Lochinvar®

HIGH EFFICIENCY BOILERS & WATER HEATERS

PRODUCT CATALOGUE

WATER HEATERS

BOILERS

HEAT PUMPS

SOLAR THERMAL/HYBRID WATER HEATERS

Registered office: One New Change, London EC4M 9AF | Registered number: 3453820

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Lochinvar World Headquarters, Lebanon, Tennessee, USA

Lochinvar Ltd

About Lochinvar Ltd

It is safe to say that for generations, Lochinvar products have been providing reliable, energy efficient heating and hot water needs for many businesses, organisations and people.
Innovation and development have been the keys to our success over the years. Not only are our current solutions energy-efficient, many have small footprint and multiple installation and control options.

With products designed and manufactured specifically for the needs of our UK and Ireland customers, we are regarded as a key provider of high efficiency heating and hot water solutions for use in commercial and industrial applications
Based at our Banbury, Oxfordshire facility we have a team of knowledgeable staff available to help customers with specific requirements.
For details of contacts at Lochinvar Ltd please refer to page 76.

Customer Service

Located in Banbury, Oxfordshire, we hold stock of most boiler and water heater products at our factory. Our reputation has been built upon our ability to respond quickly, whether the requirement is for products, spare parts or service.

Expertise

We have a team of knowledgeable and experienced staff, who are keen to assist with a wide range of enquiries. Our Area Sales team is supported by office-based Internal Sales, Customer Service and Technical Support staff.

SELECT direct gas-fired Water Heater sizing programme

It is often said that the sizing of water heating equipment is 'not an exact science' and that's a sentiment we would agree with to a certain extent. We have however combined our 40 years of experience in the UK water heater business along with information extracted from various Industry guides to produce our own water heater sizing programme – SELECT.
Originally launched in 2000, the programme is frequently updated and SELECT 2019 is now available to download or to use online
www.select.lochinvar.ltd.uk

Lochinvar Ltd

Our Products

Our heating and hot water solutions are suitable for a wide range of commercial building types, factories and industrial processes and large residential dwellings.

Water Heaters

The Lochinvar 'Green Knight' range of direct gas-fired water heaters was one of the first products of its type supplied in the UK in 1976. Working on the principles of low storage capacity but fast recovery of hot water, our water heaters have been efficiently satisfying many hot water requirements for many years.

Demand for hot water has increased over the years, and as building designs have evolved, there has been a need to offer a range of different product types. We have kept at the forefront of market requirements and with the variety of water heater types we have developed over the years; we can help our customers by providing a suitable option for most hot water applications.

See pages 8 to 25 for full details of all Water Heater products.

Lochinvar®
HIGH EFFICIENCY BOILERS & WATER HEATERS

Boilers

We started supplying heating boilers in the early 1990's where our Copper-fin range provided very popular, particularly when plant room space was limited. As the boiler market has developed over time so too has the Lochinvar boiler offering.

We can provide boilers with outputs ranging from 40kW up to 576Kw and we have either floor standing or wall mounted models. All of our boilers employ condensing, high efficiency technology and models of 70Kw and lower all carry 'Energy label A'.

Information on our boilers can be found on pages 48 to 59.

Integrated Renewable Solutions

Providing energy via renewable sources continues to be a major challenge for our Industry as we look to combat the impact of climate change.

The concept of integrating renewable technologies like air source heat pumps and solar thermal with high efficiency gas-fired boilers and water heaters, can help achieve reduced carbon emissions and dependency upon fossil fuels. This type of solution can keep capital equipment cost at reasonable levels, certainly when compared to 'renewable-only' alternatives.

Details of our renewable offering is available on pages 60 to 73.

Gas-fired

Condensing Water Heaters

Whilst heating boilers saw the widespread introduction of condensing technology from the mid 1990's onwards, progress was somewhat slower with direct gas-fired water heaters. Our popular EcoCharger range is based upon a concept, which was initially brought to market in the UK in the late 1990's, and such products are now specified and installed on a growing number of commercial and industrial new build and major refurbishment projects.

Our range of condensing water heater products is one of the most comprehensive available, with product types to suit a wide range of applications. This enables us to consider all individual project requirements, and to base a proposal on the most suitable water heater type or combination.

This section of the catalogues covers the following gas-fired condensing Water Heater products:

Storage-type Condensing Water Heaters

- EcoCharger page 10
- EcoSable page 14
- EcoShield page 16
- EcoSword page 18

Circulating-type Condensing Water Heaters

- EcoForce page 20
- EcoKnight page 22
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Storage vessels for use with circulating-type water heaters

- LST GE direct storage vessels page 28
- LST 166 direct storage vessel page 30
- SST stainless steel direct storage vessels page 32

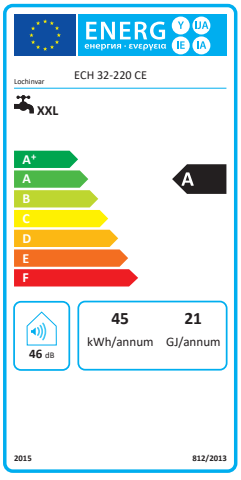
EcoCharger
Storage-type Gas-fired Water Heaters

Features

- Hot water recovery rates from 540 to 2100 l/h at a 50°C temperature rise
- Fully modulating pre-mix burner
- Efficiencies of up to 98%
- Low NO_X emissions ≤37mg/kWh
- Integral controls
- Factory-fitted Correx non-sacrificial corrosion protection system
- Flue runs of up to 100m

Ancillary Items - optional

- Heatpak space heating module (see pages 12 and 13)
- Remote interface display (BMS interface)
- Unvented kits
- Concentric, twin pipe and conventional flue ancillaries
- Condensate neutralisation kits
- Metal base – for models ECH32-220GCE, ECH33-370GCE, ECH52-370GCE and ECH63-370GCE (this base is supplied as standard with all other EcoCharger models)



Qualified for Energy Technology List™

WRAS APPROVED PRODUCT

Technical Specification

Water Heater Model		ECH32-220GCE	ECH33-370GCE	ECH52-370GCE	ECH63-370GCE	ECH87-480GCE	ECH106-480GCE	ECH129-480GCE
Nominal Input (Net)	kW	29.4	30.5	47.8	57.9	79.3	96.6	118.0
Nominal Input (Gross)	kW	32.7	33.9	53.1	64.4	88.1	107.3	131
Gas Flow Rate (Natural Gas)	m^3/hr	3.1	3.2	5.0	6.0	8.3	10.1	12.3
Nominal Output	kW	31.5	33.3	51.2	61.5	85.7	102.0	124.0
Efficiency and NO_x Data								
Seasonal Efficiency (Building Regulations Gross CV)	%	96	98	96	95	97	95	95
NO_x emission @0% O_2	ppm	14	18	20	21	19	20	21
NO_x emission @0% O_2	mg/kWh	24	32	36	37	34	36	37
Efficiency Data - ErP and Energy Label								
Ecodesign Energy Label rating		A	A	A	A	n/a	n/a	n/a
Water Heater efficiency	%	91	91	91	90	93	93	92
General Data								
Recovery Rate @ 44°C	l/hr	610	640	990	1200	1700	2000	2400
Recovery Rate @ 50°C	l/hr	540	570	870	1100	1500	1800	2100
Recovery Rate @ 56°C	l/hr	480	510	780	930	1300	1600	1900
Dimensions (Height)	mm	1390	1925	1925	1925	2060	2060	2060
Dimensions (diameter)	mm	705	705	705	705	850	850	850
Storage Capacity	litres	220	374	374	374	488	488	488
Weight (empty)	kg	177	214	214	214	405	405	405
Weight (full)	kg	397	588	588	588	893	893	893
Insulation Thickness	mm	50	50	50	50	44	44	44
Insulation Material		Polyurethane						
Hot Outlet Connection (inches)	BSP	R 1½	R 1½	R 1½	R 1½	R 1½	R 1½	R 1½
Cold Feed Connection (inches)	BSP	R 1½	R 1½	R 1½	R 1½	R 1½	R 1½	R 1½
Gas Connection (inches)	BSP	R ¾	R ¾	R ¾	R ¾	R ¾	R ¾	R ¾
Electrical Requirements		230V/1ph/50Hz						
Power Consumption	W	45	45	75	115	95	145	240
Sound Power Level	LWA(db)	46	47	55	59	54	59	62
Maximum Flue Gas Temperature	°C	44	54	63	68	52	55	60
Max Outlet Temperature	°C	80	80	80	80	80	80	80
Maximum Working Pressure	bar	8.0	8.0	8.0	8.0	8.0	8.0	8.0

Energy Label, Product Fiche and ErP Data Table are available at www.lochinvar.ltd.uk

BMS Interface module for EcoCharger

In addition to the standard connection points available such as remote on off, and fault signals EcoCharger water heaters can also be supplied with an optional BMS Interface giving the user the ability to closely monitor the hot water installation using Modbus protocol.

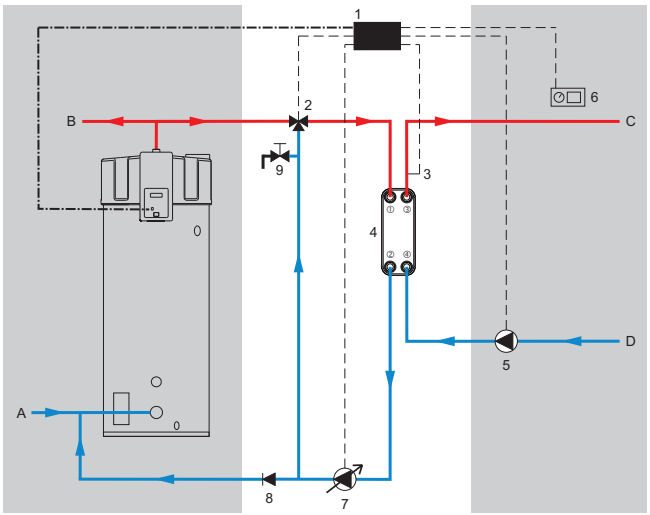
An optional BMS interface allows users to monitor water heater installation using ModBus protocol, and the following specific details can be recovered:

- Water Heater status
- Upper and lower tank temperatures
- Set point temperature
- Flue temperatures
- Error codes such as flame failure, ignition failure etc

For further information please refer to BMS Interface installation, commissioning and user instructions.

EcoCharger Heatpak

Modules providing up to 40kW of space heating capacity



Typcial EcoCharger Heatpak schematic

Legend

1 control
2 3-way mixing valve
3 temperature sensor S5
4 plate heat exchanger
5 heating pump
6 room thermostat
7 DHW-pump
8 stop valve
9 (manual) air vent
A cold water supply
B hot water supply
C heating supply pipe
D heating return pipe

Features

- Single product provides heating and hot water
- Reduced space requirement
- Also available with EcoCharger Hybrid Water Heaters (see pages 66 to 69)
- Can be installed with multiple water heaters

Ancillary Items - optional

- BMS Interface
- Unvented kits
- Horizontal or vertical room sealed concentric flue assemblies
- Room sealed parallel (twin pipe) flue assemblies
- Steel Base *

  * for models ECH32-220GCE, ECH33-370GCE, ECH52-370GCE and ECH63-370GCE

Qualified for Energy Technology List ™

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Technical Specification

Part No. EcoCharger Water Heater	kW CH capacity	ΔT CH system
HP 20 06	20	06
HP 20 10	20	10
HP 20 20	20	20
HP 30 06	30	06
HP 30 10	30	10
HP 30 20	30	20
HP 40 06	40	06
HP 40 10	40	10
HP 40 20	40	20

Please use the table below for selecting the CH pump

Part No. EcoCharger Water Heater	ΔT CH system	Specifications plate heat exchanger heating side	
		Flow (m^3/h)	ΔP (kPa)
HP 20 06	36-30	2,9	8
HP 20 10	40-30	1.7	9
HP 20 20	70-50	0,9	2,5
HP 30 06	36-30	4,3	10
HP 30 10	40-30	2,6	6,5
HP 30 20	70-50	1,3	5
HP 40 06	36-30	5,8	17
HP 40 10	40-30	3,5	11
HP 40 20	70-50	1,8	9

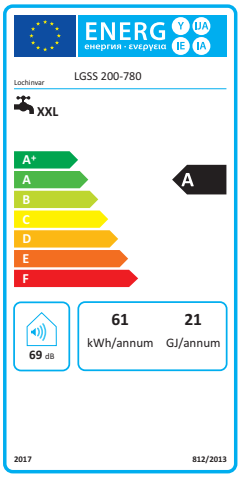
EcoSable Stainless Steel
Storage-type Gas-fired Water Heaters

Features

- Recovery rates from 620 to 800 litres/hour
- Stainless steel storage vessel
- Efficiencies of up to 93%
- Up to 8 bar working pressure
- Small footprint
- 5-year storage vessel warranty

Ancillary Items - optional

- Unvented system kits
- Condensate neutralisation kits
- Range of flue options



Technical Specification

Water Heater Model		LGSS200-600GCE	LGSS200-780GCE
Nominal Input (nett)	kW	35.0	45.0
Nominal Input (gross)	kW	38.9	50.0
Gas Flow Rate (natural gas)	m^3/hr	3.7	4.8
Nominal Output	kW	35.9	46.2
Efficiency Data - Building Regulations			
Seasonal Efficiency (Gross CV)	%	92.2	92.4
Maintenance consumption value	MJ/M	840	840
Efficiency Data - ErP and Energy Label			
Ecodesign Energy Label rating		A	A
Water Heater efficiency	%	93	91
NO_X Emmissions			
NO_X @0%O_2 According to EU regulation 812/2013	mg/kWh	53	53
General Data			
Recovery Rate @ 44°C	l/hr	710	910
Recovery Rate @ 50°C	l/hr	620	800
Recovery Rate @ 56°C	l/hr	570	730
Dimensions (Height)	mm	1655	1655
Dimensions (Width)	mm	660	660
Dimensions (Diameter)	mm	560	560
Storage Capacity	litres	186	186
Weight (Empty)	kg	79	79
Weight (Full)	kg	261	261
Hot Outlet Connection (Inches)	BSP	1"	1"
Cold Feed Connection (Inches)	BSP	1"	1"
Gas Connection (Inches)	BSP	¾"	¾"
Flue connection (Concentric)	mm	80/125	80/125
Flue connection (Twin-pipe)	mm	80	80
Electrical Requirements		230V /1Ph/ 50hz	
Power Consumption (Peak)	W	160	230
Sound Power Level	LWA(db)	63	69
Maximum Flue Gas Temperature	°C	65	75
Max Outlet Temperature	°C	85	85
Maximum Working Pressure	bar	8	8

Energy Label, Product Fiche and ErP Data Table are available at www.lochinvar.ltd.uk

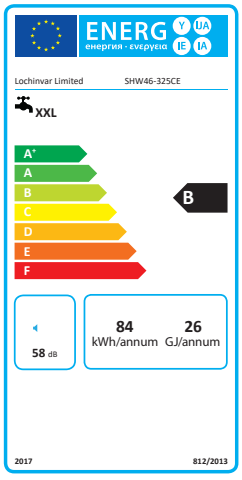
EcoShield
Storage-type Gas-fired Water Heaters

Features

- Hot water recovery rates from 612 to 2436 l/hr at 50°C temperature rise
- Fully modulating pre-mix burner
- Stainless steel heat exchanger
- Efficiencies of up to 96.45%
- Low NO_x emissions ≤40mg/kWh
- 5-year storage vessel and heat exchanger warranty
- 10 bar working pressure

Ancillary Items - optional

- Unvented System kits
- Concentric and Twin Pipe flue assemblies
- Conventional flue adaptor
- Correx non-sacrificial Anode system (factory fitted)
- Condensate neutralisation kit
- Con-X-us App-based control



Con-X-us™

Con-X-us is an app-based ancillary which enables users to monitor EcoShield Water Heater operation from literally anywhere in the world! Settings can also be remotely adjusted and alerts can be configured for service reminders and system lockout alarms.

Technical Specification

Water Heater Model		SHW35-245CE	SHW46-325CE	SHW61-325CE	SHW86-410CE	SHW116-410CE	SHW146-410CE
Nominal Input (nett)	kW	33.3	39.6	55.4	75.2	105.3	132.0
Nominal Input (gross)	kW	36.6	44.0	61.5	83.5	116.9	146.5
Gas Flow Rate (natural gas)	m^3/hr	3.50	4.20	5.70	8.00	11.10	14.00
Nominal Output	kW	35.2	41.2	58.7	79.7	110.6	141.2
Efficiency Data - Building Regulations							
Seasonal Efficiency (Gross CV)	%	96.2	93.6	95.8	96.0	94.6	96.4
Maintenance consumption value	MJ/M	302	302	302	302	302	302
Efficiency Data - ErP and Energy Label							
Ecodesign Energy Label rating		B	B	B	n/a	n/a	n/a
Water Heater efficiency	%	76	73	81	79	78	79
NO_X Emmissions							
NO_X @0%O_2 According to EU regulation 812/2013	mg/kWh	26	33	27	33	40	38
General Data							
Recovery Rate @ 44°C	l/hr	695	806	1153	1567	2164	2768
Recovery Rate @ 50°C	l/hr	612	709	1014	1379	1904	2436
Recovery Rate @ 56°C	l/hr	546	633	905	1231	1700	2175
Dimensions (Height)	mm	1530	1920	1920	1920	1920	1920
Dimensions (Diameter)	mm	715	715	715	865	865	930
Storage Capacity	litres	248	331	332	420	423	424
Weight (Empty)	kg	136	281	290	379	388	406
Weight (Full)	kg	384	614	625	825	838	860
Hot Outlet Connection (Inches)	BSP	1½"	1½"	1½"	2"	2"	2"
Cold Feed Connection (Inches)	BSP	1½"	1½"	1½"	2"	2"	2"
Gas Connection (Inches)	BSP	½"	½"	½"	¾"	1"	1"
Flue connection (Concentric)	mm	80/125	80/125	80/125	100/150	100/150	100/150
Flue connection (Twin-pipe)	mm	80	80	80	100	100	100
Electrical Requirements		230V /1Ph/ 50hz					
Power Consumption (Peak)	W	361	431	459	646	932	961
Sound Power Level	LWA(db)	56	58	60	62	64	66
Maximum Flue Gas Temperature	°C	120	120	120	120	120	120
Max Outlet Temperature	°C	80	80	80	80	80	80
Maximum Working Pressure	bar	10	10	10	10	10	10

Energy Label, Product Fiche and ErP Data Table are available at www.lochinvar.ltd.uk

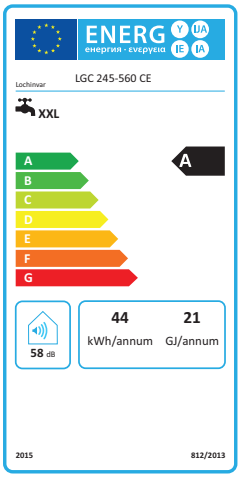
EcoSword
Storage-type Gas-fired Water Heaters

Features

- Hot water recovery rates from 210 to 540 l/hr at 50°C temperature rise
- Fully modulating pre-mix burner
- Efficiencies of up to 98.2%
- Low NO_x emissions; <37mg/kWh
- Operating temperature up to 85°C
- Fully automatic ignition

Ancillary Items - optional

- Unvented system kits
- De-stratification pump
- Condensate neutralisation kit
- Range of flue options



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Technical Specification

Water Heater Model		LGC 160-210 G P CE	LGC 160-350 G P CE	LGC 200-210 G P CE	LGC 200-350 G P CE	LGC 245-420 G P CE	LGC 245-560 G P CE	LGC 285-420 G P CE	LGC 285-560 G P CE	LGC 380-560 G P CE
Nominal Input (Net)	kW	11.0	18.2	11.0	18.2	22.2	29.3	22.2	29.3	29.3
Nominal Input (Gross)	kW	12.1	20.0	12.1	20.0	24.4	32.2	24.4	32.2	32.2
Gas Flow Rate (Natural Gas)	m^3/hr	1.15	1.90	1.15	1.90	2.33	3.07	2.33	3.07	3.07
Nominal Output	kW	11.7	19.1	11.9	19.1	23.5	30.7	23.8	31.0	31.3
Efficiency and NO_X Data										
Seasonal Efficiency (Building Regulations Gross CV)	%	96.4	95.5	98.2	95.5	96.4	95.5	97.3	96.4	97.3
Maintenance consumption value	MJ/M	236.5	236.5	252.3	252.3	289.1	289.1	325.9	325.9	318.0
Efficiency Data - ErP and Energy Label										
Ecodesign Energy Label rating		A	A	A	A	A	A	A	A	A
Water Heater efficiency	%	92	92	94	91	92	92	91	90	90
General Data										
NO_X emission @0% O_2	ppm	13	15	13	15	16	18	16	18	18
NO_X emission @0% O_2	mg/kWh	22	30	22	30	33	37	33	37	37
Recovery Rate @ 44°C	l/hr	239	375	239	375	466	602	466	614	614
Recovery Rate @ 50°C	l/hr	210	330	210	330	410	530	410	540	540
Recovery Rate @ 56°C	l/hr	188	295	188	295	366	473	366	482	482
Dimensions (height)	mm	1269	1269	1543	1543	1543	1543	1743	1743	1743
Dimensions (width)	mm	560	560	560	560	610	610	610	610	675
Dimensions (depth)	mm	760	760	760	760	810	810	810	810	875
Storage Capacity	litres	163	163	204	204	250	250	291	291	388
Weight (empty)	kg	95	95	106	106	120	120	136	136	155
Weight (full)	kg	258	258	310	310	370	370	427	427	543
Insulation Thickness	mm	50	50	50	50	50	50	50	50	50
Insulation Material		Polyurethane								
Hot Outlet Connection	BSPin	¾"	¾"	¾"	¾"	1"	1"	1"	1"	1"
Cold Feed Connection	BSPin	¾"	¾"	¾"	¾"	1"	1"	1"	1"	1"
Gas Connection	mm	15	15	15	15	15	15	15	15	15
Electrical Requirements		230V/1ph/50Hz								
Power Consumption (Peak)	W	85	85	85	85	105	105	105	105	105
Sound Power Level	LWA(db)	41	52	41	52	53	58	53	58	58
Maximum Flue Gas Temperature	°C	42	61	42	61	57	65	57	65	65
Max Outlet Temperature	°C	85	85	85	85	85	85	85	85	85
Maximum Working Pressure	bar	8	8	8	8	8	8	8	8	8

Energy Label, Product Fiche and ErP Data Table are available at www.lochinvar.ltd.uk

EcoForce Wall Hung
Circulating-type Gas-fired Water Heaters

Features

- Recovery rates from 1312 to 2961 litres/hour
- Efficiencies up to 95.5%
- Fully modulating pre-mix burner
- Stainless Steel Heat Exchanger
- High working pressure – up to 8 bar
- Low NO_x emissions ≤46mg/kWh
- Wall-hung space-saving design

Ancillary Items - required

- Matched primary circulation pump
- Direct storage vessels

Ancillary Items - optional

- Unvented/boosted water system kits
- Condensate neutralisation kit
- Range of flue options
- RCW remote controller
- Storage vessel sensor

WRAS APPROVED PRODUCT

Technical Specification

Water Heater Model		EF80	EF100	EF120	EF150	EF180
Nominal Input (Net) min-max	kW	14.6 - 74.3	17.2 - 92.2	26.0 - 111	34.0 - 138	45.0 - 166
Nominal Input (Gross) min-max	kW	16.2 - 82.5	19.1 - 102	28.9 - 123	37.8 - 153	50.0 - 184
Gas Flow Rate (Natural Gas)	m^3/hr	7.9	9.8	11.8	14.6	17.6
Nominal Output min-max	kW	14.0 - 76.3	16.5 - 94.7	24.7 - 114.1	32.6 - 141.7	43.3 - 172.2
Efficiency Data - Building Regulations						
Heat Generator Seasonal Efficiency (Gross CV)	%	95.0	95.5	95.4	95.3	95.3
Efficiency Data - ErP and Energy Label						
Ecodesign Energy Label rating		n/a	n/a	n/a	n/a	n/a
Seasonal Space Heating Energy Efficiency	%	86	86,3	85,9	89	88,6
NO_X Emmissions						
NO_X emission (According to EN15502)@0% O_2	mg/kWh	46	40	45	41	44
NO_X class according to EN15502		6				
General Data						
Recovery Rate @ 44°C	l/hr	1491	1851	2230	2770	3365
Recovery Rate @ 50°C	l/hr	1312	1629	1963	2438	2961
Recovery Rate @ 56°C	l/hr	1172	1455	1752	2176	2644
Dimensions (Height)	mm	842	842	842	898	898
Dimensions (Width)	mm	476	476	476	476	476
Dimensions (Depth)	mm	486	486	486	677	677
Water Content	litres	5	6,5	8,3	10,4	12,9
Weight (Empty)	kg	68	73	78	87	96
Weight (Full)	kg	73	79,5	86,3	97,4	108,9
Flow Connection (Inches)	BSP	1½	2	2	2	2
Return Connection (Inches)	BSP	1½	2	2	2	2
Gas Connection (Inches)	BSP	R ¾	R ¾	R ¾	R 1	R 1
Flue connection (Concentric)	mm	80/125	100/150	100/150	100/150	100/150
Flue connection (Twin-pipe)	mm	80-80	100-100	100-100	130-130	130-130
Electrical Requirements		230V /1Ph/ 50hz				
Power Consumption	W	136	142	151	214	229
Sound Power Level	LWA(db)	67	65	62	66	69
Nominal Flue Gas Temperature	°C	85	85	85	85	85
Max Outlet Temperature	°C	75	75	75	75	75
Working Pressure Minimum	bar	1	1	1	1	1
Working Pressure Maximum	bar	8	8	8	8	8

Energy Label, Product Fiche and ErP Data Table are available at www.lochinvar.ltd.uk

EcoKnight
Circulating-type Gas-fired Water Heaters

Features

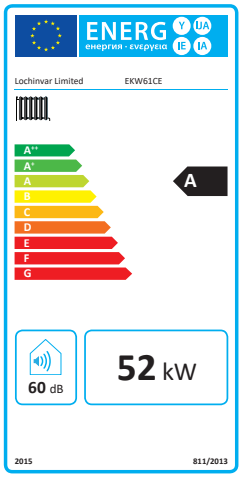
- Recovery rates from 709 to 3819 litres/hour
- Efficiencies up to 96.7%
- Fully modulating pre-mix burner
- Stainless Steel Heat Exchanger
- High Working Pressure- up to 11 bar
- Low NO_x emissions ≤40mg/kWh
- Integral Controls

Ancillary Items - required

- Matched primary circulation pump
- Direct storage vessels

Ancillary Items - optional

- Unvented system kits
- Condensate neutralisation kit
- Range of flue options
- BMS Interface Module



Technical Specification

Water Heater model		EKW 46CE	EKW 61CE	EKW 86CE	EKW 116CE	EKW 146CE	EKW 176CE	EKW 206CE	EKW 236CE
Nominal Input (Nett)	kW	39.6	55.4	75.2	105.3	132.0	158.4	184.9	211.3
Nominal Input (Gross)	kW	44.0	61.5	83.5	116.9	146.5	175.8	205.2	244.2
Gas Flow Rate (Natural Gas)	m^3/hr	4.2	5.9	8.0	11.1	14.0	16.8	19.6	22.3
Nominal Output	kW	41.2	58.7	79.7	110.6	141.2	162.1	187.4	227.2
Efficiency Data - Building Regulations									
Heat Generator Seasonal Efficiency (Gross CV)	%	93.6	95.4	95.4	94.6	96.4	92.2	91.3	93.0
Efficiency Data - ErP and Energy Label									
Ecodesign Energy Label rating		A	A	n/a	n/a	n/a	n/a	n/a	n/a
Seasonal Space Heating Energy Efficiency	%	95	94	94	93	94	95	95	95
NO_x Emmissions									
NO_x Emissions (According to EN15502)@0% O_2	mg/kWh	33.0	27.3	33.1	40.0	38.0	37.0	34.0	32.5
NO_x class according to EN15502		6							
General Data									
Recovery Rate @ 44°C	l/hr	806	1153	1567	2164	2768	3302	3865	4338
Recovery Rate @ 50°C	l/hr	709	1014	1379	1904	2436	2905	3401	3819
Recovery Rate @ 56°C	l/hr	633	906	1231	1700	2175	2595	3037	3409
Dimensions (Height)	mm	840	840	1080	1080	1080	1080	1080	1080
Dimensions (Width)	mm	395	395	395	395	395	395	395	395
Dimensions (Depth)	mm	459	567	503	688	798	925	1024	1153
Water Content	litres	4.9	6.4	9.1	12.9	15.9	15.9	18.9	21.6
Weight (Empty)	kg	75	79	102	129	138	154	168	184
Weight (Full)	kg	80	85	111	142	154	170	187	206
Flow Connection (Inches)	BSP	1¼"	1¼"	2"	2"	2"	2"	2"	2"
Return Connection (Inches)	BSP	1¼"	1¼"	2"	2"	2"	2"	2"	2"
Gas Connection (Inches)	BSP	½"	½"	¾"	1"	1"	1"	1"	1"
Flue Connection (Concentric)	mm	80/125	80/125	100/150	100/150	n/a	n/a	n/a	n/a
Flue Connection (Twin-pipe)	mm	80/80	80/80	100/100	100/100	150/150	150/150	150/150	150/150
Electrical Requirements		230V/1ph/50Hz							
Power Consumption	W	120	144	180	180	204	322	322	322
Sound Power Level	LWA(dB)	58	60	62	64	66	69	69	69
Nominal Flue Gas Temperature	°C	120	120	120	120	120	120	120	120
Max Outlet Temperature	°C	88	88	88	88	88	88	88	88
Working Pressure Minimum	bar	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Working Pressure Maximum	bar	11	11	11	11	11	11	11	11

Energy Label. Product Fiche and ErP Data Table are available at www.lochinvar.ltd.uk

TTW
Circulating-type Gas-fired Water Heaters

Features

- Recovery rates from 7188 to 9912 litres/hour
- Efficiencies up to 95.9%
- Fully modulating pre-mix burner
- Stainless Steel Heat Exchanger
- Twin burner
- Working pressure up to 8.0 bar
- Low NO_x emissions (class 6) <44mg/kWh

Ancillary Items - required

- Matched primary circulation pump
- Direct storage vessels

Ancillary Items - optional

- Unvented/boosted water system kits
- Condensate neutralisation kit
- Range of flue options
- RCW remote controller
- Storage vessel sensor

Technical Specification

Water Heater model		TTW410	TTW580
Nominal Input (Nett) min-max	kW	50 - 400	68 - 550
Nominal Input (Gross) min-max	kW	55.4 - 444	75.5 - 611
Gas Flow Rate (G20)	m^3/hr	5.3 - 42.3	7.2 - 58.2
Nominal Output min-max	kW	418	576
Efficiency Data - Part L2			
Seasonal Efficiency (Building Regulations - Gross CV)	%	95.4	95.9
Efficiency Data - ErP and Energy Label			
Ecodesign Energy Label rating		n/a	n/a
Seasonal space heating energy efficiency	%	92.5	92.9
NO_X Emmissions			
NO_X emission @0% O_2	mg/kWh	44	41
NO_X class according to EN15502		6	6
General Data			
Recovery Rate @ 44°C	l/hr	8168	11263
Recovery Rate @ 50°C	l/hr	7188	9912
Recovery Rate @ 56°C	l/hr	6418	8850
Dimensions (height)	mm	1638	1638
Dimensions (width)	mm	736	736
Dimensions (depth)	mm	1095	1095
Water Content	litres	30	43
Weight (empty)	kg	400	450
Weight (full)	kg	430	493
Flow Connection (inches)	BSP	2½	2½
Return Connection (inches)	BSP	2½	2½
Gas Connection (inches)	BSP	2	2
Flue connection (Concentric)	mm	180	180
Flue connection (Twin-pipe)	mm	180	180
Electrical Requirements		230V/1Ph/50Hz	
Power Consumption	W	752	752
Sound Power Level	LWA(db)	74	78
Maximum Flue Gas Temperature	°C	120	120
Max Outlet Temperature	°C	70	70
Working Pressure Maximum	bar	8	8

Energy Label, Product Fiche and ErP Data Table are available at www.lochinvar.ltd.uk

Lochinvar
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Storage Vessels

Direct Storage Vessels

These products are the perfect complement to our gas-fired circulating type water products, that is, our EcoForce, EcoKnight and TTW product ranges. Circulating-type water heaters are designed to work in conjunction with separate storage vessels; a concept that can provide a range of flexible installation options, particularly for commercial and industrial applications, which are subject to high hot water demand in peak periods.

These products can also be used to provide storage for other water heater method, such as Packaged Plate Heat Exchangers We can provide Storage vessels constructed from enamelled steel or stainless steel, and with storage capacities ranging from 300 to 2820 litres.

Direct Storage Vessels

- LST GE range page 28
- LST 166 page 30
- SST range page 32

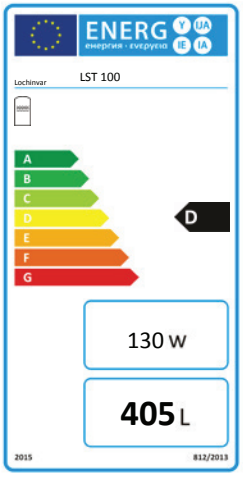
LST GE
Direct Storage Vessels

Features

- Storage capacities from 312 to 2820 litres
- Up to 10 bar working pressure
- Cleanout opening for inspection and maintenance
- A-rated fire resistant insulation and jacket
- For use with circulating-type water heaters and packaged plate heat exchangers

Ancillary Items - optional

- Correx non sacrificial protection system (models LST66 to 220GE only)
- Destratification Pump sets
- Unvented System kits
- Thermometer kits



Technical Specification

Direct Storage Vessel Model		LST66GE	LST100GE	LST110GE	LST130GE	LST165GE	LST220GE	LST330GE	LST440GE	LST550GE	LST660GE
Storage Capacity	litres	312	405	499	678	763	1055	1550	1880	2500	2820
Efficiency Data - Building Regulations											
Heat Loss	Kw/24 hr	1.3	1.6	1.9	1.9	2.0	2.2	4.7	7.3	7.8	8.6
Efficiency Data - ErP											
Ecodesign Energy Label rating		C	C	C	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Standing Loss	W	55	67	78	77	85	91	154	171	232	243
General Data											
Dimensions (Height)	mm	1370	1710	2045	1840	2035	2005	1930	2118	2000	2128
Dimensions (Width)	mm	740	740	760	910	930	1100	1200	1200	1500	1500
Hot Outlet Connection (Inches)	BSP	R 1½	R 2	R 2	R 1½	R 1½	R 1½	R 2	R 2	R 2	R 2
Drain Connection (Inches)	BSP	R 1½	R 2	R 2	R 1½	R 1½	R 1½	R 2	R 2	R 2	R 2
Flow/Return Connection (Inches)	BSP	Rp 2	Rp 1½	Rp 1½	Rp 1½	Rp 1½	Rp 1½	Rp 2	Rp 2	Rp 2	Rp 2
Weight (Empty)	kg	81	99	131	179	201	262	325	350	485	520
Weight (Full)	kg	393	504	630	857	964	1317	1875	2230	2985	3340
Minimum Working Pressure	bar	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Maximum Working Pressure	bar	10	10	10	10	10	10	7	7	7	7

Note. LST66GE to LST110GE models are supplied with a pre-fitted insulation jacket. The insulation jacket for the LST130GE to LST660GE models are supplied separately for fitting on site.

LST 166
Direct Storage Vessel

Features

- Storage capacity – 685 litres
- Up to 10 bar working pressure
- Insulated and jacketed
- 5-year warranty against leakage
- For use with circulating-type water heaters and packaged plate heat exchangers

Ancillary Options

- Correx non-sacrificial protection system
- Unvented system kits

Technical Specification

Model		LST166
Storage Capacity	litres	685
Efficiency Data - Building Regulations		
Heat Loss	KWh/24 hr	3.0
Efficiency Data - ErP and Energy Label		
Ecodesign Energy Label rating		n/a
Standing Loss	W	124
General Data		
Dimensions (Height)	mm	1955
Dimensions (Width)	mm	863
Hot Outlet Connection (Inches)	NPT	Rp 2
Drain Connection (Inches)	NPT	R ¾
Flow/Return Connection (Inches)	NPT	Rp 2½
Weight (Empty)	kg	295
Weight (Full)	kg	980
Minimum Working Pressure	bar	0.5
Maximum Working Pressure	bar	10

Energy Label, Product Fiche and ErP Data Table are available at www.lochinvar.ltd.uk

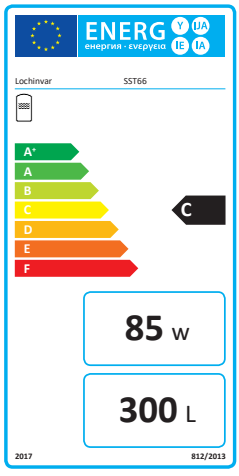
SST
Stainless Steel Direct Storage Vessels

Features

- Storage capacities from 300 to 1000 litres
- Stainless steel construction
- Low standing losses
- 5-year storage vessel warranty
- For use with circulating-type water heaters and package plate heat exchangers

Ancillary Items - optional

- Unvented system kits
- Additional connections (factory-fitted)



Technical Specification

Model		SST66	SST110	SST165	SST220
Storage Capacity	litres	300	500	700	1000
Efficiency Data - Building Regulations					
Heat Loss	Kw/24 hr	2.0	2.8	3.0	3.4
Efficiency Data - ErP					
Ecodesign Energy Label rating		C	C	n/a	n/a
Standing Loss	W	85	116	123	143
General Data					
Dimensions (Height)	mm	1170	1750	2320	1907
Dimensions (Width)	mm	750	750	750	1080
Hot Outlet Connection (Inches)	BSP	2	2	2½	2½
Flow/Return Connection (Inches)	BSP	1½	1½	1½	1½
Weight (Empty)	kg	55	95	140	175
Weight (Full)	kg	355	595	840	1175
Maximum Working Temperature	°C	100	100	100	100
Minimum Working Pressure	bar	0.5	0.5	0.5	0.5

Energy Label, Product Fiche and ErP Data Table are available at www.lochinvar.ltd.uk

Lochinvar
M.C.W.
CHL

Gas-fired

Atmospheric Water Heaters

Lochinvar Knight and Charger atmospheric water heaters were among the first of their kind supplied in the UK and Ireland, and since the initial launch in 1976, these products have been providing economical and reliable supplies of hot water for many building types.

Although condensing water heaters are usually specified and installed on new build and refurbishment projects, there is still a requirement for replacement atmospheric gas water heaters, where replacing with condensing equivalents can be impractical.

We would usually encourage customers towards high efficiency condensing water heater options, but for applications where like for like replacement is the requirement, our current range of Low NO_X atmospheric water heaters models are an alternative.

Legislation

In September 2018, new ErP legislation for gas-fired Water Heaters was implemented; with the main change being new maximum levels of NO_X emissions of 56mg/kWh. Most of the atmospheric Water Heaters on the market pre September 2018 were subsequently withdrawn, but our Knight and Charger ranges were modified and upgraded to include Low NO_X burners and can provide an ideal solution for Water Heater replacements

Water Heater Replacements

Most new-build or major refurbishment projects would specify gas-fired condensing water heaters, but replacing an old atmospheric gas water heater installation will usually mean that a new flue installation is required. This can present a practical and costly challenge particularly on multiple water heater installations, or installations that include lengthy flue runs.

Charger Low NO_X water heaters can usually be installed on the existing flue installation and can provide a cost-effective and efficient replacement option. All models are held in stock and can normally be delivered to most UK locations within 2 working days.

Details on such products can be found on the following pages:

Storage-type Atmospheric Low NO_X Water Heaters

- Charger Low NO_X page 36
- Knight Low NO_X page 38

Charger Low NOx
Storage-type Gas-fired Water Heaters

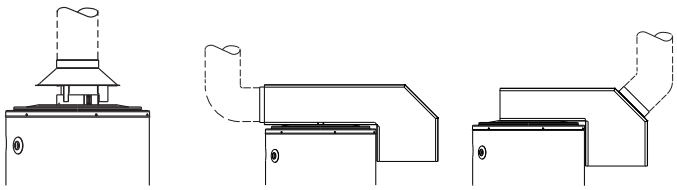
Features

- Recovery rates from 850 to 1600 litres/hour
- ErP compliant
- Up to 8 bar working pressure
- Low NO_x emissions <45mg/kWh
- Small footprint
- Suitable for Natural Gas only

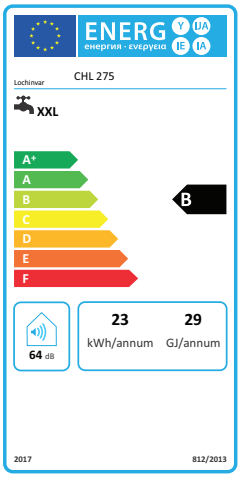
Ancillary Items - optional

- Unvented system kits
- De-stratification pump sets

Low-level Draught Diverter Options



Ideal Replacement Solution *with hot water recovery rates of up to 1600 litres per hour (almost 90kW output), Charger Low NO_X models are a practical, cost-effective replacement for pre-2019 gas-fired storage water heaters, including competitive brands.*
Low-level draught diverter options provide further installation flexibility, particular in installations where headroom is restricted.



Technical Specification

Water Heater Model		CHL 275 GCE	CHL 375 GCE	CHL 550 GCE
Nominal Input (Net)	kW	54	73	99
Nominal Input (Gross)	kW	60.0	81.1	109.9
Gas Flow Rate (Natural Gas)	m^3/hr	5.7	1.1	10.5
Nominal Output	kW	49.1	66.4	89.9
Efficiency Data - Building Regulations				
Heat Generator Seasonal Efficiency (Gross CV)	%	82	81	82
Maintenance Consumption value	MJ/M	728	809	770
Maintenance Consumption value	kWh/24 Hr	6.7	7.5	7.1
Efficiency Data - ErP and Energy Label				
Ecodesign Energy Label rating		B	B	n/a
Water Heater efficiency	%	66	66	71
NO_X Emmissions				
NO_X emission According to EN89 @0% O_2	mg/kWh	45	35	40
General Data				
Recovery Rate @ 44°C	l/hr	970	1300	1800
Recovery Rate @ 50°C	l/hr	850	1200	1600
Recovery Rate @ 56°C	l/hr	756	1080	1473
Dimensions (Height)	mm	1760	1955	1965
Dimensions (Width)	mm	705	705	705
Dimensions (Depth)	mm	960	960	960
Storage Capacity	litres	294	351	328
Weight (Empty)	kg	252	276	310
Weight (Full)	kg	540	620	635
Hot Outlet Connection (Inches)	BSP	R 1½	R 1½	R 1½
Cold Feed Connection (Inches)	BSP	R 1½	R 1½	R 1½
Gas Connection (Inches)	BSP	Rp ¾	Rp ¾	Rp ¾
Flue Connection	mm	150	180	200
Electrical Requirements		230V /1Ph/ 50hz		
Power Consumption (Peak)	W	281	312	297
Sound Power Level	LWA(dB)	64	68	70
Nominal Flue Gas Temperature	°C	161	172	158
Max Outlet Temperature	°C	80	80	80
Maximum Working Pressure	bar	8	8	8

Energy Label, Product Fiche and ErP Data Table are available at www.lochinvar.ltd.uk

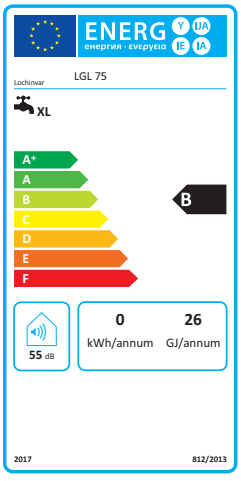
Knight Low NOx
Storage-type Gas-fired Water Heaters

Features

- Recovery rates from 140 to 290 litres/hour
- ErP compliant
- Up to 8 bar working pressure
- Low NO_x emissions <48mg/kWh
- Small footprint
- Natural Gas or LPG

Ancillary Items - optional

- Unvented system kits
- De-stratification pump sets



Technical Specification

Water Heater Model		LGL30	LGL40	LGL75	LGL85
Nominal Input (Net) min-max	kW	8.6	10.1	19.9	18.9
Nominal Input (Gross) min-max	kW	9.6	11.2	22.1	21.0
Gas Flow Rate (G20)	m^3/hr	0.9	1.1	2.1	2.0
Nominal Output min-max	kW	7.6	8.6	16.8	16.6
Efficiency Data - Building Regulations					
Seasonal Efficiency (Gross CV)	%	79	77	76	79
Efficiency Data - ErP and Energy Label					
Ecodesign Energy Label rating		B	B	B	B
Water Heater efficiency	%	62	65	58	58
NO_x Emmissions					
NO_x emission According to EN89 @0% O_2	mg/kWh	35	48	22	30
General Data					
Recovery Rate @ 44°C	l/hr	150	170	328	324
Recovery Rate @ 50°C	l/hr	140	150	290	290
Recovery Rate @ 56°C	l/hr	117	137	258	258
Dimensions (Height to top of draft diverter)	mm	1635	1380	1595	1780
Dimensions (Width)	mm	405	560	645	705
Dimensions (Diameter)	mm	495	650	735	795
Storage Capacity	litres	108	144	268	358
Weight (Empty)	kg	49	56	124	151
Weight (Full)	kg	157	200	392	509
Hot Outlet Connection (Inches)	NPT	¾	¾	1	1
Cold Feed Connection (Inches)	NPT	¾	¾	1	1
Gas Connection (Inches)	BSP	½	½	½	½
Flue connection	mm	80	80	130	130
Electrical Requirements		n/a			
Power Consumption (Peak)	W	n/a	n/a	n/a	n/a
Sound Power Level	LWA(db)	55	55	55	55
Maximum Flue Gas Temperature	°C	122	188	142	125
Max Outlet Temperature	°C	71	71	80	80
Maximum Working Pressure	bar	8	8	8	8

Energy Label, Product Fiche and ErP Data Table are available at www.lochinvar.ltd.uk