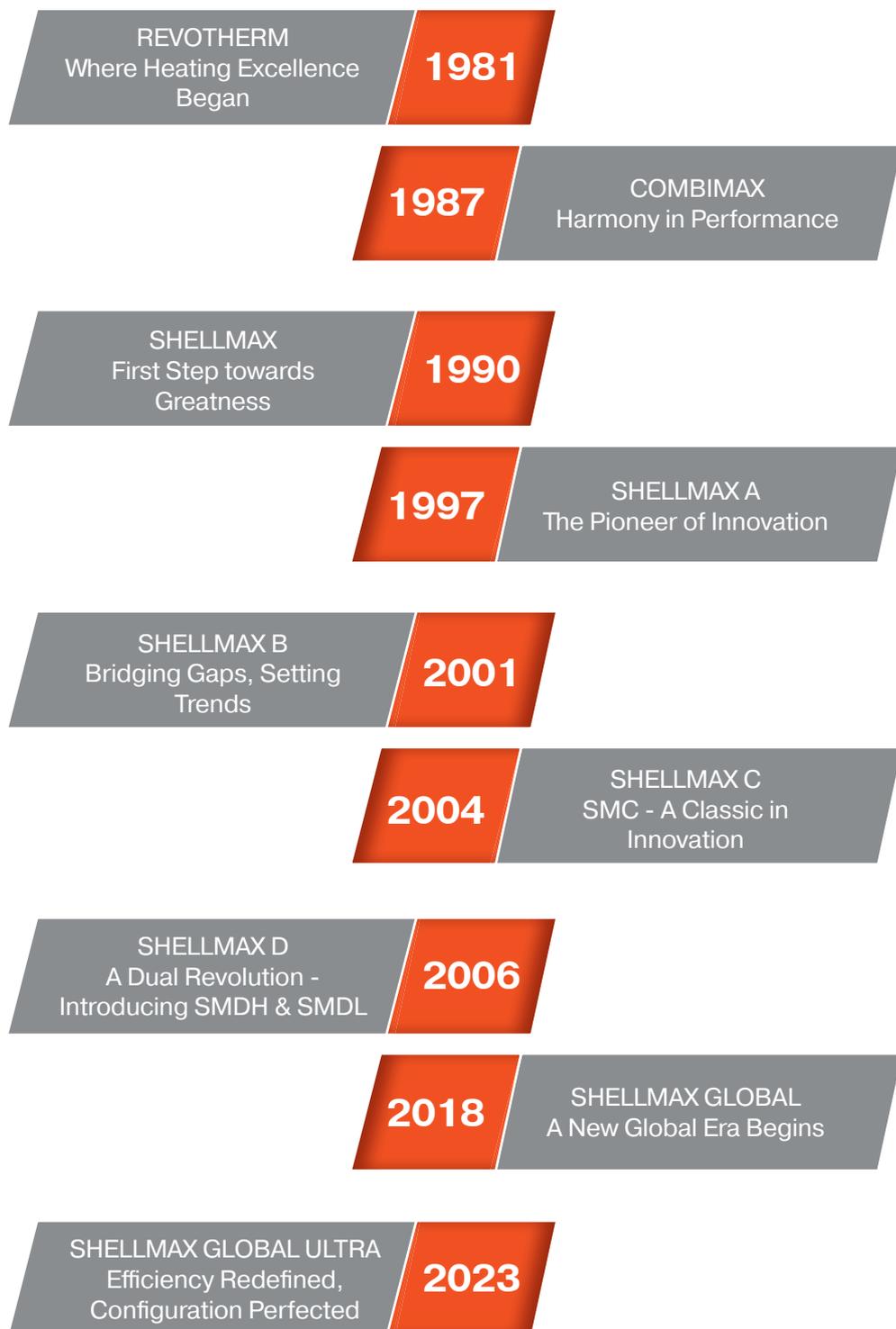
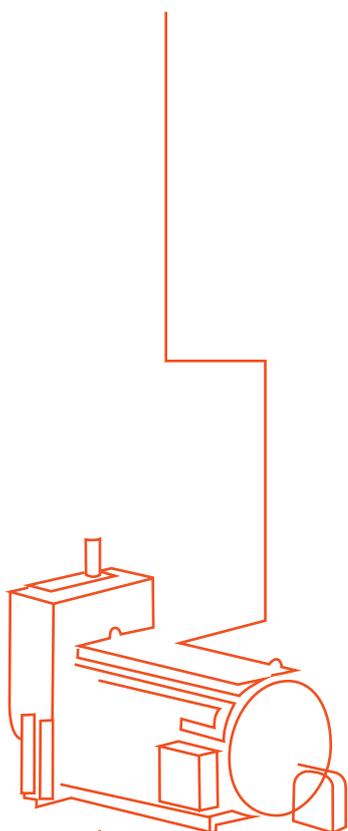
Standard Design Pressure:  
10.54/17.5 kg/cm<sup>2</sup>(g)



# Conserving Resources, Preserving the Future.

Thermax, a frontrunner in providing sustainable energy and environment solutions and is committed to living up to its brand promise of 'Conserving Resources, Preserving the Future'. Thermax's product portfolio covers air pollution control solutions, heating, cooling, water and waste management, and specialty chemicals. The company also designs, builds, and commissions large boilers for steam and power generation, turnkey power plants, and waste-to-energy systems. Thermax remains focused on continuously strengthening its green portfolio to be a clean air, clean energy, and clean water company.

## Legacy of Shellmax Global Series



# Shellmax Global

## Ultra Series

The Shellmax Global Ultra Series boilers are designed with careful consideration to meet evolving needs, offering user flexibility and adhering to global standards. These boilers stand out with their unique and ultra-smart features, allowing users to select modules based on industry requirements, ultimately ensuring the highest efficiency.

### Unique Furnace



Liberal sized furnace (high volume) helps in achieving higher combustion efficiency & longer life of the boiler



Suitable for variety of burners



Low VHRR ensures lower emissions & higher efficiency



Higher HTA, lower exit temp ensures longer life

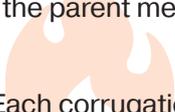


### Thermax - Corrugated Furnace\* for Reliability & Longer Life

The furnace of boiler is subject to high pressure, differential temperature across the wall which causes bending stress due to differential expansion. Further, load fluctuations & pressure variation create enormous thermal cycling across the furnace. International codes for boiler design have recommended corrugation to improve mechanical strength of boiler by increasing the moment of inertia.

The entire corrugation process is carried out at an in-house facility, at normalizing temperature (hot forming at 950° to 980°C) to make sure the grain structure in the steel is oriented close to the parent metal to ensure physical properties.

Uniformity does not allow high stress concentration at discrete points, unlike bowling hoops / stiffener rings.



Each corrugation acts as point of support, increasing the moment of inertia.

Corrugation provides adequate flexibility to take care of differential expansion between furnace & tubes.

\* For specific capacities



# Flexibility Redefined

Select the best for your industry's process heating needs. Gain a competitive advantage with our configurable modules.



## 01

### Burner Technology

- Dualbloc
- Monobloc



## 02

### Burner Management System

- MCR
- ECR
- O<sub>2</sub> trimming



## 03

### Heat Recovery Unit

- Effimizer
- Effinext
- Dewtherm



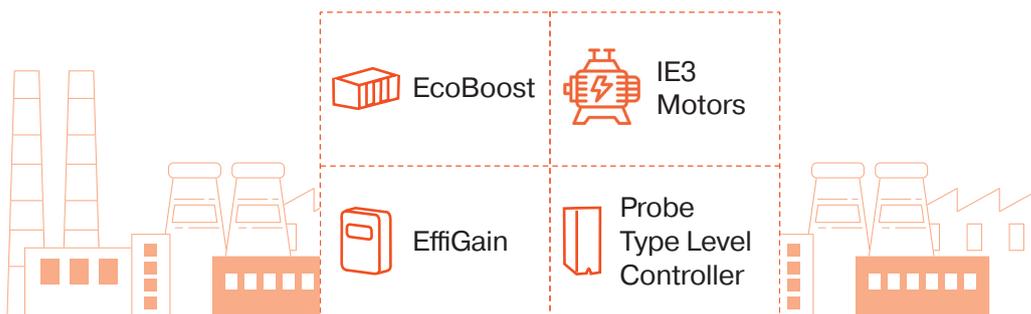
## 04

### Boiler Management

- Thermowiz Nxt
- EDGE Live®
- Relay based panel

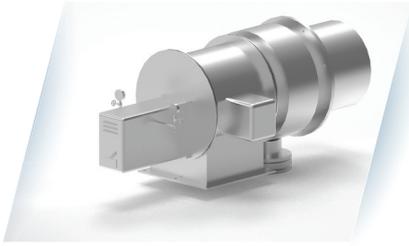


## Now with Ultra Features





## 1. European Burner Technology



### Dualbloc Burner

- Compatible with various Heat Recovery Units
- Possibility of retrofitting various PCE/HRU in future

- Compatible with hot combustion air ensuring better combustion
- High availability due to possibility of redundancy in various components



### Monobloc Burner

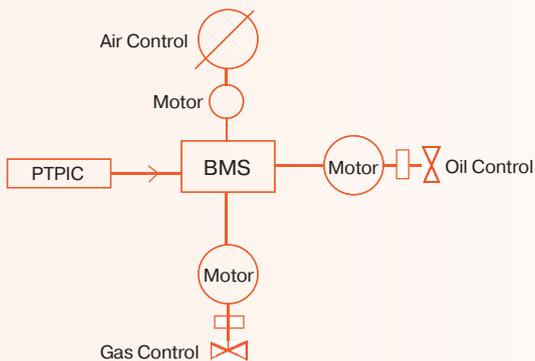
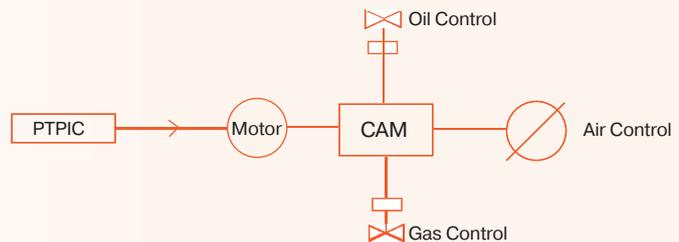
- Plug & play operation
- Compact footprint
- Low installation cost



## 2. Burner Management System

### MCR

- Well-established technology that operators worldwide feel comfortable
- Reliable performance
- Easy availability of spare parts

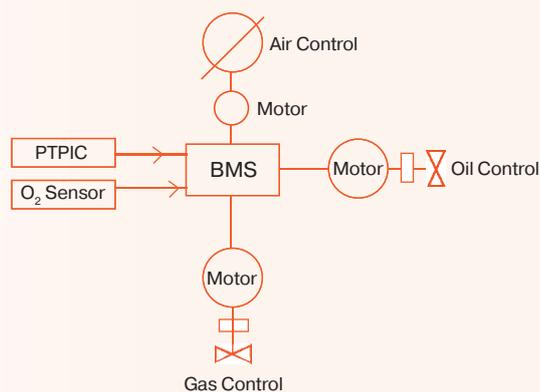


### ECR

- Precise air-to-fuel ratio control, especially at part load conditions
- Safe operations
- Controlled emission at all load conditions

### ECR with O<sub>2</sub> trimming

- Increased efficiency, especially at part load conditions
- Coupled with VFD operation for Power benefit
- All benefits of ECR also apply



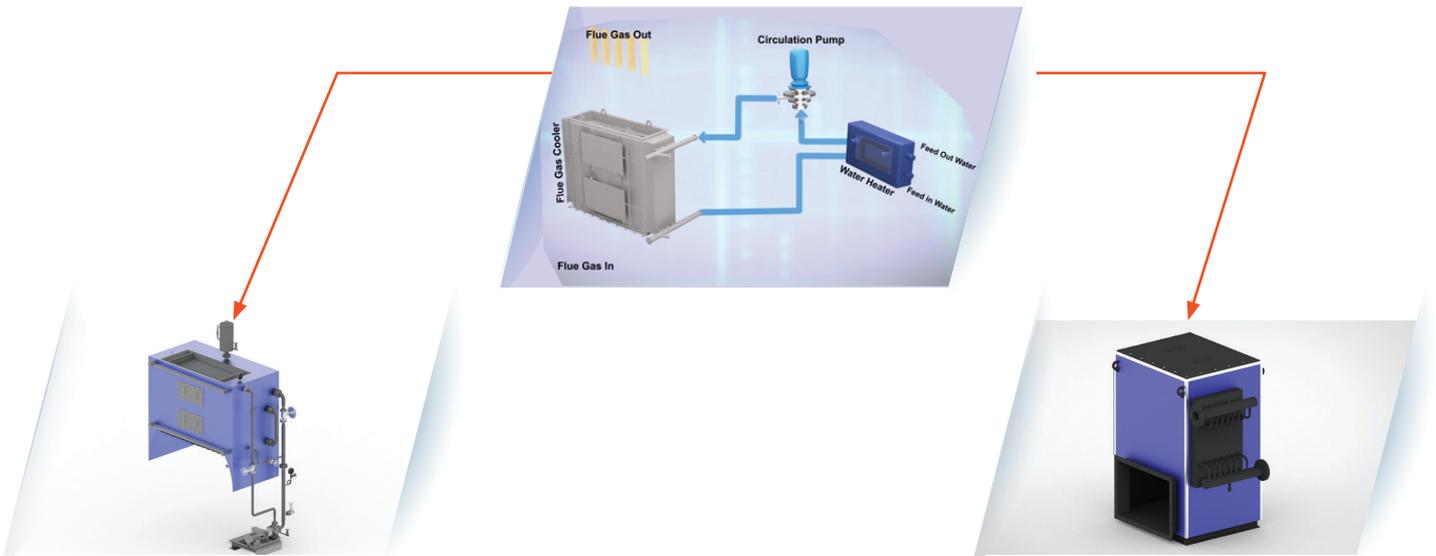


### 3. Heat Recovery Units

Thermax's unique patented technology utilises a circulating secondary medium to recover heat from the hot flue gas and to transfer it to the incoming feedwater or combustion air, all without direct contact between the two.

The secondary medium temperature control system maintains the circulating medium above the dew point, tailored to the sulphur content of the fuel type. This eliminates the need for bypassing the heat recovery system with changing fuels or load conditions, offering unparalleled fuel flexibility and maximising heat recovery, even at part load conditions.

Utilising the above unique technology, two heat recovery options are available, Effimiser and EffiNxt.



#### Effimiser

Utilising the unique patented secondary circulating medium temperature control for heating feedwater

#### EffiNxt

Utilising the unique patented secondary circulating medium temperature control for heating combustion air

#### BENEFITS

Reduced footprint and installation cost

Reduced fuel bill

Fuel flexibility

Improved uptime - No boiler stoppage due to tube failure

Reliability and long life - Higher resistance to corrosion by pitting



#### Dewtherm

Dewtherm is a revolutionary heat recovery technology that condenses water vapour in flue gases to recover the latent heat of water vapour, thereby maximising heat recovery.

- Improved efficiency up to **103%\***
- Ideal for retrofitting due to its independent draft system
- Customisable to suit unique makeup water requirements



## 4. Boiler Management Systems

### Thermowiz™ Nxt

Experience the power of technology with Thermowiz™ Nxt, a digitally powered device for monitoring, control, and protection of equipment.

- Touch screen graphical operator interface makes it highly user friendly
- MIS reporting enables real-time trends and data logging downloadable on a USB drive
- Networking – Embedded ports on Ethernet, Serial, CAN Open Protocols
- Program modification – Download programs through a USB drive



### EDGE Live®



## THERMAX EDGE™ Live

Shellmax Global Ultra comes enabled with EDGE Live®, an intelligent IIoT solution with ensured data security that enables

- Efficiency monitoring and diagnostics
- Data-driven preventive maintenance scheduling
- Remote monitoring of all critical parameters

### Relay-based panel

- Well-established technology familiar to operators worldwide
- Reliable performance
- Easy availability of spare parts

# Ultra Features

## EcoBoost

- EcoBoost integrates heat pumping and heat recovery technology to maximise the steam generation efficiency and to minimise operating cost.
- This reduces the cost of steam heating for preheating the makeup water by integrating it with heat pumping technology.



## Probe Type Level Controller

- Maximum uptime – Zero moving parts and no electro-mechanical interface
- Energy efficient – Blow-down is not required
- Compact and easy to install, thereby saving complicated piping
- Self-monitoring controller complies with SIL3
- CE marking, meets EC directive 97/23/EC



## Effigain

### Making Relay-based Boiler Smart

- EffiGain is an efficiency monitoring and diagnostic system that provides insights required to ensure the equipment operation at optimum efficiency levels. This ultimately results in the reduction of steam costs.



## IE3 Motors

- Premium efficiency motors that minimise power consumption and optimise performance



# Shellmax

## Global Ultra-DB

Shellmax Global Ultra-DB is a fully packaged, smoke-tube type, 3-pass boiler tailored for oil/gas firing, equipped with a dual bloc burner. With the possibility of incorporation with IIoT capabilities, it stands out with best-in-class efficiency. Its thoughtfully engineered design ensures suitability for redundancy, contributing to heightened system reliability. Additionally, it boasts world-class aesthetics, combining functionality with an appealing visual design.



### Burner Management Systems

- MCR
- ECR



### Heat Recovery Units

- Effimiser
- EffiNxt
- Dewtherm



### Burner Technology

- Dualbloc burner



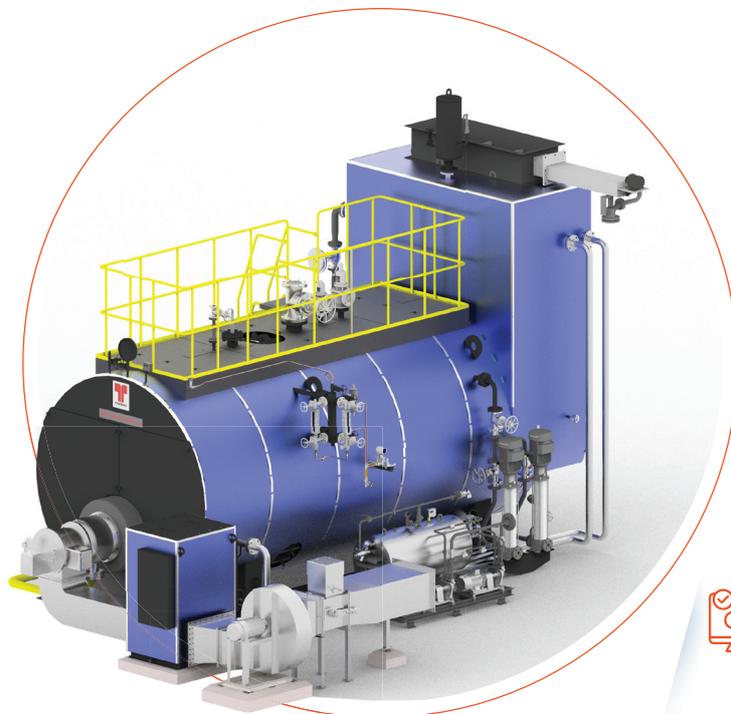
### Boiler Management Systems

- Relay Panel
- Thermowiz™ Nxt



### Compatible with Hot Air

This boiler model is capable of handling hot air thus improving combustion and making it compatible with multiple HRU options.



### Flexibility to Retrofit

This boiler model also provides the flexibility to retrofit Heat Recovery Units (HRU) and Pollution Combustion Equipment (PCE) in the future.



### \*Thermowiz™ Nxt

- Unleashing new PLC with HMI
- IIoT enabled, with remote monitoring



# Shellmax

## Global Ultra-MB

Shellmax Global Ultra-MB is a fully packaged, smoke-tube type, 3-pass, oil/gas-fired boiler. Equipped with Monobloc Burner and IIoT features, it offers plug-and-play boiler operation, best-in-class efficiency, low cost of ownership and world-class aesthetics.



### Burner Management Systems

- MCR
- ECR
- ECR with O<sub>2</sub> trimming



### Heat Recovery Units

- Effimiser
- Dewtherm



### Burner Technology

- Monobloc burner



### Boiler Management Systems

- Thermowiz™ Nxt



### Low Cost of Ownership

Reduced fuel bills



### Compact Footprint

- 100% skid mounted
- World class aesthetics
- Ergonomic design



### Smart Controls

- Unleashing new PLC with HMI
- IIoT enabled, with remote monitoring



### Plug & Play

- Saves installation time and cost
- Minimal civil work
- Factory insulated boiler skid
- Pre-wired and pre-assembled



# Technical Specifications

## Shellmax Global Ultra DB with Effimiser

SM GLOBAL ULTRA DB	TPH	1	1.5	2	3	4	5	6	8	10	12	14	16
Output F&A 100 Deg C	Kg/hr	1000	1500	2000	3000	4000	5000	6000	8000	10000	12000	14000	16000
Design Pressure	Kg/cm <sup>2</sup> (g)	10.54/17.5											
Thermal Efficiency on NCV (As per BS 845 Part 1) with Effimiser													
FO	%	93.5											
LO	%	94											
NG	%	95											
Fuel Consumption with Effimiser													
FO	Kg/hr	60	90	120	180	239	299	359	479	598	718	838	958
LO	Kg/hr	56	84	113	169	225	282	338	451	563	676	788	901
NG	Nm <sup>3</sup> /hr	67	100	134	201	267	334	401	535	669	802	936	1070
Connected Load with Effimiser in KW													
FO	10.54 (SVLOP)	16.5	16.5	18	25.95	28.85	35.65	39.65	49.15	52.65	66.15	80.95	88.95
	17.5 (SVLOP)	17.3	17.3	18.8	28.45	31.35	39.15	43.15	58.65	62.15	70.15	76.45	84.45
LO	10.54 (SVLOP)	7.5	7.5	9	13.95	16.85	20.65	24.65	29.65	33.15	49.95	56.95	64.95
	17.5 (SVLOP)	8.3	8.3	9.8	16.45	19.35	24.15	28.15	39.15	42.65	53.95	64.45	72.45
NG	10.54 (SVLOP)	4.9	4.9	6.4	11	12.8	15.5	19.5	24.5	28	41.5	48.5	56.5
	17.5 (SVLOP)	5.7	5.7	7.2	13.5	15.3	19	23	34	37.5	45.5	56	64
Installed dimensions with Effimiser													
Length(L)	Mtr	4.9	5.4	5.4	5.8	6.4	6.9	7.5	8.5	8.9	10.0	10.6	11.2
Width(W)	Mtr	3.5	3.6	3.6	3.7	3.9	4.2	4.2	4.4	4.7	5.2	5.6	5.8
Height(H)	Mtr	3.8	4.0	4.2	4.5	4.8	4.9	5.0	5.2	5.2	6.0	6.2	6.4
Dry Weight for Unit Assembly with Effimiser	Ton(10.54)	5.8	7.1	7.5	9.7	12.5	13.8	15.9	19.2	22.9	26.1	30.8	41.1
	Ton(17.5)	6.6	8.2	8.5	11.4	14.7	16.8	18.7	22.8	26.5	30.8	36.9	48.1

## Shellmax Global Ultra DB with EffiNxt

SM GLOBAL ULTRA DB	TPH	1	1.5	2	3	4	5	6	8	10	12	14	16
Output F&A 100 Deg C	Kg/hr	1000	1500	2000	3000	4000	5000	6000	8000	10000	12000	14000	16000
Design Pressure	Kg/cm <sup>2</sup> (g)	10.54/17.5											
Thermal Efficiency on NCV (As per BS 845 Part 1) with EffiNxt													
FO	%	93.5											
LO	%	94											
NG	%	94											
Fuel Consumption with EffiNxt													
FO	Kg/hr	60	90	120	180	239	299	359	479	598	718	838	958
LO	Kg/hr	56	84	113	169	225	282	338	451	563	676	788	901
NG	Nm <sup>3</sup> /hr	68	101	135	203	270	338	406	541	676	811	946	1081
Connected Load with EffiNxt in Kw													
FO	10.54 (SVLOP)	18	18	19.8	27.75	30.55	39.65	43.15	52.65	60.65	73.15	80.95	88.95
	17.5 (SVLOP)	17.3	17.3	18.8	28.45	31.35	39.15	43.15	58.65	62.15	70.15	76.45	84.45
LO	10.54 (SVLOP)	8.25	8.25	10.05	15	17.8	23.9	27.4	32.4	40.4	56.2	56.2	64.2
	17.5 (SVLOP)	8.3	8.3	9.8	16.45	19.35	24.15	28.15	39.15	42.65	53.95	64.45	72.45
NG	10.54 (SVLOP)	6.4	6.4	8.2	12.8	14.5	19.5	23	28	36	48.5	48.5	56.5
	17.5 (SVLOP)	5.7	5.7	7.2	13.5	15.3	19	23	34	37.5	45.5	56	64
Installed dimensions with EffiNxt													
Length (L)	Mtr	4.9	5.4	5.4	5.8	6.4	6.9	7.5	8.5	8.9	10.0	10.6	11.2
Width (W)	Mtr	5.1	5.3	5.3	5.5	5.7	6.1	6.1	6.4	6.7	7.0	7.5	7.9
Height (H)	Mtr	3.8	4.0	4.2	4.4	4.8	4.9	5.0	5.2	5.2	6.0	6.2	6.4
Dry Weight for Unit Assembly with EffiNxt	Ton(10.54)	5.8	7.1	7.5	9.7	12.5	13.8	15.9	19.2	22.9	26.1	30.8	41.1
	Ton(17.5)	6.6	8.2	8.5	11.4	14.7	16.8	18.7	22.8	26.5	30.8	36.9	48.1

# Technical Specifications

## Shellmax Global Ultra MB with Effimiser

SM GLOBAL ULTRA DB	TPH	1	1.5	2	3	4	5	6	8	10	12	14	16
Output F&A 100 Deg C	Kg/hr	1000	1500	2000	3000	4000	5000	6000	8000	10000	12000	14000	16000
Design Pressure	Kg/cm <sup>2</sup> (g)	10.54/17.5											
Thermal Efficiency on NCV (As per BS 845 Part 1) with Effimiser													
FO	%	93.5											
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NG	%	95											
Fuel Consumption with Effimiser													
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LO	Kg/hr	56	84	113	169	225	282	338	451	563	676	788	901
NG	Nm <sup>3</sup> /hr	67	100	134	201	267	334	401	535	669	802	936	1070
Connected Load with Effimiser in Kw													
FO	10.54 (SVLOP)	15.42	15.42	16.42	24.72	27.82	28.82	39.02	44.52	55.82	66.52	81.32	89.32
	17.5 (SVLOP)	16.22	16.22	17.22	27.22	30.32	32.32	42.52	54.02	65.32	70.52	88.82	96.82
LO	10.54 (SVLOP)	6.05	6.75	8.55	10.85	13.95	14.95	18.45	19.95	27.45	56.95	56.95	65
	17.5 (SVLOP)	6.05	6.75	8.55	10.85	13.95	14.95	18.45	19.95	27.45	60.2	63.7	71.7
NG	10.54 (SVLOP)	4.2	4.9	6.7	9	11	12	15.5	21	24.5	51.45	51.45	59.45
	17.5 (SVLOP)	5.00	5.70	7.50	11.50	13.50	15.50	19.00	30.50	34.00	55.45	58.95	66.95
Installed dimensions with Effimiser													
Length(L)	Mtr	4.2	4.7	4.7	5.3	5.4	6.5	7.2	8.1	8.4	9.3	9.6	10.2
Width(W)	Mtr	3.5	3.6	3.7	3.9	4.2	4.5	4.5	4.9	5.3	5.2	5.9	6.2
Height(H)	Mtr	3.8	4.0	4.2	4.5	4.8	4.9	5.0	5.2	5.2	6.0	6.2	6.4
Dry Weight for Unit Assembly with Effimiser	Ton(10.54)	5.8	7.1	7.5	9.7	12.5	13.8	15.9	19.2	22.9	26.1	30.8	41.1
		6.6	8.2	8.5	11.4	14.7	16.8	18.7	22.8	26.5	30.8	36.9	48.1

Conserving Resources,  
Preserving the Future.



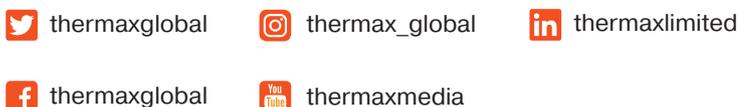
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