



iXL LOW ENERGY DRY PUMPS





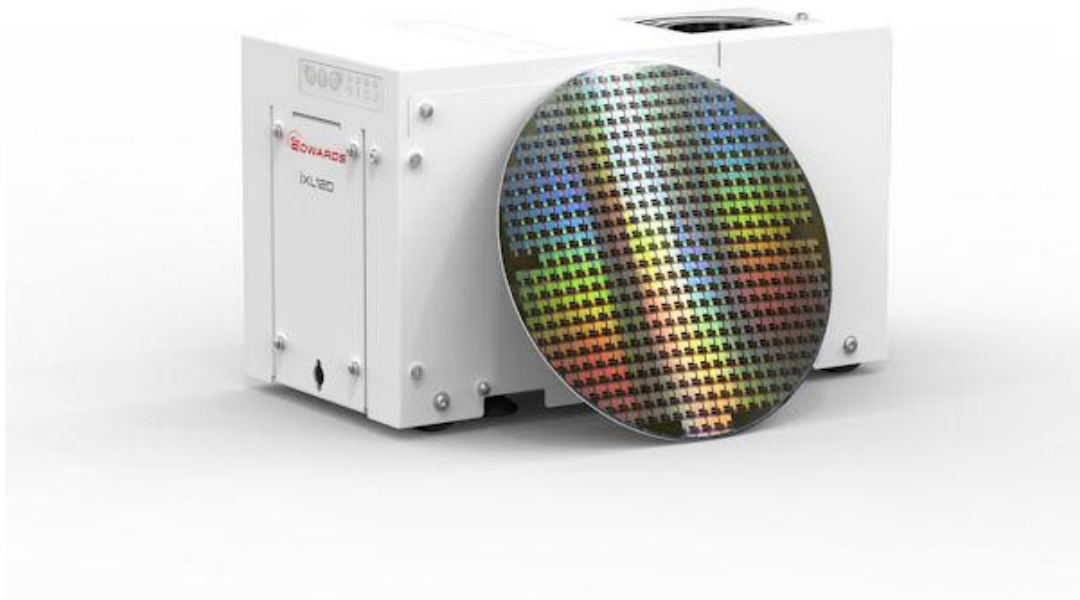
iXL120

LOW ENERGY DRY PUMP



iXL120 INTRODUCTION

- The Edwards iXL120 is an innovative dry pump offering fast pump down with extremely low energy consumption



- 110m³/h (65cfm) peak pumping speed
- Class leading pump down time
- Extremely low energy consumption
- Zero maintenance between overhauls
- Innovative top or end inlet connection
- Extremely small and light
- Up to 35°C water supply temperature
- Zero nitrogen purge option

iXL120 ENERGY REDUCTION DESIGN FEATURES

Multistage roots mechanism

Optimised to minimise the compression ratio from one pumping stage to the next

High efficiency motor

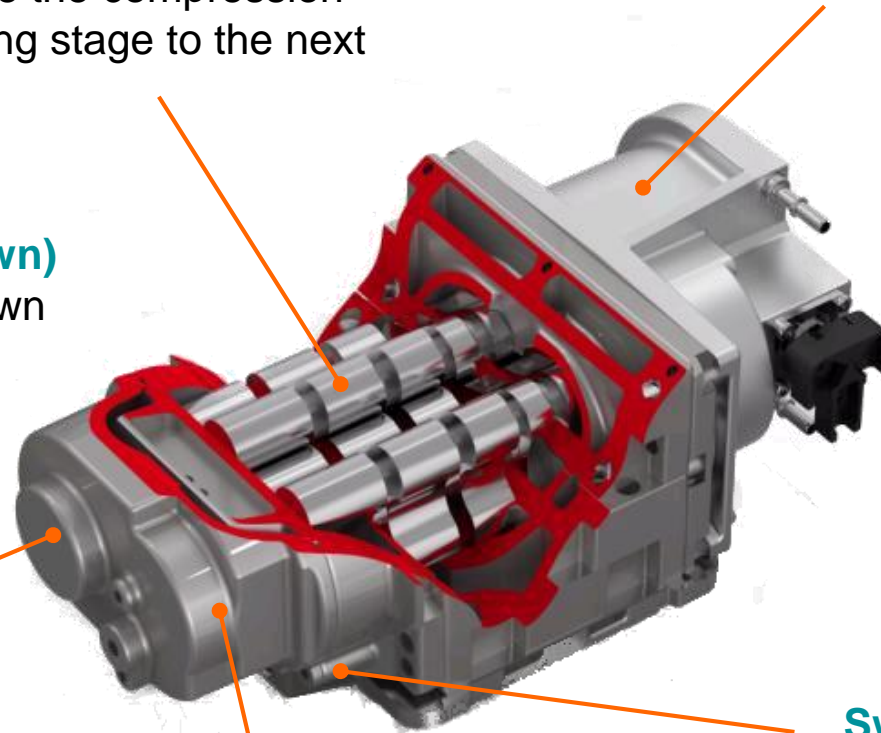
Specially designed potted motor maximises pumping power while minimising losses

Pressure relief valve (not shown)

Reduces power during pump down from atmospheric pressure

Inverter Drive (not shown)

Limits power consumption during normal operation and allows power reduction by up to 95% while idle



Special oil lubrication system

Meters the amount of oil fed to gears and bearings to minimise energy consumed by churning

Switched cooling system

Keeps the pump at a consistent temperature for maximum efficiency

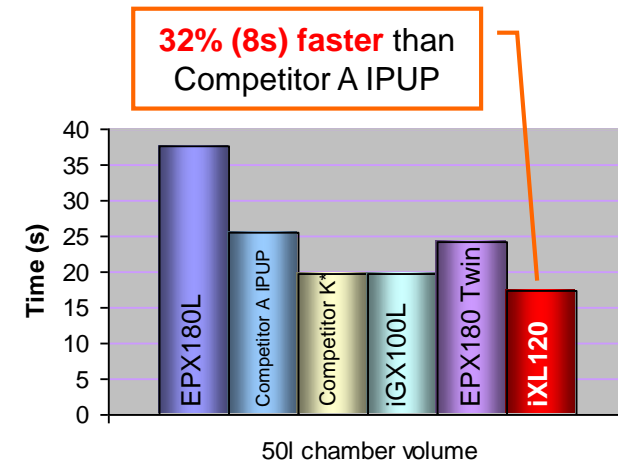
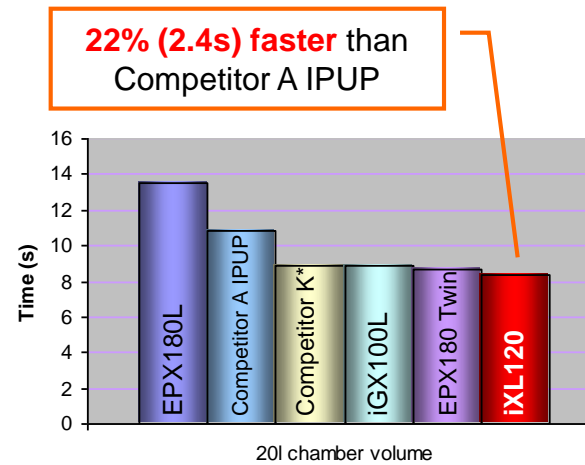
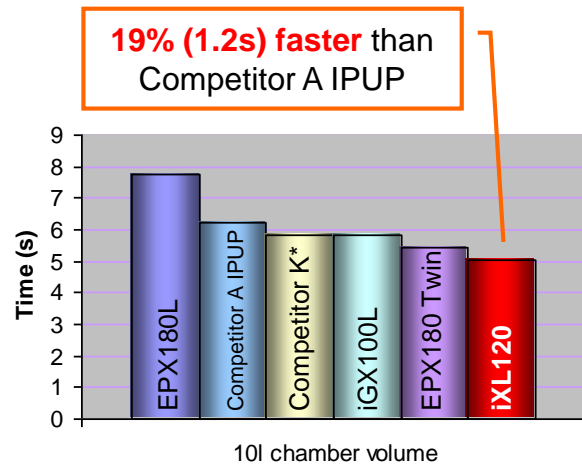
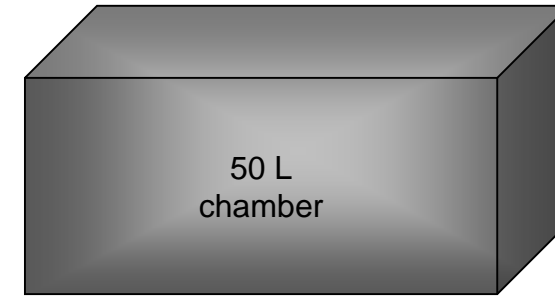
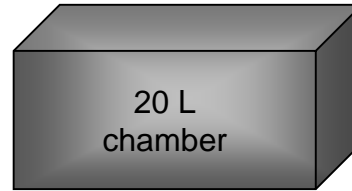
Special oil seals

Non-contacting oil seals minimise frictional losses

iXL120 CLASS LEADING PUMP DOWN TIME

- The iXL120 offers the fastest pump down of any dry pump in its class, helping to reduce the total average cycle time (TACT)¹

Pump Down Times to 500 mtorr



* Estimate

¹ Total Average Cycle Time (TACT): Process time per substrate

SPECIFICATION COMPARISON – iXL120 Vs IPUP A100

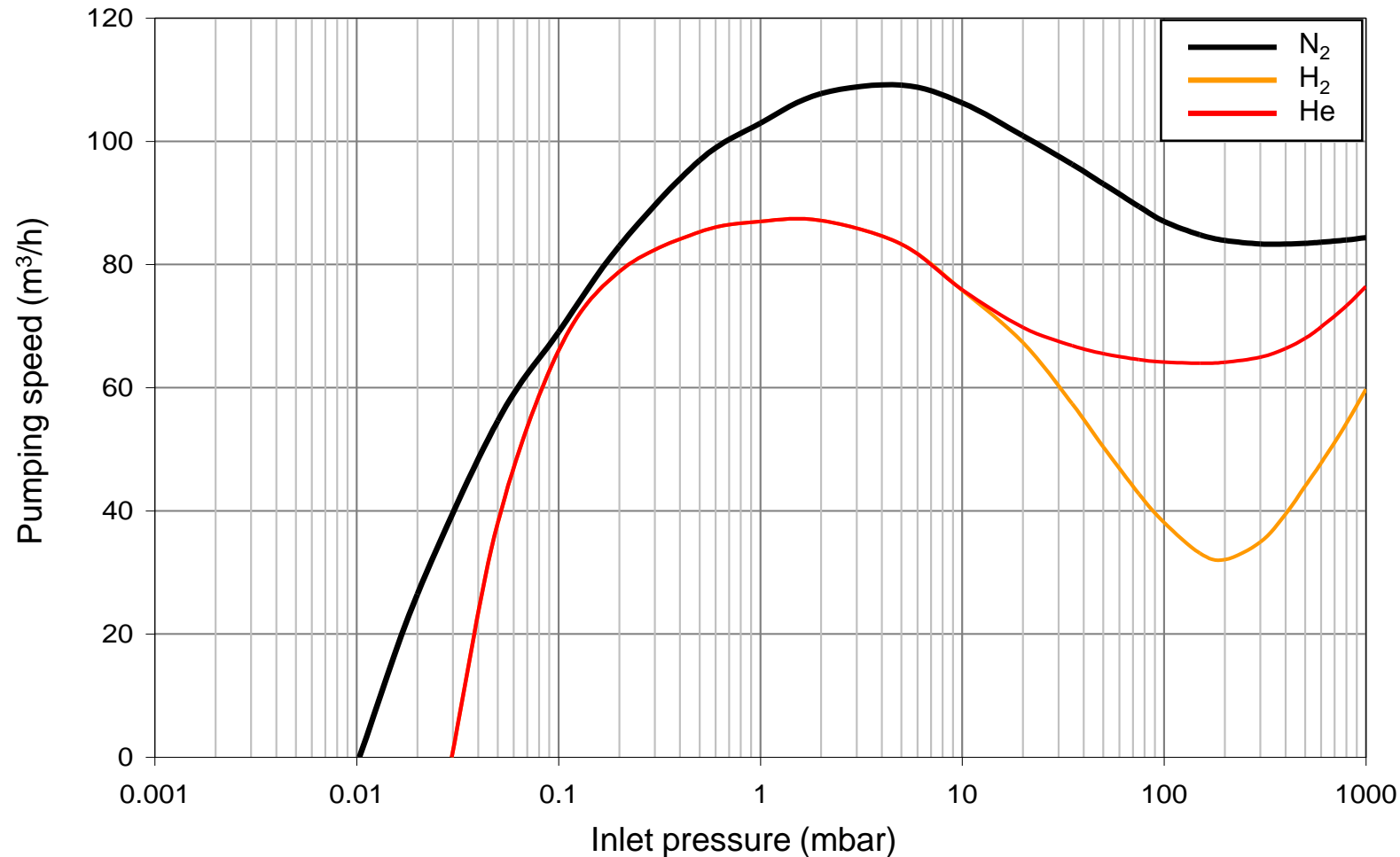
The iXL120 specification exceeds that of the IPUP A100 for most criteria making upgrading beneficial

	iXL120	IPUP A100
Peak Pumping Speed	110 m ³ /h	95 m ³ /h
Ultimate Pressure	0.013 mbar	0.007 mbar
Power at Ultimate	0.55 kW	1.65 kW
Water Consumption – minimum	1 l/m	1.7 l/m
Inlet Water Temperature – maximum	30 °C	25 °C
Nitrogen Flow - minimum	0	0
Footprint	0.103 m ²	0.168 m ²
Inlet Connection	NW50 or ISO63	NW50
Exhaust Connection	NW25	NW25
Weight	59 kg	104 kg
Idle Mode as standard	Yes	unknown

Source: Adixen A100 product datasheet 2007

iXL120N SPEED CURVES

- Excellent light gas pumping performance means the iXL120N is ideally suited to applications that require chamber thermal control



iXL120N NITROGEN PURGED VARIANT

- The iXL120N variant includes a nitrogen purge facility for applications where process gas carryover is likely
- A nominal nitrogen flow of 7 slm is injected between pump stages
- Customers wishing to minimise pump variants can use the iXL120N variant on clean applications and blank off the nitrogen connection



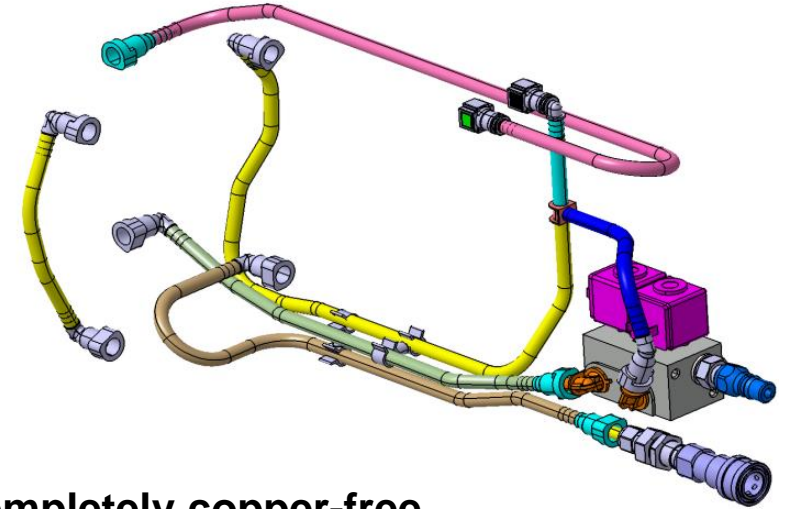
N2 purge connection
(iXL120N models only)

iXL120N
(rear view)

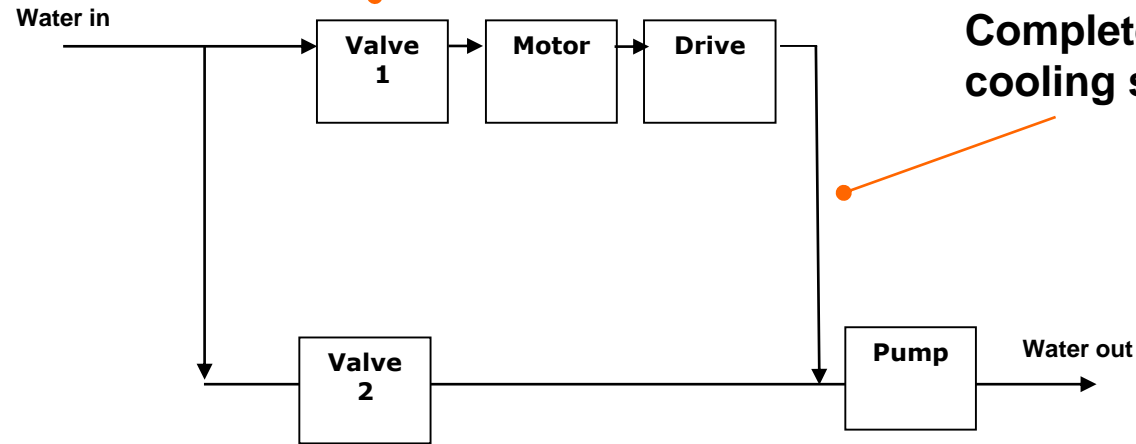
iXL120 COOLING CIRCUIT

Switched cooling circuit prevents condensation in the drive.

Valve toggles to keep drive temperature approximately uniform.



Up to 35 °C cooling water temperature.
Reduces fab forced cooling requirements.

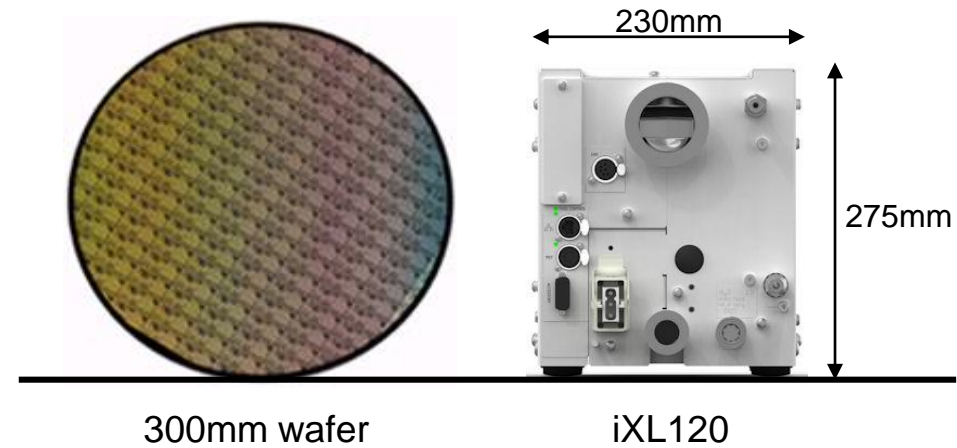
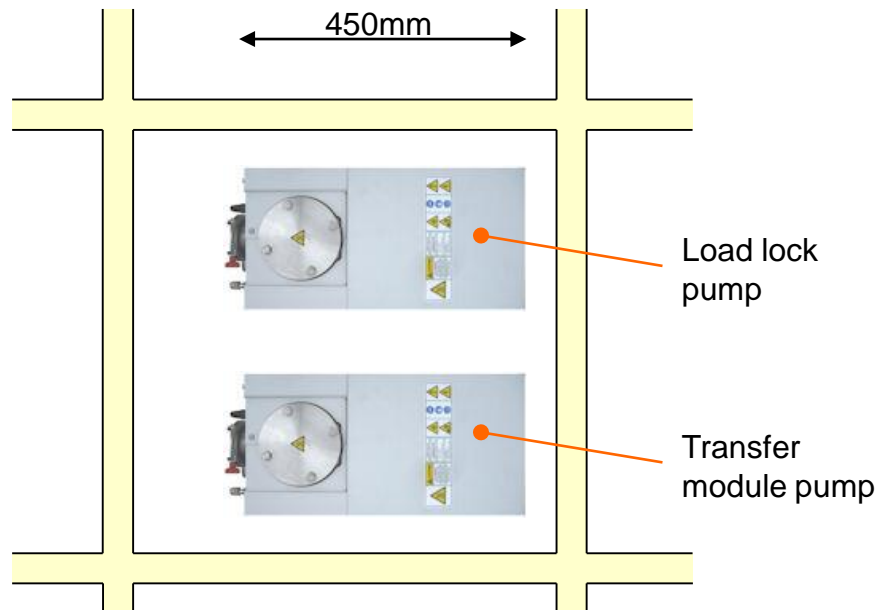


Completely copper-free cooling system.

Pump cooling always on when pump is running and off while pump is stopped.
Eliminates the risk of condensation.

iXL120 COMPACT SIZE

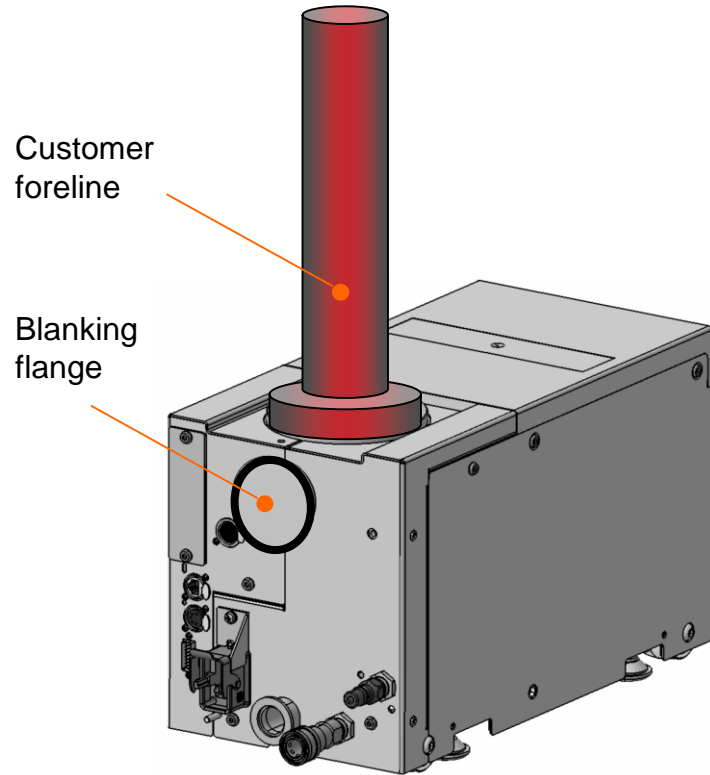
- The iXL120's compact size makes it ideally suited to either on-tool installation or it can be hidden beneath floor level.



- Two iXL120 pumps will fit comfortably within a 600mm x 600mm waffle floor, saving floor space.
- Pump only weighs 59kg

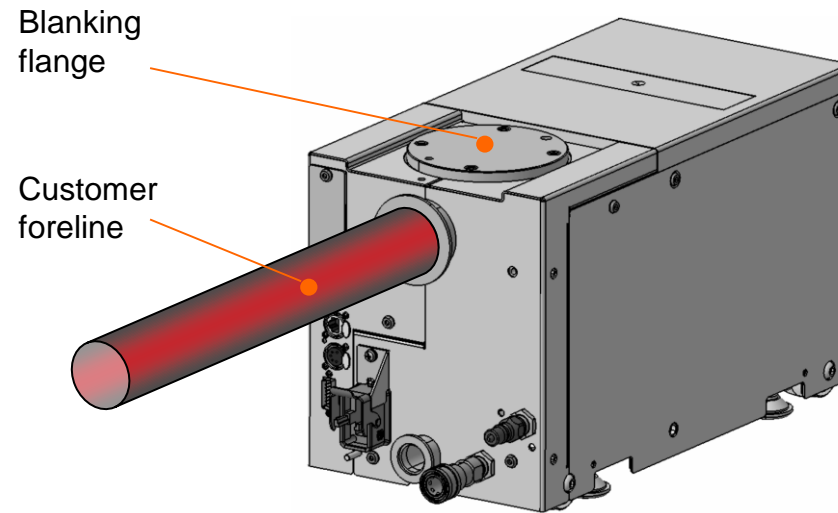
iXL120 INNOVATIVE INLET CONNECTIONS

Option 1 – vertical inlet connection (ISO63)



- iXL120 pumps are supplied as standard with two inlet connection positions enabling efficient foreline routing
- Two iXL120 pumps may be stacked if required

Option 2 – horizontal inlet connection (NW50)



iXL120 PUMP STACKING AND EARTHQUAKE RESTRAINT

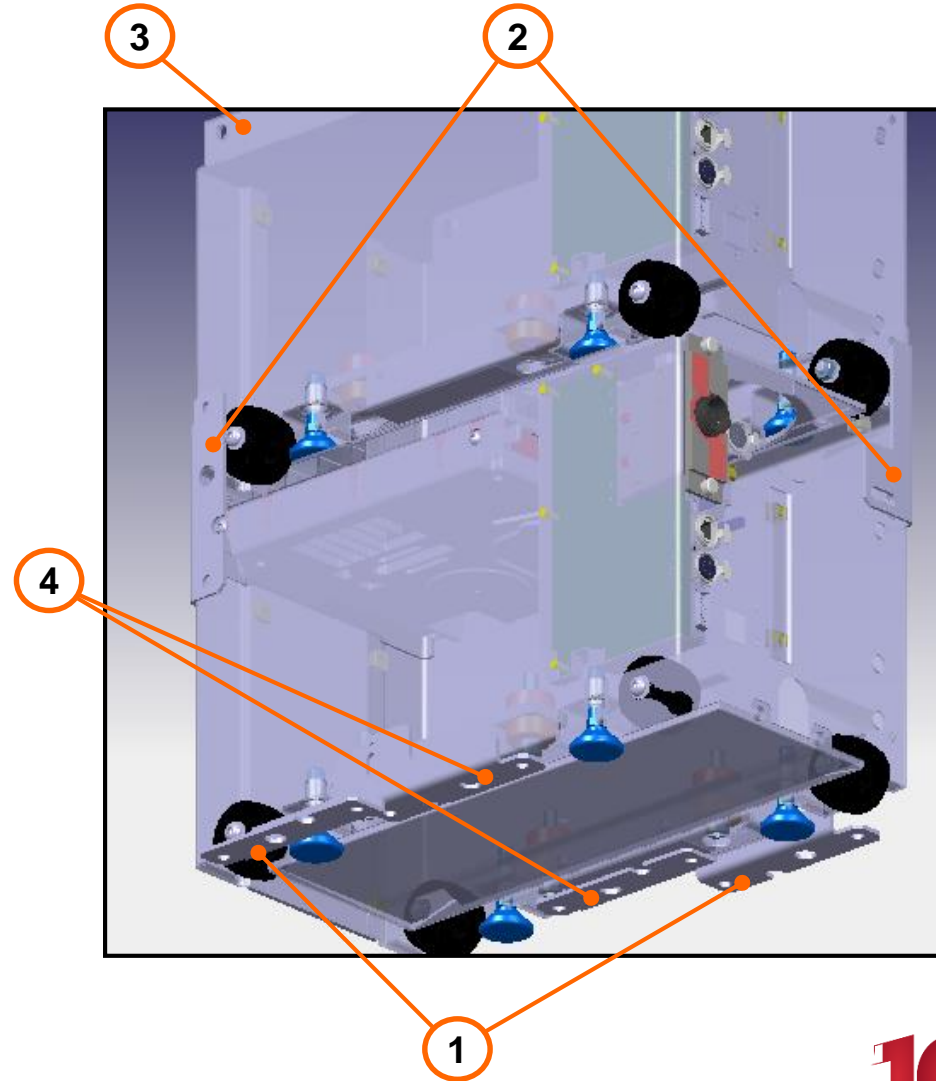
- Multi-function securing brackets are included with every pump

1 In this position the brackets are used as Level 4 compliant earthquake restraints or to secure the pump to a pallet while in transit

2 In this position the brackets are used to secure two stacked pumps together (the lower pump's brackets secure the stack to the floor)

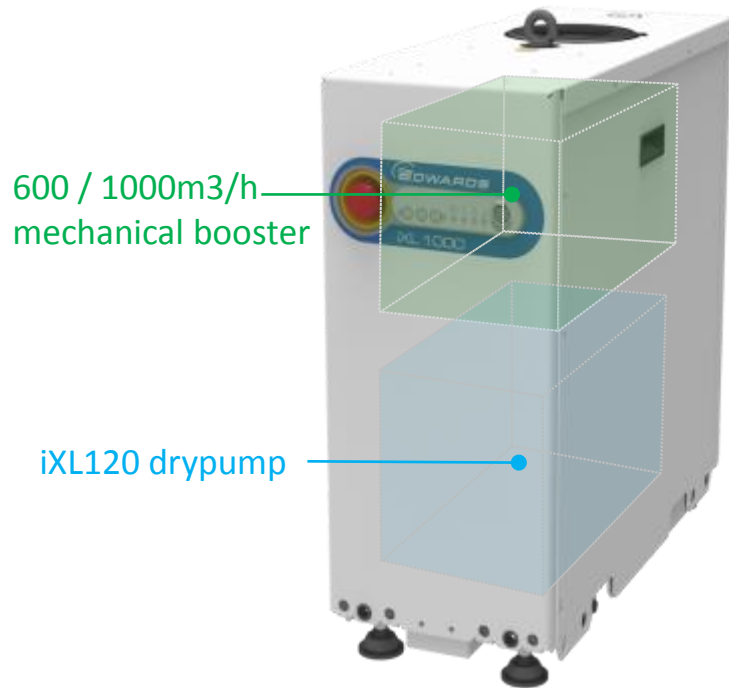
3 In this position the brackets are used for lifting

4 In this position the brackets are conveniently stowed under the pump frame for future use



iXL600/1000 FEATURES AND BENEFITS

iXL pump range has reduced energy consumption compared to the highly successful iGX dry pump series.



iXL600 / 1000

- **50% lower power at ultimate pressure**
 - Only 0.8 kW (iXL600) compared to 1.6 kW for iGX600L
- **Same peak pumping performance as iGX600L and iGX1000L**
 - Easy replacement of iGX600L or iGX1000L
- **Green Mode energy reduction as standard**
 - Additional 38-96% power reduction while idle
- **Zero maintenance**
 - Precision oil lubricated bearings throughout
- **Compact footprint and replaceable with iGX series**
 - Only 0.195 m² – same as iGX600 and iGX1000
 - Can directly replace GX pumps – no adaptors required
- **Consistent performance from a single voltage variant**
 - 200-460V 50/60 Hz single voltage variant

PRODUCT SPECIFICATION

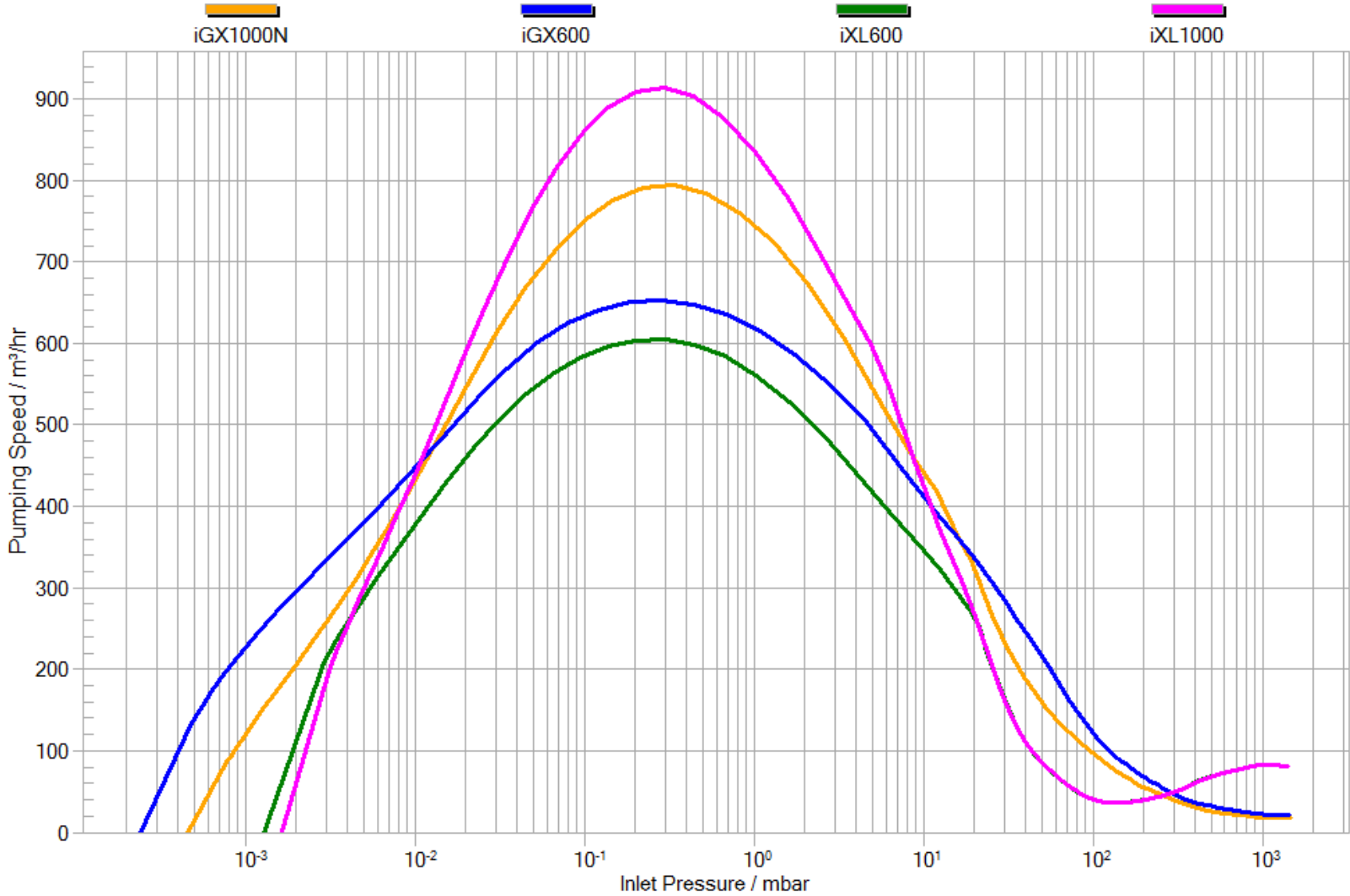
	Units	iXL1000(N)	iXL600(N)	iGX600L
Peak Pumping Speed	m ³ /h	930	620	620
Ultimate Pressure	mbar	0.001	0.001	0.001
Power at Ultimate (700T exhaust)	kW	1.0	0.8	1.6
Power in Green Mode (minimum)	kW	0.045	0.045	0.045
Water Consumption	l/m	1.6	1.6	2
Nitrogen Purge Flow	slm	0 - 40	0 - 40	0 - 39
Footprint	m ²	0.195	0.195	0.195
Height	mm	650	650	695
Weight	kg	167	167	220
Noise	dB(A)	< 55	< 55	< 58
Inlet Connection		ISO100	ISO100	ISO100
Exhaust Connection		NW25	NW25	NW25
Water Connection		3/8" Quick Connect	3/8" Quick Connect	3/8" Quick Connect
N2 Connection		1/4" Compression	1/4" Compression	1/4" Compression



50% lower power than iGX600L

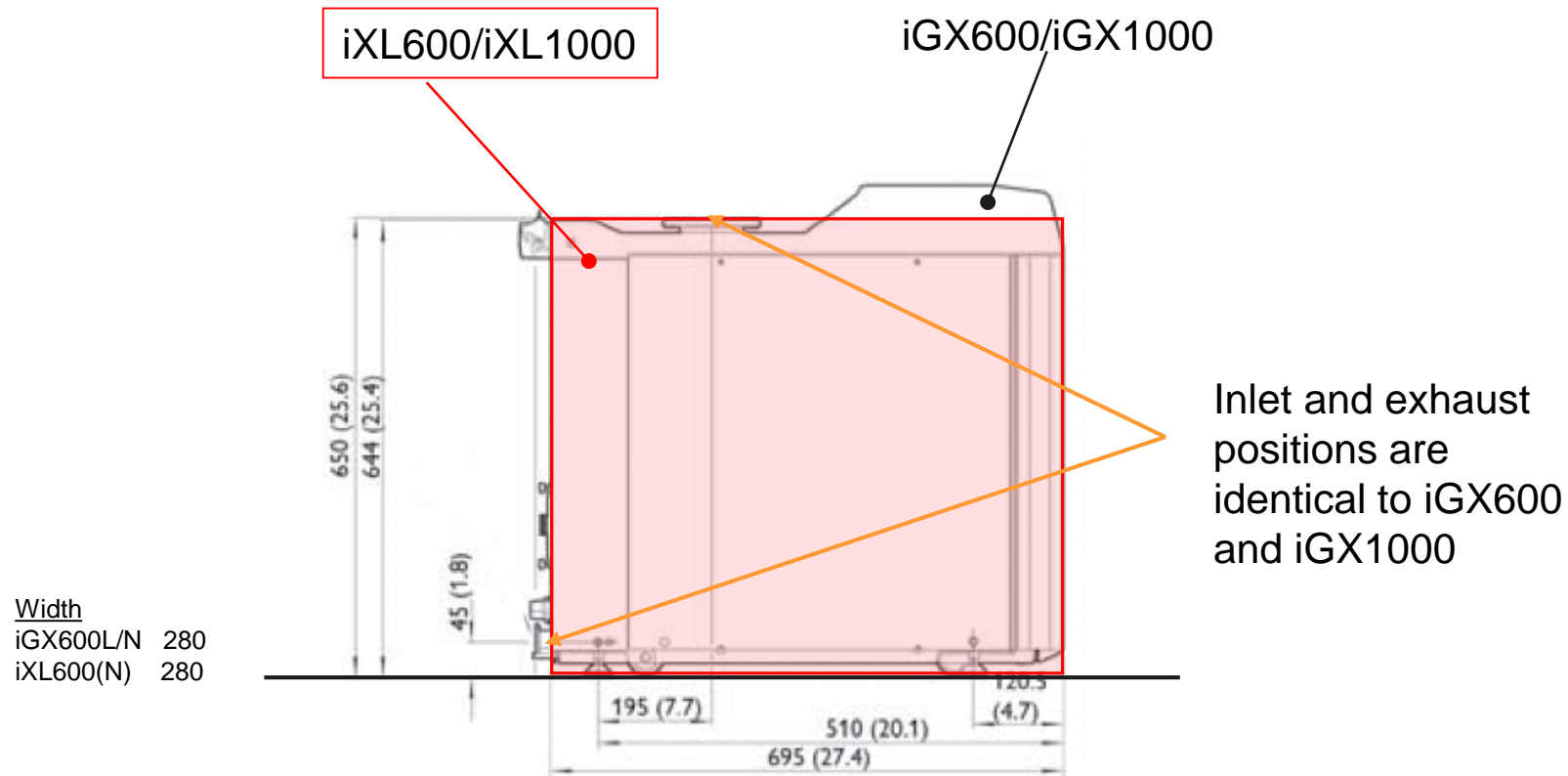


iXL600/1000 SPEED CURVE



iXL600/1000 – SAME FOOTPRINT AS iGX SERIES

iXL600 / 1000 has the same footprint but reduced height compared to iGX600 / iGX1000



All dimensions in mm



iXL600/100 M



iXL1000M TECHNICAL DESCRIPTION

- Re-designed thermal management system for by-product handling.
 - Prevent condensation of by-products including $(\text{NH}_4)_2\text{SiF}_6$.
 - Cool enough to prevent TDMAT decomposition.
- Gasket seal for leak integrity.
- Multiple roots dry pump stages.
 - maximise throughput while minimising power requirements.
- Precision bearings throughout ensure smooth, low vibration operation.

- All bearings and timing gears are oil lubricated.
 - long term reliability and eliminates the need for routine maintenance.

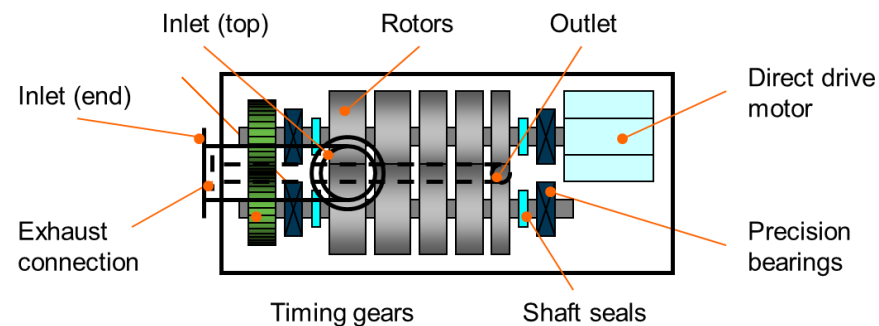
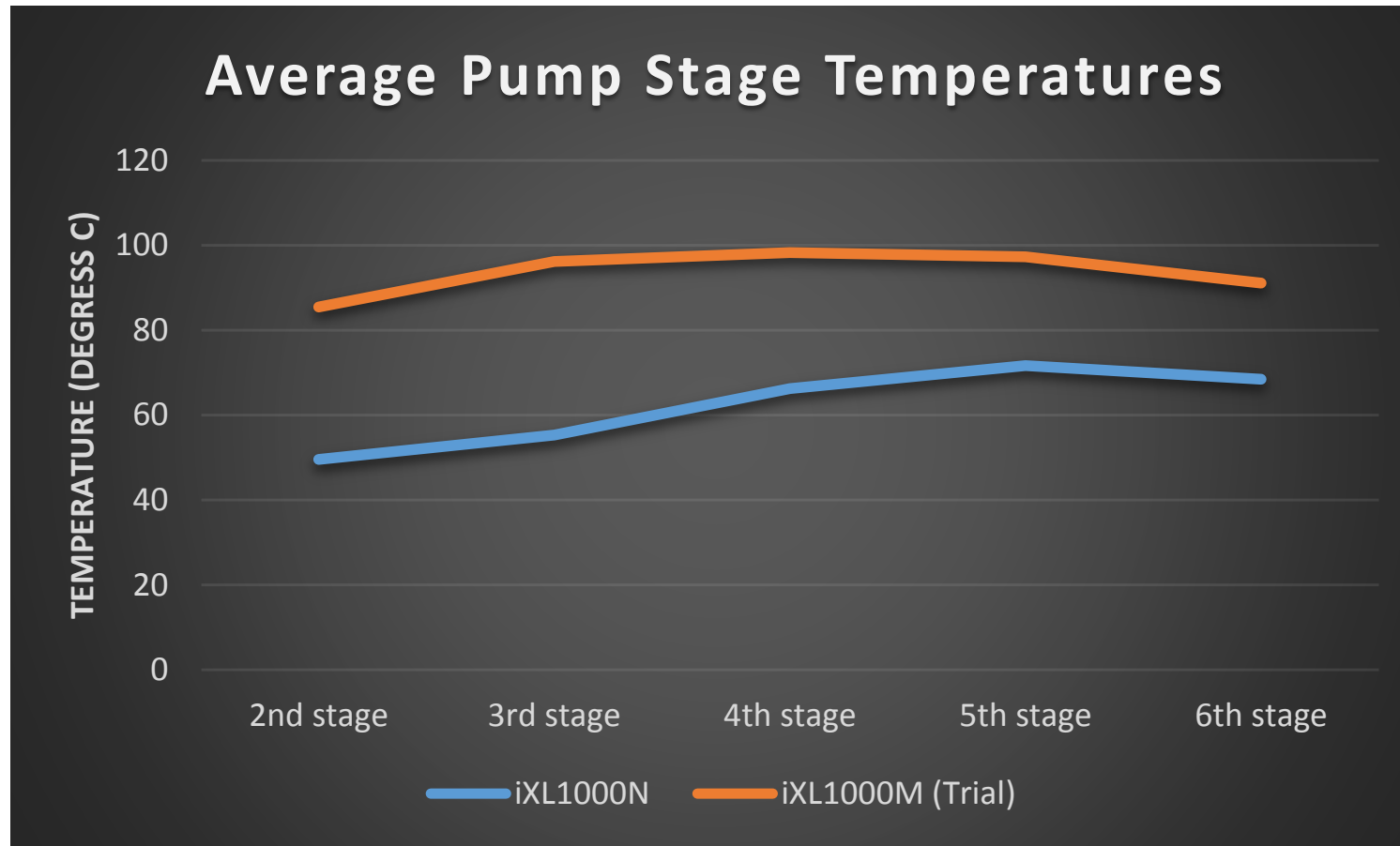


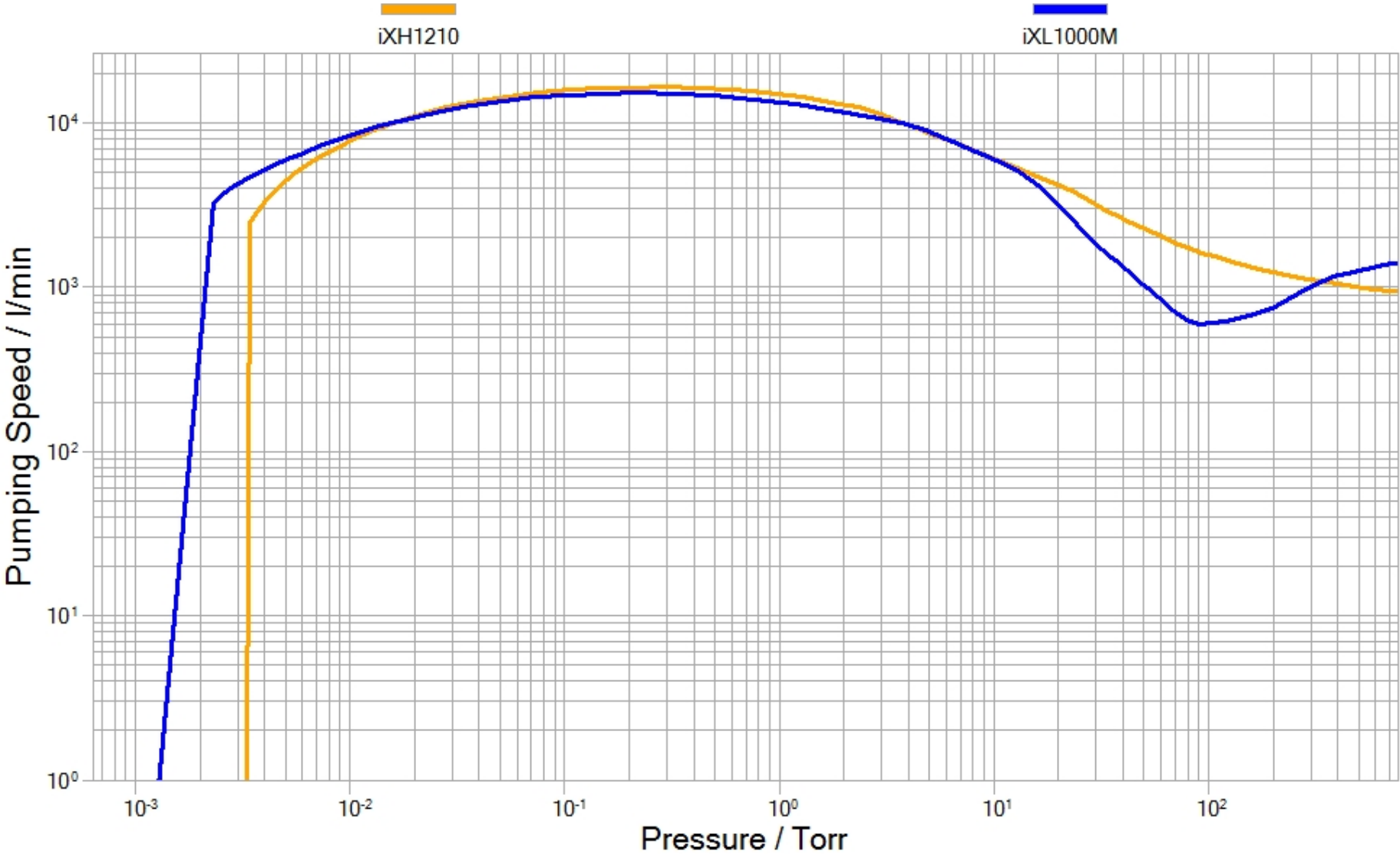
Diagram for illustration only

iXL1000M TEMPERATURE MANAGEMENT

- Thermally managed to minimise by-product condensation and avoid precursor breakdown.



PUMPING SPEED COMPARISON



PRODUCT SPECIFICATION

	Units	iXL1000M	iXH1210
Peak Pumping Speed	m ³ /h	930	1025
Ultimate Pressure	mbar	0.001	0.005
Power at Ultimate (700T exhaust)	kW	1.0	3.2
Power in Green Mode (minimum)	kW	0.045	0.045
Water Consumption	l/m	<2	4
Nitrogen Purge Flow	slm	Selectable 0 - 40	44
Footprint	m ²	0.195	0.306
Dimension	mm	695 x 280 x 650	784 x 390 x 780
Noise	dB(A)	< 55	< 70
Inlet Connection		ISO100	ISO100
Exhaust Connection		NW25	NW40
Water Connection		3/8" Quick Connect	3/8" Quick Connect
N2 Connection		1/4" Compression	1/4" Compression

Similar in performance

Better base pressure

~70% reduction

50% reduction

36% reduction

15 dB(A) reduction



SUMMARY

- iXL600/1000 (N) is a new low energy dry pump for clean and light duty applications.
- iXL600/1000 (M) is a new low energy process dry pump.
 - Thermal management for maximum uptime.
 - Applications include for Oxide Etch, Siconi, TiN (TDMAT).
- iXL features
 - Low energy consumption
 - Increased pumping performance
 - Fast chamber pump down
 - Can easily replace iGX600 and iGX1000 on clean and light duty applications
 - iXL (M) can replace iXH1210 on TiN

