

TPE3 40-200-S-A-F-I-BUBE

Grundfos Pump 98416540



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<https://www.lenntech.com/grundfos/TPE3SI/98416540/TPE3-40-200-S-A-F-I-BUBE.html>

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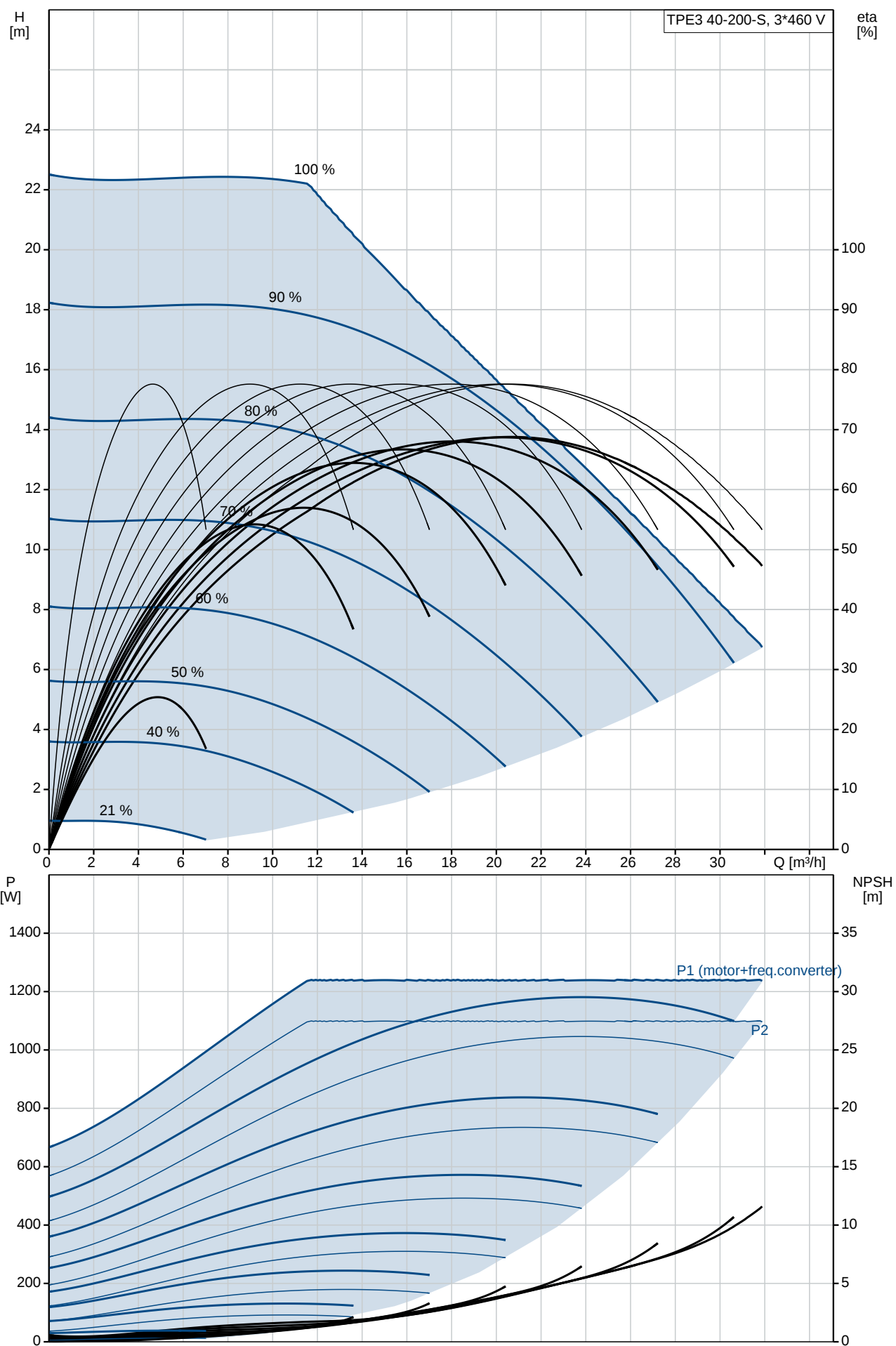
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Position	Qty.	Description
	1	TPE3 40-200-S A-F-I-BUBE  Product No.: 98416540 Single-stage, close-coupled, volute pump with in-line suction and discharge ports of identical diameter. The pump is of the top-pull-out design, i.e. the power head (motor, pump head and impeller) can be removed for maintenance or service while the pump housing remains in the pipework. The shaft seal is according to EN 12756. Pipework connection is via PN 6/10 DIN flanges (EN 1092-2 and ISO 7005-2). The pump is fitted with a fan-cooled, permanent-magnet synchronous motor. The motor includes a frequency converter and PI controller in the motor terminal box. This enables continuously variable control of the motor speed, which again enables adaptation of the performance to a given requirement. The pump is fitted with a combined temperature- and differential-pressure sensor. Further product details The stainless-steel pump housing makes the pump suitable for circulation of hot water. The pump is suitable for applications requiring pressure or temperature control and offers following control modes: - AUTOADAPT. This function continuously adjusts the proportional-pressure curve and automatically sets a more efficient curve without compromising comfort demands. - FLOWADAPT. This control mode combines AUTOADAPT with a flow-limiting function. The pump continuously monitors the flow rate to ensure the desired maximum flow is not exceeded. This will save the cost of a separate pump-throttling valve. - Constant differential pressure. The pump head is kept constant, independent of the flow in the system. - Proportional pressure. The head of the pump will increase proportionally to the flow in the system to compensate for the large pressure losses in the distribution pipes. - Constant temperature. The return-pipe temperature is kept constant. Note: If the pump is intalled in the flow pipe, an external temperature sensor must be installed in the return pipe of the system. - Constant differential temperature. The differential temperature can be measured by a differential-temperature sensor or two separate temperature sensors. - Constant curve. The pump can be set to run at a constant speed in the range of 25 to 100 % of the maximum speed. The control panel on the motor terminal box features a four inch TFT display, push-buttons and the Grundfos Eye indicator. The display gives an intuitive and user-friendly interface to all functions. The push-buttons are used to navigate through the menu structure to access pump and performance data on site and enable setting of required setpoint as well as setting of pump to "Min." or "Max." operation or to "Stop". Communication with the pump is also possible by means of the Grundfos GO Remote (accessory). The remote control enables further settings as well as reading out of a number of parameters such as "Actual value", "Speed", "Power input" and total "Power consumption". The Grundfos Eye indicator on the control panel provides visual indication of pump status: - "Power on": Motor is running (rotating green indicator lights) or not running (permanently green indicator lights) - "Warning": Motor is still running (rotating yellow indicator lights) or has stopped (permanently yellow indicator lights) - "Alarm": Motor has stopped (flashing red indicator lights). The product's minimum efficiency index (MEI) is greater or equal to 0.70. This is by the Commission Regulation (EU) considered as an indicative benchmark for best-performing water pump available on the market as from 1 January 2013.

Position	Qty.	Description
		Pump Pump housing and pump head are electrocoated to improve the corrosion resistance. Electrocoating includes: 1) Alkaline-based cleaning. 2) Pretreatment with zinc phosphate coating. 3) Cathodic electrocoating (epoxy). 4) Curing of paint film at 200-250 °C.  1: Pump housing 2: Impeller 3: Neck ring 4: Pump head/motor stool 5: Stub shaft The pump housing is provided with a replaceable stainless steel/PTFE neck ring to reduce the amount of liquid running from the discharge side of the impeller to the suction side. The impeller is secured to the shaft with a nut. The pump is fitted with an unbalanced rubber bellows seal with torque transmission across the spring and around the bellows. Due to the bellows, the seal does not wear the shaft, and the axial movement is not prevented by deposits on the shaft. Primary seal: - Rotating seal ring material: Tungsten carbide (WC) - Stationary seat material: Carbon graphite, resin-impregnated This is a widely used material pairing. If the pumped liquid contains particles, wear on the seal faces must be expected. Due to the favourable lubricating properties of carbon graphite, the seal is suitable for use even under poor lubricating conditions, such as hot water. However, under such conditions, wear on the carbon graphite face reduces seal life. Secondary seal material: EPDM (ethylene-propylene rubber) EPDM has excellent resistance to hot water. EPDM is not suitable for mineral oils. The motor stool forms connection between the pump housing and the motor, and is equipped with a manual air vent screw for venting of the pump housing and the shaft seal chamber. The sealing between motor stool and pump housing is an O-ring. The central part of the motor stool is provided with guards for protection against the shaft and coupling. The pump stub shaft is fastened directly on the motor shaft with key and set screws. Motor The motor is a totally enclosed, fan-cooled motor with principal dimensions to IEC and DIN standards. Electrical tolerances comply with IEC 60034. The motor efficiency is classified as IE5 in accordance with IEC 60034-30-2. The motor requires no external motor protection. The motor control unit incorporates protection against slow- and quick-rising temperatures, e.g. constant overload and stalled conditions. The terminal box holds terminals for these connections: - one dedicated digital input - two analog inputs, 0(4)-20 mA, 0-10 V - one configurable digital input or open-collector output - Grundfos combined temperature and differential pressure sensor (separate connected) - 24 V voltage supply for sensors - two signal relay outputs (potential-free contacts) - GENIbus connection - interface for Grundfos CIM fieldbus module.

Position	Qty.	Description
		Technical data Liquid: Pumped liquid: Water Liquid temperature range: 0 .. 120 °C Liquid temperature during operation: 20 °C Density: 998.2 kg/m³ Technical: Speed for pump data: 5000 rpm Rated flow: 20.5 m³/h Rated head: 14.9 m Primary shaft seal: BUBE Curve tolerance: ISO9906:2012 3B Materials: Pump housing: Stainless steel DIN W.-Nr. 1.4308 ASTM CF8 Impeller: Composite PES/PP 30% GF Installation: Range of ambient temperature: -20 .. 50 °C Maximum operating pressure: 10 bar Flange standard: DIN Pipe connection: DN 40 Pressure rating: PN 6/10 Port-to-port length: 250 mm Flange size for motor: 56C Electrical data: Motor type: 80A IE Efficiency class: IE5 Rated power - P2: 1.1 kW Mains frequency: 50 Hz Rated voltage: 3 x 380-500 V Rated current: 2,30-2,05 A Cos phi - power factor: 0,88-0,74 Rated speed: 480-5900 rpm Efficiency: 88,5% Enclosure class (IEC 34-5): IP55 Insulation class (IEC 85): F Others: Minimum efficiency index, MEI ≥: 0.7 ErP status: EuP Standalone/Prod. Net weight: 26 kg Gross weight: 33.5 kg Shipping volume: 0.1 m³

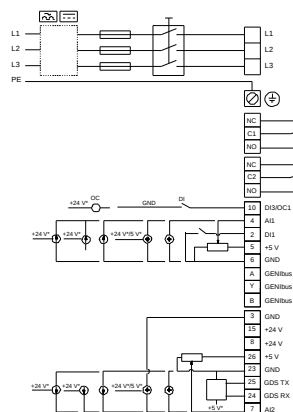
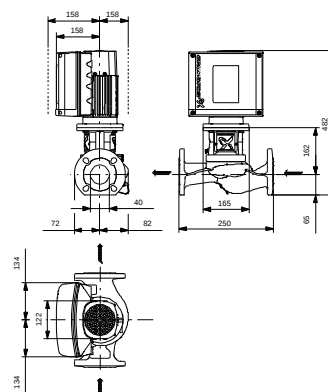
98416540 TPE3 40-200-S 50 Hz



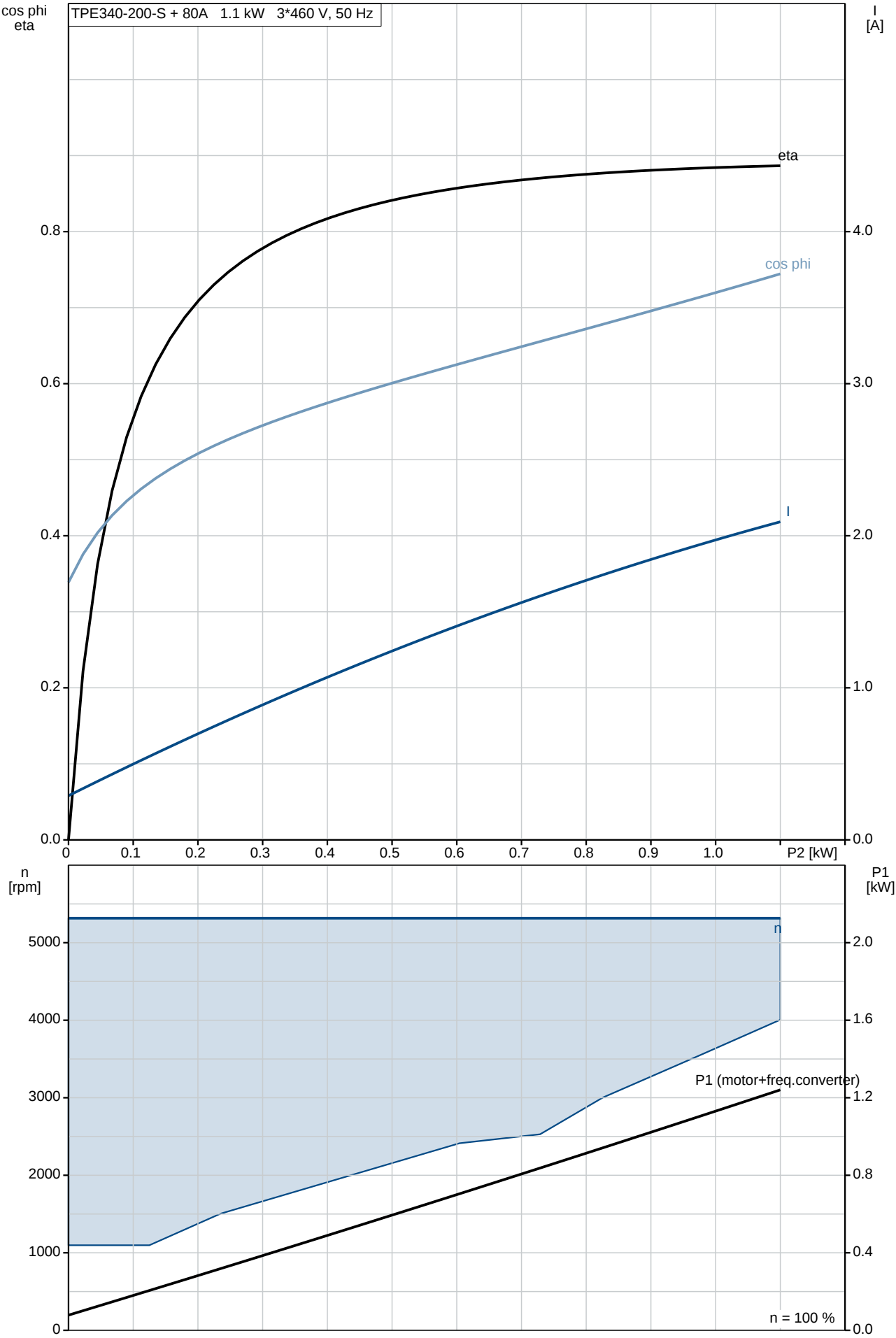
The figure consists of two vertically stacked graphs sharing a common x-axis representing flow rate Q in m^3/h , ranging from 0 to 30.

The top graph plots head H in meters (left y-axis, 0 to 24) and efficiency η in percent (right y-axis, 0 to 100). It shows a series of curves for efficiency levels of 21%, 40%, 50%, 60%, 70%, 80%, 90%, and 100%. A light blue shaded area represents the operational head range. The 100% efficiency curve starts at $H \approx 22.5$ m and drops to $H \approx 6$ m at $Q = 30$ m^3/h . The 21% efficiency curve is the lowest, starting at $H \approx 1$ m and dropping to $H \approx 0$ m at $Q \approx 5$ m^3/h .

The bottom graph plots power P in Watts (left y-axis, 0 to 1200) and NPSH in meters (right y-axis, 0 to 30). It shows power curves for the same efficiency levels as the top graph. A light blue shaded area represents the NPSH requirement. Two specific power levels are labeled: $P1$ (motor+freq. converter) at approximately 1200 W and $P2$ at approximately 1050 W. The power curves generally increase with flow rate, with higher efficiency levels resulting in higher power consumption for the same flow rate.



98416540 TPE3 40-200-S 50 Hz



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Note! All units are in [mm] unless others are stated.
Disclaimer: This simplified dimensional drawing does not show all details.

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*Disclaimer: The information about the Grundfos pump in this document may be outdated.
Data may be subject to alterations without further notice.
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