

# Electrical Pump



Delta Electronics Inc.  
252 Shangying Road, Guishan Industrial Zone, Taoyuan  
County, 33341, Taiwan  
TEL: +886-3-359-1968  
FAX: +886-3-359-1991  
[www.deltaww.com](http://www.deltaww.com)

Dealer

[www.deltaww.com](http://www.deltaww.com)



## About Delta

To provide innovative, clean, and energy-efficient solutions for a better tomorrow.

Delta, founded in 1971, is a global provider of power and thermal management solutions. Its mission statement, "To provide innovative, clean and energy-efficient solutions for a better tomorrow," focuses on addressing key environmental issues such as global climate change. As an energy-saving solutions provider with core competencies in power electronics and automation, Delta's business categories include Power Electronics, Mobility, Automation, and Infrastructure.

Headquartered in Taiwan, we regularly invest over 8% of our annual sales revenues in R&D and have worldwide R&D facilities in China, Europe, Japan, Singapore, Thailand, and the U.S.

In response to the challenge of climate change, Delta will remain committed to the research and development of innovative, energy-saving products, solutions and services that contributing substantially to the sustainable development of mankind.



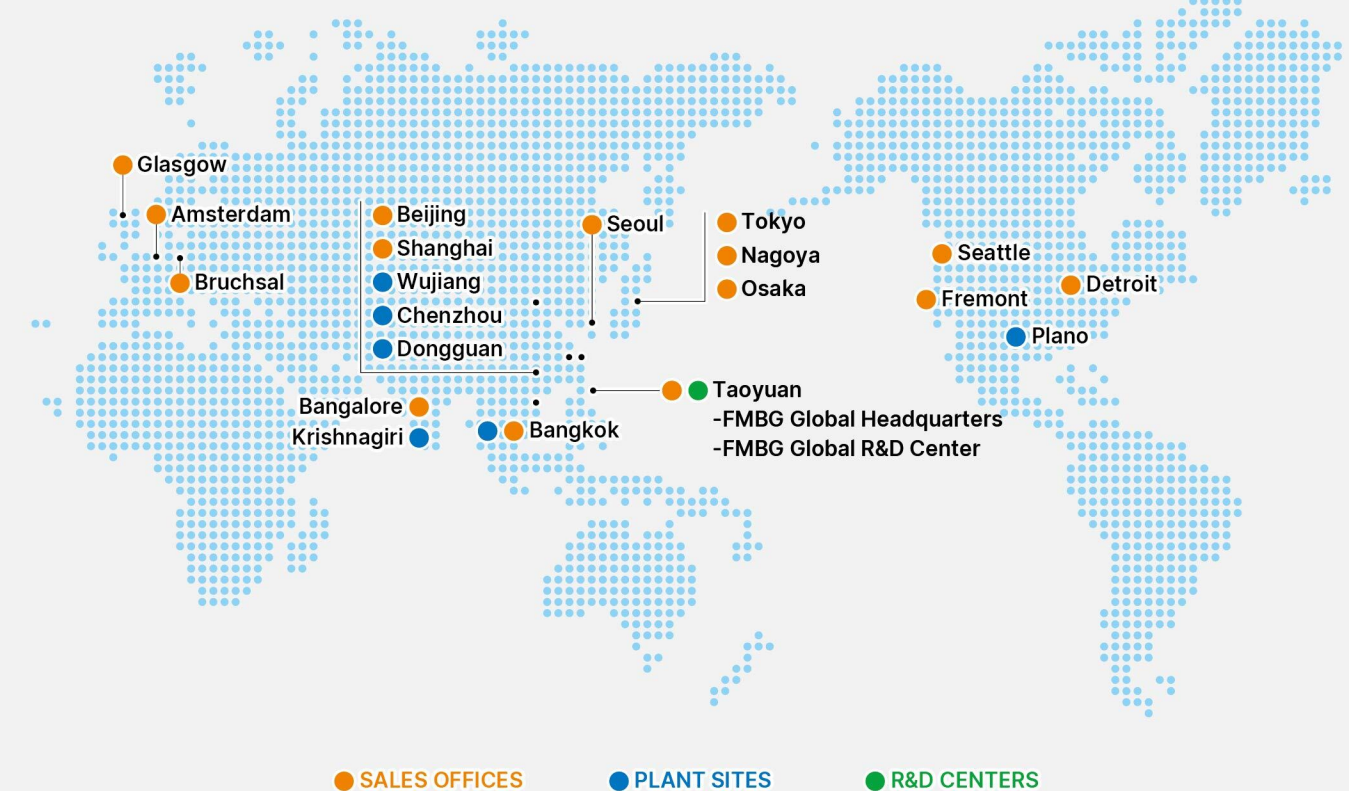
## About FMBG of Delta

Temperature is a crucial variable in mechanical and industrial processes. Appropriate thermal management is critical to maximizing performance and preventing system disruptions. You can eliminate potential failure points in your systems with targeted precision cooling.

But what is thermal management, and how can it protect your business?

In addition to maintaining your system's temperature within its operating range through our air and liquid cooling technology, Delta's cutting-edge thermal electronics solutions allow your business to unlock amazing efficiency gains, reduce energy costs, and maximize performance.

The fan and thermal products have developed high-efficiency and highly reliable solutions, covering air-cooling fans, thermal devices and modules, liquid cooling solutions, and automotive thermal management. Applications include desktop computers, servers, laptops, data centers, cloud devices, communication systems, game consoles, consumer electronics, industrial inverters/motor drivers, vehicle-mounted air-conditioning HVAC, head lamp and seat fans, as well as energy-saving smart ventilation fans, heaters, and ceiling fans for residential use.



# Electrical Pump

In the thermal management market, Delta is well known for fluid-machinery design. By employing advanced computational fluid dynamics (CFD) technology, optimized pumps are successfully engineered and built for our Liquid Cooling Solution. Compared with other companies, Delta's pump outperforms on all fronts with better running performance under a fixed dimension. It is also more compact with close performance.

In 2016, Delta launched our Liquid Cooling Solution line of products for the industrial and consumer industries. We have successfully provided thermal solutions on home battery charging for solar energy products, as well as high-end laser projectors with high-power-density needs. Based on these experiences, Delta developed Liquid Cooling Solution products for the ICT field beginning in 2018, and the cumulative sales of pump already achieved 60,000pcs.

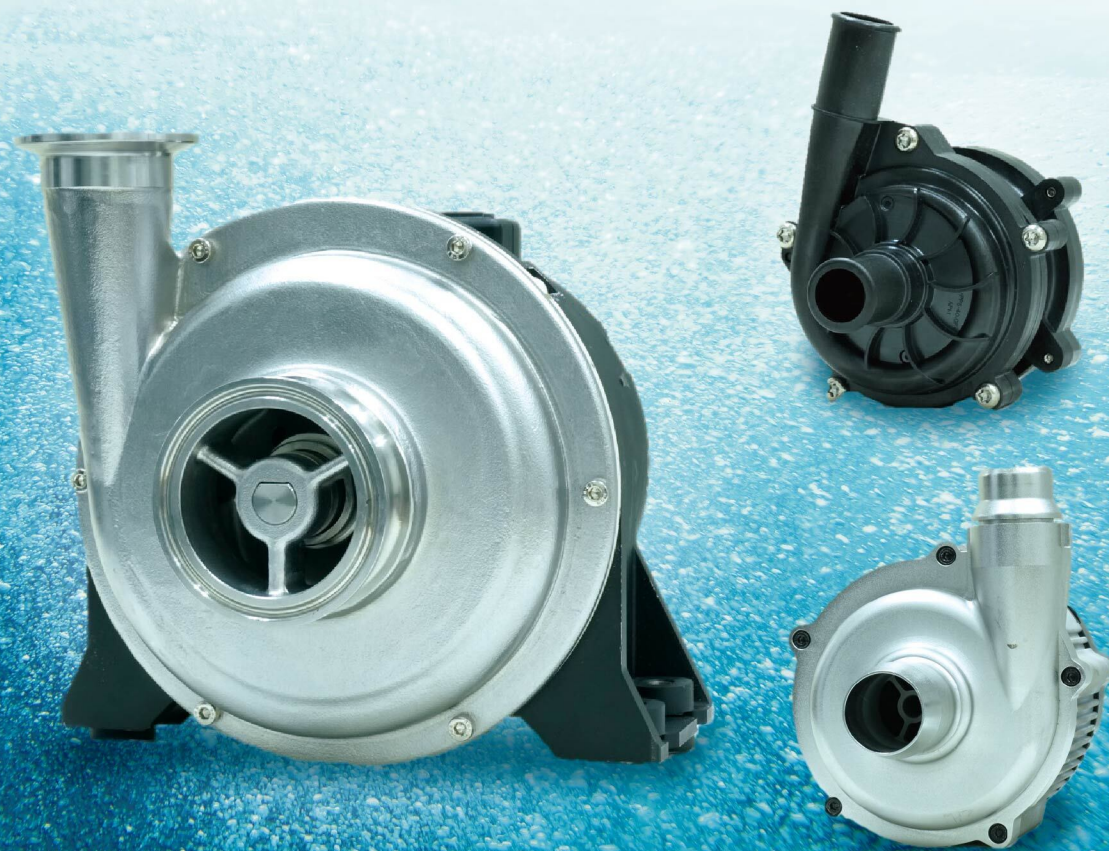
# Features & Benefits

- High performance BLDC pump: BLDC motor can reach over 85% efficiency
- Low noise
- Low vibration
- Light weight: 30% lighter than other market offerings
- Compact size: Easy to fit into the limited space
- High Reliability
- IP56, IP65, IP67, IP69
- Communication: PWM, RS-485 & UART
- CE/ TUV/ UL certified

# Applications

Delta pumps are designed for various applications such as:

- Data Center / AI Server
- Networking
- Telecom
- Energy Storage
- Industrial
- Transportation



# Design Validation Facilities

## Reliability Test

In order to provide the best quality products and highest satisfactions to customers, Delta will execute several laboratory accreditation tests to exam the products' performances, endurances, and adopted robust construction to ensure the high reliabilities of products.

- Low temperature storage & running test
- Temperature cycling running test
- Immunity test-ESD, surge
- Damp heat, steady state, running test
- Thermal shock storage test
- Sinusoidal vibration test (static)
- Random vibration test
- Mechanical shock test (static)
- High temperature life test
- Pressure cycling test
- Power on/off test



Pump PQ Tester



Dust & Sand Tester



Rain tester



Pump Life Tester  
(20 Channels)



Pump Life Tester  
With Ambient Temp.



Thermal Shock Tester



Anechoic Chamber  
ISO 3745



Tensile Strength  
Tester



Heavy Metal Analysis Lab.



Programmable Temp.  
& Humidity Chamber



Combined Cyclic Salt  
Mist Tester



HALT Chamber



Sound Quality Level  
ISO 7779



Salt Mist Tester



Ingress Protection



Mechanical Shock  
Tester



Flow Gas Corrosion



Altitude Tester



EDS



X-ray



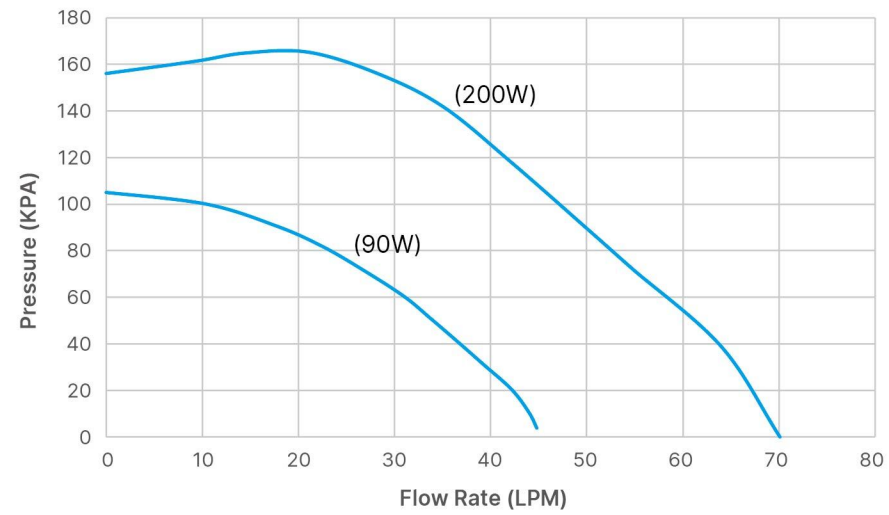
Temperature, Humidity,  
Vibration Combined  
Chamber



Bump Tester

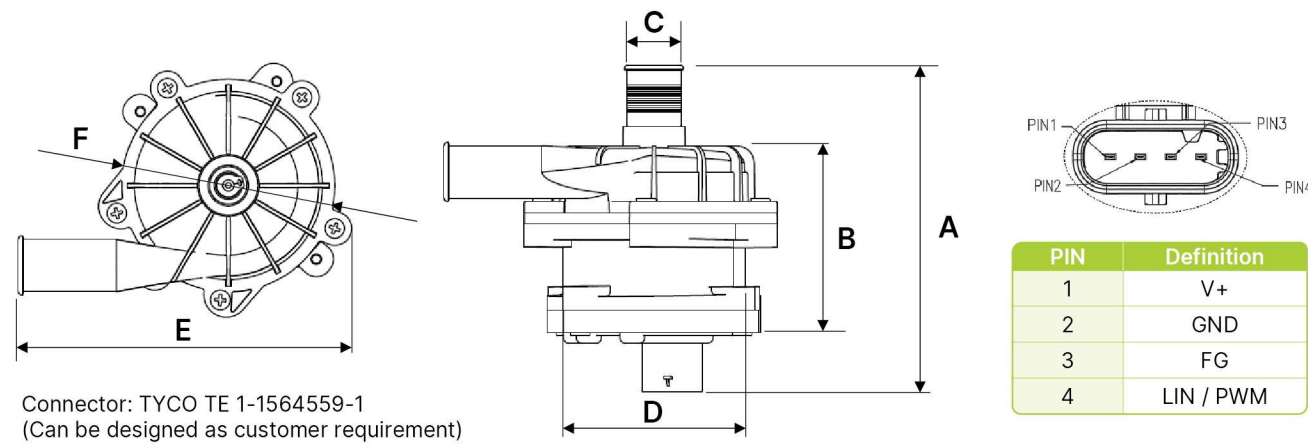
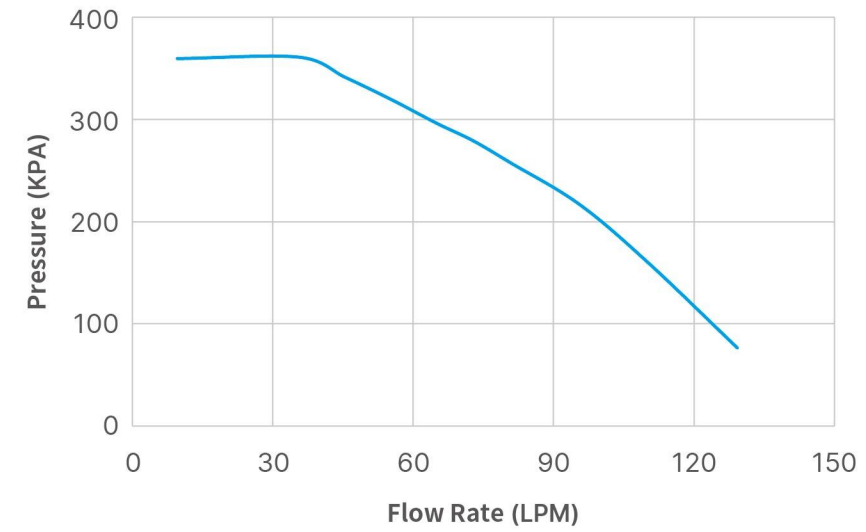
# DC Pump

- 90~200W

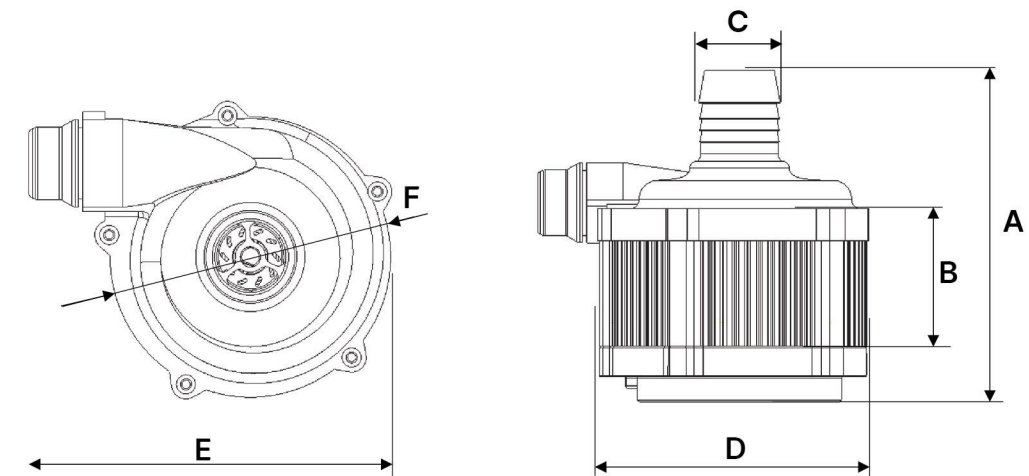


# DC Pump

- 800W



Connector: TYCO TE 1-1564559-1  
(Can be designed as customer requirement)



Model Name	Performance						Dimensions (mm)					
	Voltage (V)	Current (Amp)	Power (W)	Max. Flow Rate (LPM)	Max. Pressure (Kpa)	Weight (gram)	A	B	C	D	E	F
AEP04SC12	12.0	7.5	90	44.8	105.0	450	118.6	63.6	21.1	65.0	114.5	76.0
AEP04SC13	12.0	16.7	200	70.0	156.1	750	125.0	78.8	21.1	65.0	114.5	84.0

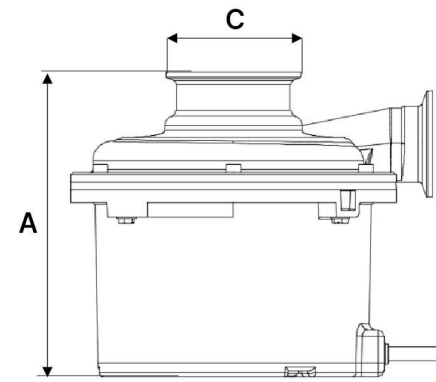
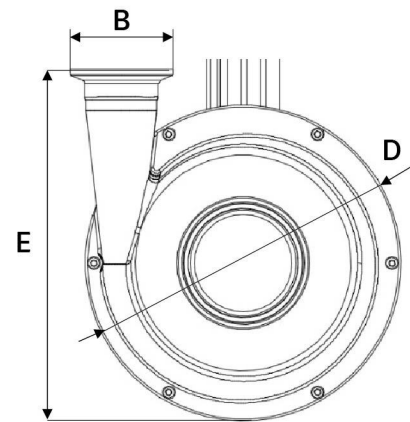
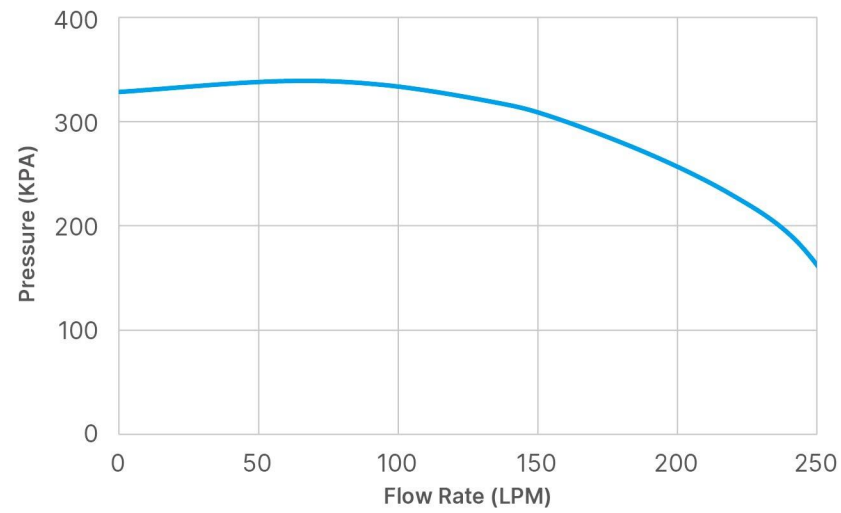
- The max. flow rate and pressure are measured at zero flow pressure
- All reading are typical values at rated voltage
- Specifications are subject to change without notice
- Tested by water
- Sample available

Model Name	Performance						Dimensions (mm)					
	Voltage (V)	Current (Amp)	Power (W)	Max. Flow (LPM)	Max. Pressure (Kpa)	Weight (kg)	A	B	C	D	E	F
AEP07UC15	48.0	19.2	800	129	355	2.5	145.0	59.2	34.9	115.5	142.0	110.0

- The max. flow rate and pressure are measured at zero flow pressure
- All reading are typical values at rated voltage
- Specifications are subject to change without notice
- Tested by PG25 coolant

## DC Pump

- 2000W

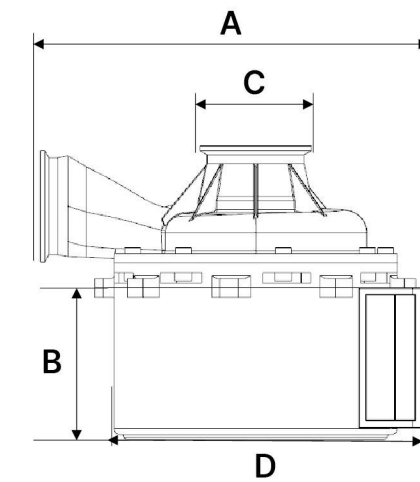
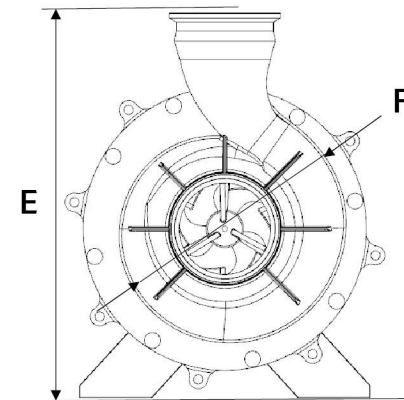
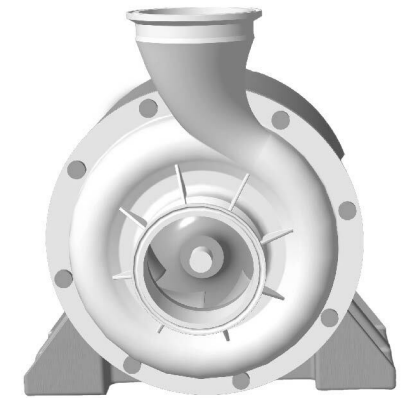
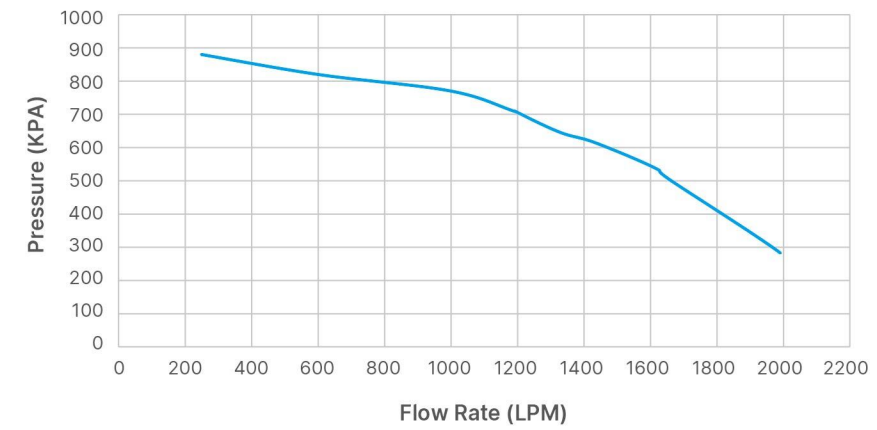


Model Name	Performance						Dimensions (mm)				
	Voltage (V)	Current (Amp)	Power (W)	Max. Flow (LPM)	Max. Pressure (Kpa)	Weight (kg)	A	B	C	D	E
AEP11UC15	48.0	41.6	2000	260	360	6.6	148	50.5(DN32)	64(DN50)	155	172.5

- The max. flow rate and pressure are measured at zero flow pressure
- All reading are typical values at rated voltage
- Specifications are subject to change without notice
- Tested by PG25 coolant

## HVDC Pump

- 20KW



Model Name	Performance					Dimensions (mm)					
	Voltage (V)	Power (W)	Max. Flow (LPM)	Max. Pressure (Kpa)	Weight (kg)	A	B	C	D	E	F
AEP15ZF31	800	20K	2000	900	≈100	313	162	101.4	302	410	261

- The max. flow rate and pressure are measured at zero flow pressure
- All reading are typical values at rated voltage
- Specifications are subject to change without notice
- Tested by PG25 coolant
- Control board is outside of the pump

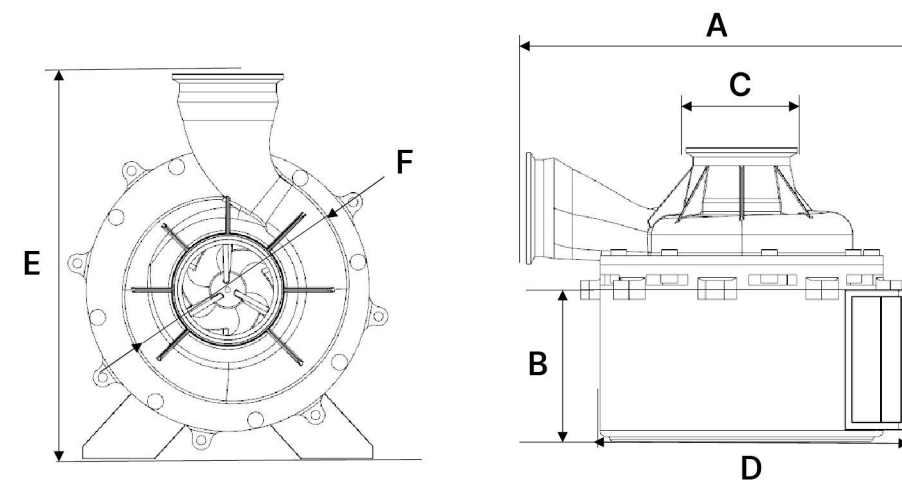
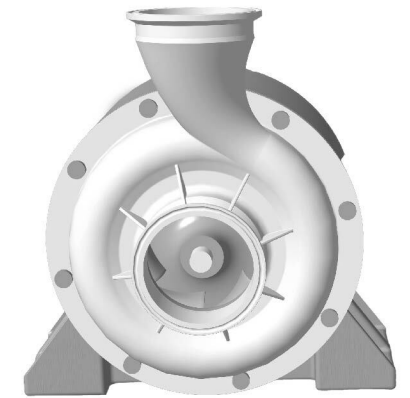
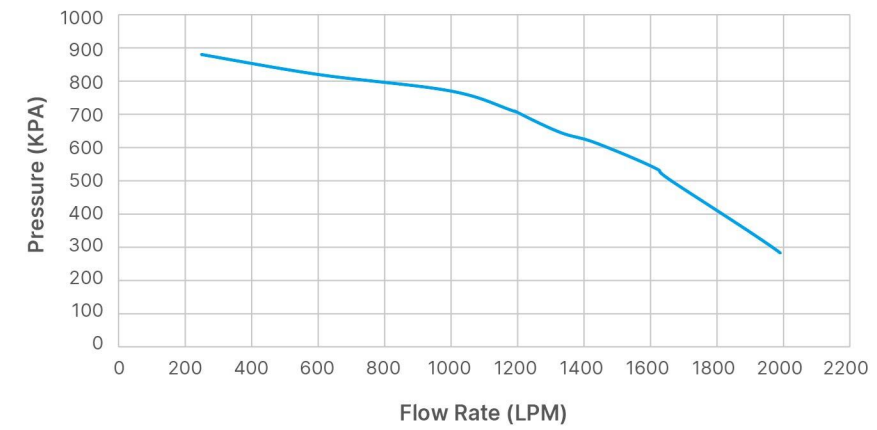
# EC Pump

- Delta EC Pump vs. AC Pump

Electronically Commutated (EC) Pump	Traditional AC Pump
<p>• Motor with higher performance</p> <p>DC motor <math>\eta:90\%</math> AC motor <math>\eta:40\sim60\%</math></p>	
<p>• Higher efficiency of speed Controller</p> <p>AC Voltage Input → Power factor correction(PFC) → PWM Driver → M → <math>\eta:85\%</math></p> <p>AC Voltage Input → Transformer → M → <math>\eta:36\sim54\%</math></p>	
<p>• Higher efficiency of impeller</p> <p>AC Voltage Input → Power factor correction(PFC) → PWM Driver → M → impeller <math>\eta:50\%</math></p> <p>AC Voltage Input → Transformer → M → impeller <math>\eta:22\sim32\%</math></p>	

# EC Pump

- 20KW



Model Name	Performance					Dimensions (mm)					
	Voltage (V)	Power (W)	Max. Flow (LPM)	Max. Pressure (Kpa)	Weight (kg)	A	B	C	D	E	F
AEP15PF31	380~480VAC(3φ)	20K	2000	900	≈100	313	162	101.4	302	410	261

- The max. flow rate and pressure are measured at zero flow pressure
- All reading are typical values at rated voltage
- Specifications are subject to change without notice
- Tested by PG25 coolant
- Control board is outside of the pump

