

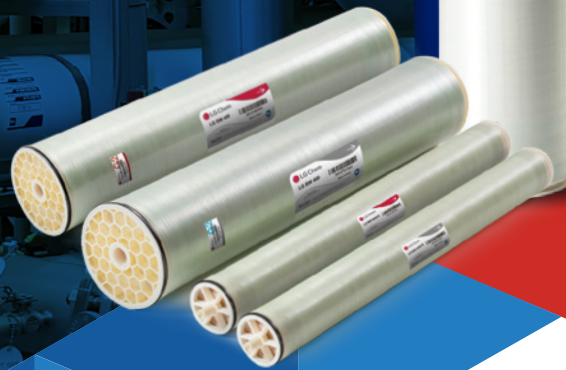


ATS WATER TECHNOLOGY

ADVANCED TECHNOLOGY SOLUTIONS
EXPERT IN WATER TREATMENT

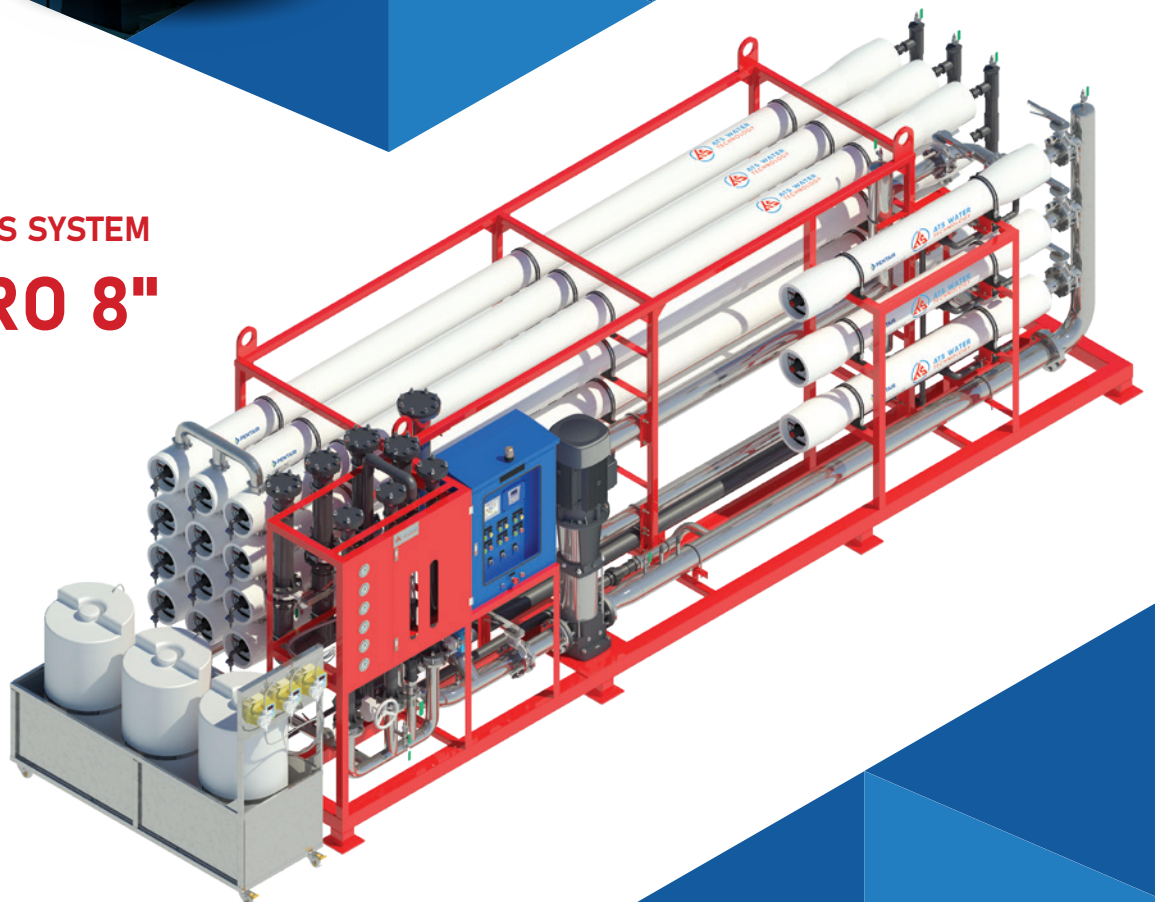


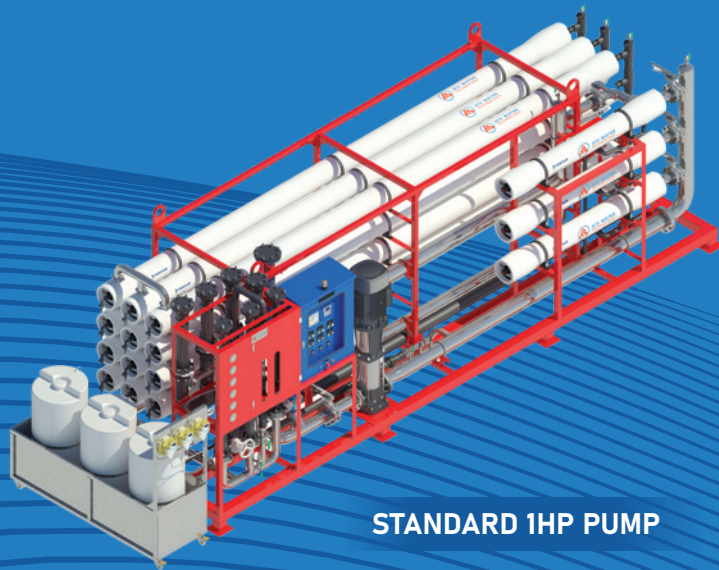
HI-END PRODUCTS - MODERN TECHNOLOGIES - PROFESSIONAL SERVICES



REVERSE OSMOSIS SYSTEM

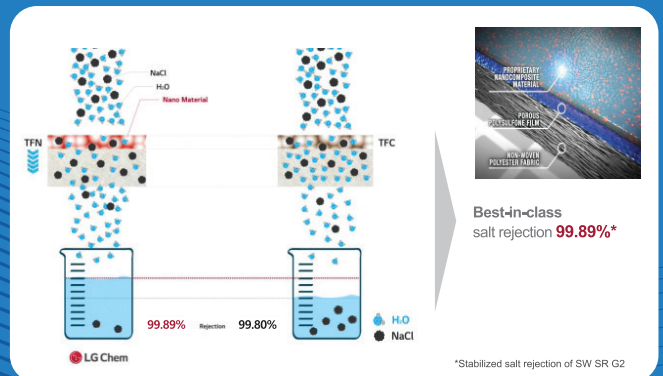
ADES BRO 8" Series





STANDARD 1HP PUMP

Core Technology: Thin Film Nanocomposite (TFN)
Performance comparison between TFN vs. TFC (Thin-Film Composite)



COMMERCIAL REVERSE OSMOSIS SYSTEMS CAPACITY 5 - 100 m³/h

Descriptions

Using state of art technology and decades of expertise and experience, ATS has built a robust and reliable Reverse Osmosis (RO) system for the challenging markets.

In this system, ATS uses the most advanced equipments such as: RO membrane from LG Chem NanoH2O, using innovative Thin Film Nano-composite (TFN) technology, Pentair Codeline pressure vessel, Aqualine high flow cartridge filter...

Standard Features

- » LG Chem NanoH2O: 8" TFN spiral wound RO membrane
- » Pentair Aqualine: 5µm high flow cartridge filter
- » Pentair Codeline: FRP RO Pressure Vessel
- » Stainless steel multistage high pressure pump with VFD
- » Control panel: PLC & 7" HMI
- » Electrical enclosure: SS400 powder coated IP54
- » Automatic hourly flushing with auto-valve
- » Piping: Low pressure – uPVC Sch80 with NSF Certification; High pressure SUS316 Sch5
- » Frame: SS400 with 3 layers epoxy coated steel
- » Power supply: 380-415V/3Ph/50Hz
- » Connection: JIS-10K Flange

Accessories

- » Liquid filled pressure gauges (panel mount)
- » Flow indicators: Permeate, Concentrate & Recirculation
- » High & Low pressure sensors
- » ORP meter & controller
- » Permeate conductivity monitor
- » Manual valves & Accessories
- » Anti-scalant dosing pump

Available Options

- » Membrane cleaning (CIP) system
- » pH adjustment for Feed / Permeate line
- » Online conductivity monitor for Feed line
- » Feed pump
- » Feed / Permeate blending
- » Water meter/Pulse water meter for dosing pump control
- » Connection: DIN / ANSI Flange

Operation

- » Operating pressure: 100-250psi (6.8-17bar)
- » Feed pressure for AQUALINE pretreatment >2 bar
- » Design recovery rate: 75% (+5%)
- » Design pH: 7 at 25°C
- » Max. feed water temperature: 45°C
- » Operating | cleaning pH range: 2-11 | 2-12
- » The higher feed TDS, the lower recovery rate
- » Design feed water TDS: <1000ppm
- » For higher TDS, system should be upgraded

Feed Water Quality Recommendation

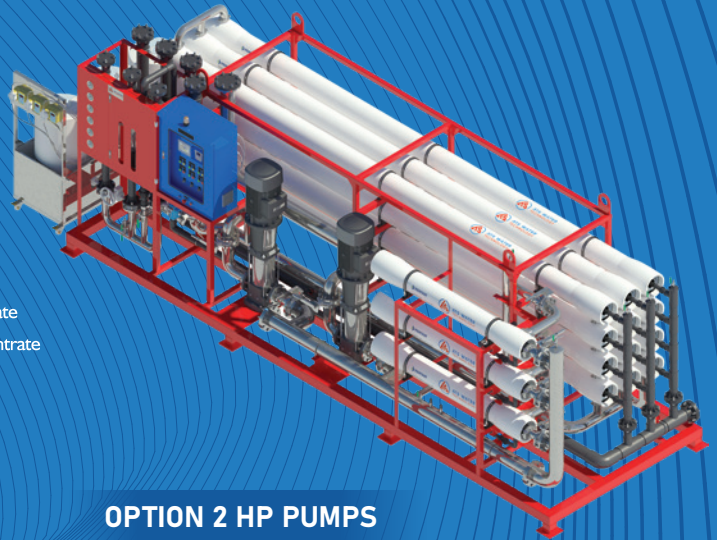
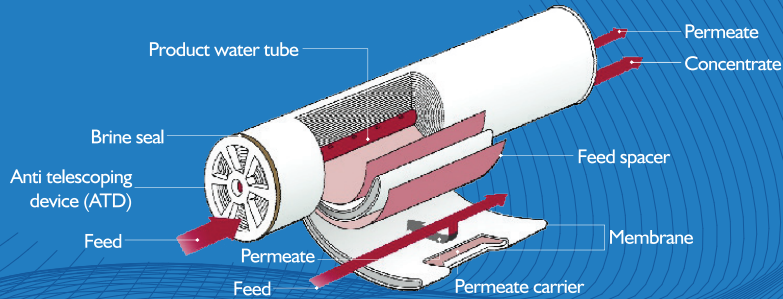
Component	Unit	Max Level
TDS	mg/L	<1000
SDI	1	5
Oil & Grease	mg/L	0.1
TOC	mg/L	3
COD	mg/L	10
AOC	ug/l Ac-C	10
Free Chlorine	mg/L	0.1
Ferrous Iron	mg/L	4 (pH < 6, O ₂ < 0.5ppm)
Ferric Iron	mg/L	0.05
Manganese	mg/L	0.05
Aluminum	mg/L	0.05

THE SYSTEM DESIGNED FOR CITY WATER APPLICATIONS OR SIMILAR.

PLEASE CONTACT US FOR OTHER WATER QUALITY OR APPLICATIONS

ADES BRO 8" Series

Principle of RO Membrane: Spiral Wound Element Construction



OPTION 2 HP PUMPS

COMMERCIAL REVERSE OSMOSIS SYSTEMS CAPACITY 5 - 100 m³/h

Capacity: 5 - 100 m³/h and above

RO system nowadays is being applying commonly in drinking water treatment system to ensure purewater to supply in the building service, factory production, drinking water and so on. The RO system was designed for easy operation and maintenance purpose.

Other solutions can be offered together with this RO system

- » Pre-treatment with UF
- » Post-treatment with EDI
- » Post-treatment with chemical dosing

Applications

- » Pure-water
- » Drinking water
- » Special design for city water or Building service water

Documents (will be provided with Order)

- » Operation & Maintenance Manual
- » P&ID and system drawings with piping, instruments & sizing

ATS supplies a full line of standard and fully customizable RO systems, that may include 8" BWRO, SWRO or 4" BWRO with variable application from city water, well water, brackish water, wastewater reuse or sea water.

Solutions for wastewater reuse

- » UF protection with Auto-selfcleaning strainer/disc filter
- » Pre-treatment with UF
- » Using anti-fouling RO membrane (AFR)
- » Post-treatment with EDI
- » Post-treatment with chemical dosing

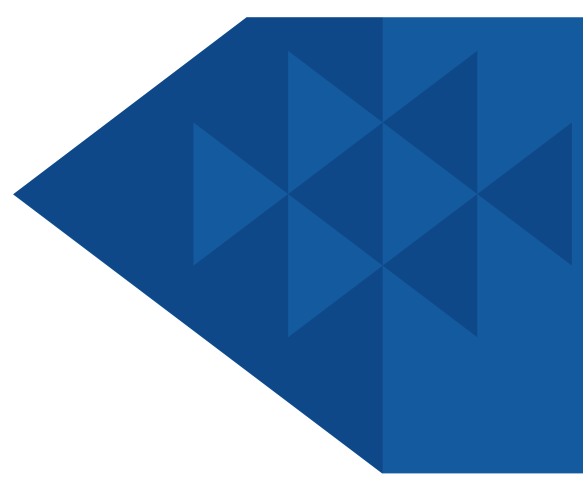
- » Membrane cleaning (CIP) system
- » pH adjustment for Feed / Permeate line
- » Online conductivity monitor for Feed line
- » Feed pump
- » Feed / Permeate blending
- » Water meter/Pulse water meter for dosing pump control
- » Connection: DIN / ANSI Flange

Solutions for Sea Water Desalination

- » UF protection with Automatic self cleaning strainer/disc filter
- » Pre-treatment with UF
- » RO system with Sea water membrane (SWRO)
- » 2nd pass RO system with Brackish water membrane (BWRO)
- » Post-treatment with EDI
- » Post-treatment with chemical dosing



ATS WATER
TECHNOLOGY



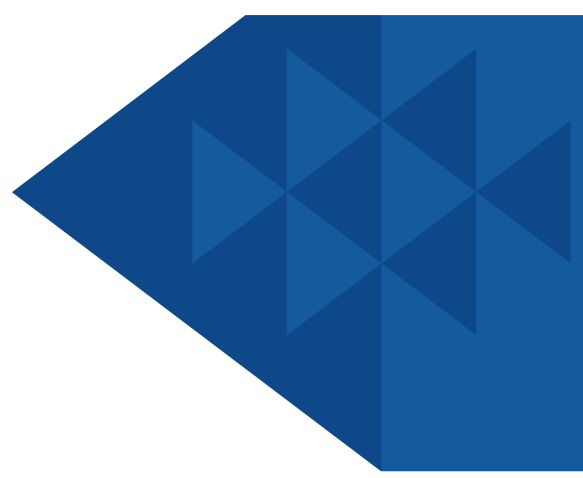
**ADES BR08 Series
Capacity: 7 - 10 m³/h**

MODEL	ADES-BR08-007	ADES-BR08-010
Permeate flow	7 m ³ /h	10 m ³ /h
Concentrate flow	2.37 m ³ /h	3.33 m ³ /h
Feed flow	9.37 m ³ /h	13.33 m ³ /h
HIGH PRESSURE PUMPS		
Quantity	1	1
Motor HP	5.5 kW	7.5 kW
Design flowrate	12 m ³ /h	15 m ³ /h
Design pressure	8 bar	8 bar
Manufacturer	PENTAIR	
CARTRIDGE FILTER		
Filtration degree	5 μm	5 μm
Cartridge filter element	ALN05-60B	ALN05-60B
Cartridge filter housing	80AQ15-60	80AQ15-60
Quantity	1	1
Manufacturer	PEANTAIR	
MEMBRANES AND PRESSURE VESSELS		
No. of membranes	12	12
No. of Pressure vessel	3	3
RO system configuration (Elements/PVs)	2-1 (4)	2-1 (4)
Membrane's manufacturer	LG CHEM NANO H2O	
Pressure vessel's manufacturer	PENTAIR	
MEMBRANES AND PRESSURE VESSELS		
Feed port	DN 50	DN 65
Permeate port	DN 40	DN 40
Concentrate port	DN 25	DN 25
Off-spec port	DN 40	DN 40
Drain port	DN 25	DN 25
Minimum feed water pressure	2 bar	2 bar
Power		
DIMMENSIONS		
Approx. Length	5000 mm	6000 mm
Approx. Width	1300 mm	1300
Approx. Height	2400 mm	2400 mm
Approx. Weight	1330 kg	1640 kg



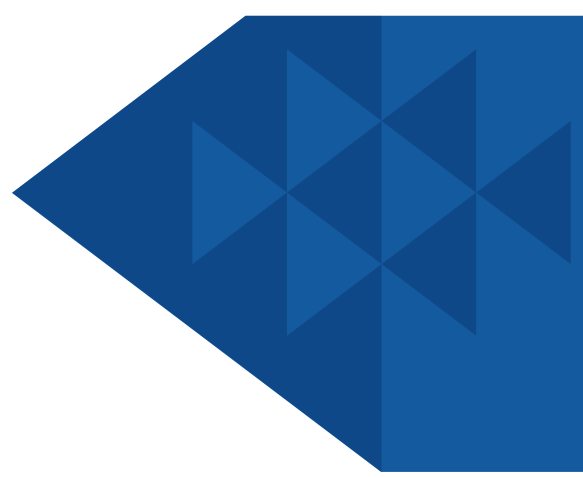
**ADES BR08 Series
Capacity: 15 - 20 m³/h**

ADES-BR08-015	ADES-BR08-020	ADES-BR08-030
15 m ³ /h	20 m ³ /h	30 m ³ /h
5 m ³ /h	6.57 m ³ /h	10 m ³ /h
20 m ³ /h	26.5 m ³ /h	40 m ³ /h
HIGH PRESSURE PUMPS		
1	1	1
11 kW	11 kW	15
25 m ³ /h	29 m ³ /h	43
8 bar	8 bar	8
PENTAIR		
CARTRIDGE FILTER		
5 µm	5 µm	5 µm
ALN05-60B	ALN05-60B	ALN05-60B
80AQ15-60	80AQ15-60	80AQ15-60
1	1	1
PENTAIR		
MEMBRANES AND PRESSURE VESSELS		
18	24	36
6	6	9
4-2 (3)	4-2 (4)	6-3 (4)
LG CHEM NANO H ₂ O		
PENTAIR		
INSTALLATION REQUIREMENTS		
DN 80	DN 80	DN 100
DN 50	DN 65	DN 80
DN 32	DN 40	DN 50
DN 50	DN 65	DN 80
DN 25	DN 25	DN 25
2 bar	2 bar	2 bar
DIMMENSIONS		
5000 mm	6100 mm	6200 mm
1600 mm	1600 mm	1900 mm
2500 mm	2500 mm	2600 mm
1330 kg	2470 kg	3240 kg



**ADES X-LINE Series
Capacity: 40 - 50 m³/h**

MODEL	ADES-BRO8-040	ADES-BRO8-050
Permeate flow	40 m ³ /h	50 m ³ /h
Concentrate flow	13.33 m ³ /h	16.67 m ³ /h
Feed flow	53.33 m ³ /h	66.67 m ³ /h
HIGH PRESSURE PUMPS		
Quantity	1	1
Motor HP	22.0 kW	22 kW
Design flowrate	54 m ³ /h	67 m ³ /h
Design pressure	9 bar	8 bar
Manufacturer	PENTAIR	
CARTRIDGE FILTER		
Filtration degree	5 μm	5 μm
Cartridge filter element	ALN05-60B	ALN05-60B
Cartridge filter housing	80AQ15-60	80AQ15-60
Quantity	2	3
Manufacturer	PENTAIR	
MEMBRANES AND PRESSURE VESSELS		
No. of membranes	45	60
No. of Pressure vessel	9	12
RO system configuration (Elements/PVs)	6-3 (5)	8-4 (5)
Membrane's manufacturer	LG CHEM NANO H2O	
Pressure vessel's manufacturer	PENTAIR	
INSTALLATION REQUIREMENTS		
Feed port	DN 125	DN 125
Permeate port	DN 80	DN 100
Concentrate port	DN 50	DN 65
Off-spec port	DN 80	DN 100
Drain port	DN 25	DN 25
Minimum feed water pressure	2 bar	2 bar
Power		
DIMMENSIONS		
Approx. Length	7200 mm	7300 mm
Approx. Width	1900 mm	2000 mm
Approx. Height	2200 mm	2200 mm
Approx. Weight	3910 kg	4760 kg

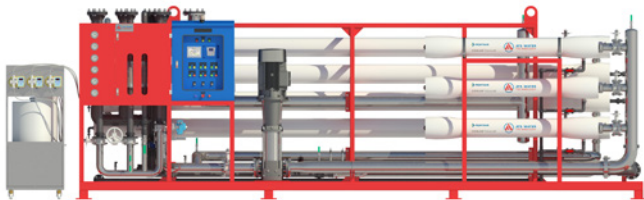


**ADES X-LINE Series
Capacity: 60 - 100 m³/h**

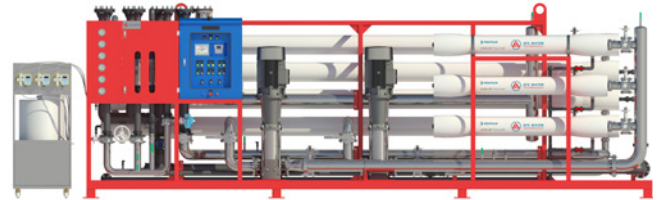
ADES-BRO8-060	ADES-BRO8-070	ADES-BRO8-100
60 m ³ /h	70 m ³ /h	100 m ³ /h
20 m ³ /h	23.33 m ³ /h	33.33 m ³ /h
50 m ³ /h	93.33 m ³ /h	133.33 m ³ /h
HIGH PRESSURE PUMPS		
1	1	1
30 kW	30.0 kW	45.0 kW
80 m ³ /h	94 m ³ /h	134 m ³ /h
8 bar	8 bar	8 bar
PENTAIR		
CARTRIDGE FILTER		
5	5 µm	5 µm
ALN05-60B	ALN05-60B	ALN05-60B
80AQ15-60	80AQ15-60	80AQ15-60
3	4	5
PENTAIR		
MEMBRANES AND PRESSURE VESSELS		
75	90	120
15	18	24
10-5 (5)	12-6 (5)	16-8 (5)
LG CHEM NANO H2O		
PENTAIR		
INSTALLATION REQUIREMENTS		
DN150 (6")	DN150 (6")	DN200 (8")
DN100 (4")	DN125 (5")	DN125 (5")
DN65 (2.5")	DN65 (2.5")	DN80 (3")
DN100 (4")	DN125 (5")	DN125 (5")
DN25 (1")	DN25 (1")	DN25 (1")
2 bar	2 bar	2 bar
DIMMENSIONS		
7500 mm	7700 mm	7900 mm
2200 mm	2400 mm	2800 mm
2600 mm	3000 mm	3000 mm
5730 kg	6610 kg	8360 kg

ADES BRO 8" MODELS (50Hz)

Model	RO System Configuration	Total membrane	Capacity (m ³ /h)	Feed / Permeate / Concentrate / Off-spec Connections, (DN)	Dimensions (LxWxH)m	Weight (kg)
ADES-BRO8-07	2-1 (3)	9	7	50/40/25/40/25	6.0 x 1.3 x 2.4	1620
ADES-BRO8-10	2-1 (4)	12	10	65/50/40/40/25	6.0 x 1.3 x 2.4	1620
ADES-BRO8-015	4-2 (3)	18	15	65/65/50/50/25	5.0 x 1.6 x 2.5	2130
ADES-BRO8-20	4-2 (4)	24	20	65/65/50/65/25	6.1 x 1.6 x 2.5	2510
ADES-BRO8-30	6-3 (4)	36	30	80/65/65/65/25	6.2 x 1.9 x 2.6	3290
ADES-BRO8-40	6-3 (5)	45	40	80/65/65/65/25	7.2 x 1.9 x 2.2	4020
ADES-BRO8-50	8-4 (5)	60	55	125/80/65/80/25	7.3 x 2.0 x 2.2	4900
ADES-BRO8-60	10-5 (5)	72	65	125/100/65/100/25	7.5 x 2.2 x 2.6	5790
ADES-BRO8-70	12-6 (5)	84	80	125/100/65/100/25	7.7 x 2.4 x 3.0	6840
ADES-BRO8-100	16-8 (5)	120	100	150/125/80/125/25	7.9 x 2.8 x 3.0	8350



STANDARD SYSTEM WITH 1 HP PUMP



OPTION WITH 2 HP PUMPS

For other flow rate and applications, please contact us for detail design and suitable offer.

With other RO configurations, the model can be offered accordingly.

ATS WATER TECHNOLOGY CO., LTD.

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