PT PELONIS TECHNOLOGIES

EVERLINE®

EV2800 SERIES

UAV PROPULSION MOTORS

FOR MID-POWER COMPACT UAVS

- Inspection
- Mapping & Survey
- Payload
- OEM Development

DEFENSE COMPLIANT

HIGH EFFICIENCY

FULL POWER RANGE

UAV OPTIMIZED

Everline® EV2800 Series motors provide a compact mid-power propulsion platform for inspection, mapping, payload, and commercial UAV applications. The family combines lightweight 2810- and 2812-class architectures with a shared 1100 KV design, supporting efficient propulsion, consistent integration, and scalable platform development.

COMPACT MID-POWER UAV PROPULSION

The EV2800 Series combines lightweight 2810 and 2812-class architectures with a shared 1100 KV design optimized for efficient mid-power UAV propulsion. The family provides scalable propulsion options while maintaining a common integration approach across multiple aircraft platforms.

CONSISTENT 28XX MOTOR PLATFORM

Shared mechanical and electrical characteristics simplify propulsion evaluation, system integration, and platform comparison. Common platform features include a 12N14P configuration, 5 mm shaft diameter, 250 mm cable length, 4S–6S battery compatibility, and 18 AWG (1 mm^2) lead wires, enabling easier comparison between motor options during development.

PERFORMANCE DATA FOR MOTOR SELECTION

Published performance tables provide thrust, power, current, RPM, voltage, and efficiency measurements across multiple tested propeller configurations. This data supports aircraft sizing, propulsion trade-off studies, and preliminary motor selection.

ENGINEERED FOR OEM UAV PROGRAMS

The EV2800 Series can be reviewed for production requirements including alternate KV ratings, cable lengths, connector options, labeling, documentation packages, and application support.

FEATURES & SPECIFICATIONS

- 1100 KV, 2810 and 2812-class motor platforms
- Compact 33.4 mm frame diameter architecture
- 12N14P configuration
- 5 mm shaft diameter
- 4S–6S battery compatibility
- Up to 1,375 W maximum power capability
- Published thrust, power, current, RPM, and efficiency data
- OEM customization and application support available
- Defense-compliant sourcing and program support

APPLICATIONS

- Compact Multirotors
- Inspection UAVs
- Mapping & Survey Platforms
- Payload-Carrying UAVs
- Research & Development Platforms
- OEM Development Programs
- Flight-Test Aircraft
- Industrial & Commercial UAV Systems

Everline® EV2800 Series motors provide a common propulsion architecture that supports efficient platform integration, system evaluation, and scalable UAV development. Shared mechanical and electrical characteristics enable easier comparison between motor options while maintaining a consistent integration approach across multiple aircraft platforms.

For additional information or assistance with your UAV propulsion application, contact Pelonis Technologies.

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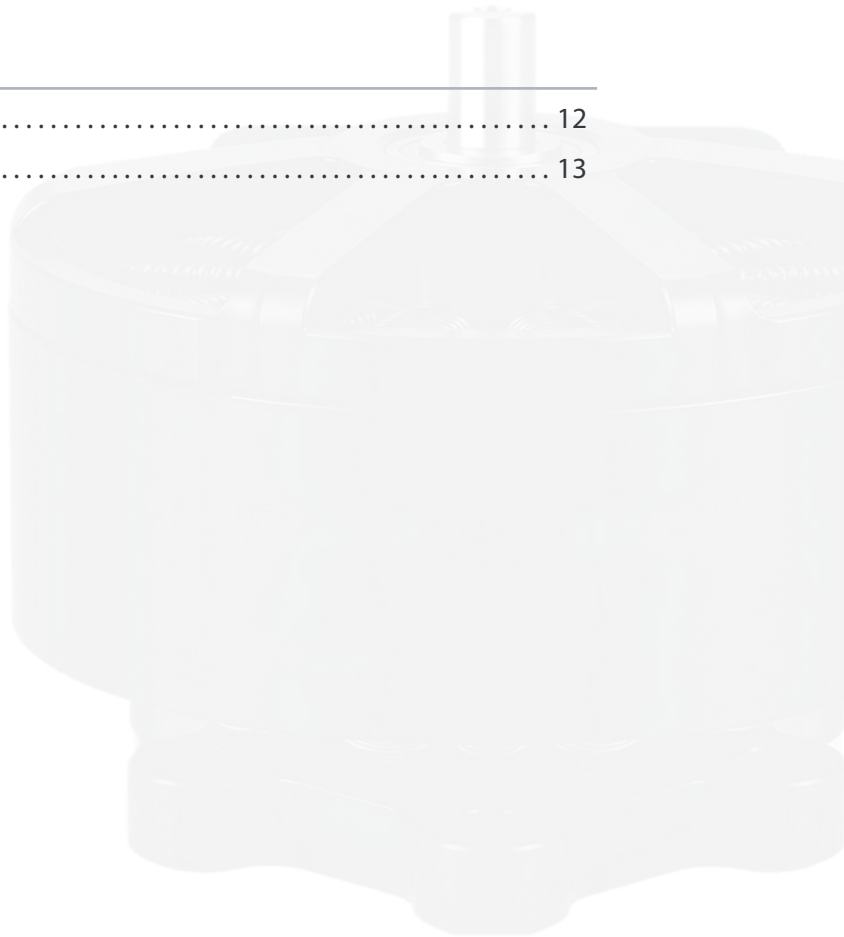

EV2800 SERIES OVERVIEW

The Everline® EV2800 UAV Propulsion Motor Series is built around 2810 and 2812-class motor platforms with 1100 KV propulsion options. This allows UAV OEMs to evaluate compact mid-power propulsion solutions for multirotors, inspection UAVs, mapping platforms, payload-carrying aircraft, research systems, and OEM development programs.

Model Number	KV	Application	Best-Fit Mission	Features
EV2810-1100	1100	Compact Mid-Power UAV	Balanced propulsion for compact multirotors, inspection UAVs, mapping platforms, and OEM development programs.	Lightweight 2810-class platform with published performance data across multiple 4S and 6S propeller configurations.
EV2812-1100	1100	High-Output Compact UAV	Higher-output compact propulsion for payload-focused UAVs, advanced multirotors, and commercial drone platforms.	Higher-output 2812-class platform with published performance data across multiple 4S and 6S propeller configurations.

QUICK REFERENCE & PRODUCT COMPARISONS

Payload / Endurance / Speed Comparisons					
Model Number	Payload Rating	Endurance Rating	Speed Rating	Published Test Coverage	Best-Fit Application
EV2810-1100	★★★★☆	★★★★☆	★★★★☆	Multiple 4S and 6S configurations	Compact Multirotor / Inspection UAV
EV2812-1100	★★★★★	★★★★☆	★★★★☆	Multiple 4S and 6S configurations	Higher-Output UAV

NOTE: Ratings provide relative application guidance based on the overall motor platform and are not determined solely by maximum tested thrust.

Weight / Power / Current / Thrust Comparisons					
Model Number	Weight	Maximum Power	Peak Current	Maximum Tested Thrust	Best-Fit Application
EV2810-1100	70 g	1,250 W	50 A	2,500 g	Compact Multirotor / Inspection UAV
EV2812-1100	78.9 g	1,375 W	55 A	2,486 g	Higher-Output UAV

NOTE: Maximum thrust values are based on tested operating conditions and should not be directly compared without considering aircraft design, battery selection, propeller selection, airflow conditions, and ESC configuration.

MISSION-BASED MOTOR SELECTION GUIDE

Primary and alternate EV2800 recommendations by UAV application.

UAV Mission	Primary Motor	Alternate Motor	Why This Fit	Propeller & Data Notes
Compact Multirotor	EV2810-1100	EV2812-1100	Balanced output for compact UAV platforms.	Multiple 4S and 6S propeller performance Datasheets available for evaluation.
Inspection UAV	EV2810-1100	EV2812-1100	Compact platform for inspection and evaluation programs.	Lightweight 70 g platform helps minimize aircraft weight.
Mapping & Survey Platforms	EV2810-1100	EV2812-1100	Mid-power propulsion for stable commercial UAV operation.	Multiple tested propeller configurations support mapping and survey propulsion evaluation.
Payload-Carrying UAVs	EV2812-1100	EV2810-1100	Higher-output option for payload-focused aircraft.	10 × 4.5 × 2 reference delivers up to 2,100 g thrust.
Research & Development Platforms	EV2810-1100	EV2812-1100	Multiple data sets support development testing.	Multiple tested propeller references support engineering comparisons.
OEM Development Programs	EV2812-1100	EV2810-1100	Higher power margin for OEM platform evaluation.	Up to 1,375 W power capability and 55 A peak current.

RECOMMENDATION:
Start with aircraft size, weight, mission profile, battery selection, propeller envelope, and performance requirements. Then consider one primary EV2800 motor and one alternate motor for engineering evaluation and propulsion testing.

ENGINEERING OVERVIEW

The Everline® EV2800 Series uses 2810 and 2812-class motor platforms with a shared 1100 KV architecture. Published performance data allows UAV OEMs to evaluate compact mid-power propulsion solutions while maintaining a consistent family-level design approach across inspection, mapping, payload, and commercial UAV applications.

Common Platform Attributes	EV2810-1100	EV2812-1100
Stator Class	2810	2812
KV	1100 KV	1100 KV
Dimensions	33.4 × 38 mm	33.4 × 40 mm
Configuration	12N14P	12N14P
Shaft Diameter	5 mm	5 mm
Weight	70 g	78.9 g
Cable Length	250 mm	250 mm
Cells	4S–6S	4S–6S
Maximum Rated Speed	30,100 RPM	29,100 RPM
Idle Current (20 V)	1.8 A	1.4 A
Maximum Rated Power	1,250 W	1,375 W
Peak Current	50 A	55 A
Resistance	52 mΩ	53.4 mΩ
Lead Wires	18 AWG (1 mm^2)	18 AWG (1 mm^2)

Model Number	KV	Relative Role	Technical Comments
EV2810-1100	1100	Balanced Compact	Lightweight platform optimized for compact UAV applications.
EV2812-1100	1100	Higher-Output	Higher-output platform with expanded thrust capability.

NOTE: Both EV2800 motors share a common 1100 KV architecture and 4–6S operating range. Selection should be based on aircraft size, payload requirements, propeller envelope, and desired thrust performance.

EV2810-1100

Mid-Power Compact UAV Propulsion Motor

The EV2810-1100 is a compact propulsion solution for multirotors, inspection UAVs, mapping platforms, and OEM development programs requiring balanced weight, thrust, and efficiency performance.

Applications

- Compact multirotors
- Inspection UAVs
- Mapping & survey platforms
- Research & development platforms
- OEM development programs

SPECIFICATIONS	
Part Number	: EV2810-1100
Stator Size	: 2810
KV	: 1100 KV
Dimensions	: 33.4 × 38 mm (1.31 × 1.5 in)
Configuration	: 12N14P
Shaft Diameter	: 5 mm
Weight	: 70 g
Cable Length	: 250 mm
Cells	: 4S–6S
Maximum Rated Speed	: 30,100 RPM
Idle Current (20 V)	: 1.8 A
Maximum Rated Power	: 1,250 W
Peak Current	: 50 A
Resistance	: 52 mΩ
Lead Wires (AWG)	: 18 AWG (1 mm^2)

* For detailed specifications and motor performance curves, please refer to the complete product specification sheet.

EV2812-1100

Higher-Output Compact UAV Propulsion Motor

The EV2812-1100 is a high-output propulsion solution for payload-focused UAVs, advanced multirotors, flight-test aircraft, and OEM development programs requiring expanded thrust capability.

Applications

- Payload-focused UAV designs
- Advanced multirotors
- Inspection and industrial UAV systems
- Flight-test aircraft
- OEM development programs

SPECIFICATIONS	
Part Number	: EV2812-1100
Stator Size	: 2812
KV	: 1100 KV
Dimensions	: 33.4 × 40 mm (1.31 × 1.57 in)
Configuration	: 12N14P
Shaft Diameter	: 5 mm
Weight	: 78.9 g
Cable Length	: 250 mm
Cells	: 4S–6S
Maximum Rated Speed	: 29,100 RPM
Idle Current (20 V)	: 1.4 A
Maximum Rated Power	: 1,375 W
Peak Current	: 55 A
Resistance	: 53.4 mΩ
Lead Wires (AWG)	: 18 AWG (1 mm^2)

* For detailed specifications and motor performance curves, please refer to the complete product specification sheet.

PROPELLER SELECTION GUIDE

The EV2800 Series has been tested across multiple propeller and battery configurations to support UAV propulsion evaluation, aircraft optimization, and propulsion-system development. This guide provides a quick-reference overview of recommended motor and propeller combinations based on application objectives. Detailed thrust, RPM, current, power, efficiency, and performance curve data are available in the individual propeller performance Datasheets. Recommendations are intended for preliminary configuration screening and should be validated through application-specific aircraft testing.

RECOMMENDED CONFIGURATIONS

Mission Profile	Recommended Configuration	Maximum Tested Thrust
High-Speed / Compact UAV	EV2810-1100 + 6 × 2.5 × 3 @ 6S	1,493 g
Agile UAV / Flight Testing	EV2810-1100 + 6 × 3.5 × 3 @ 6S	1,839 g
General-Purpose UAV	EV2810-1100 + 7 × 4 × 3 @ 6S	2,346 g
Inspection & Mapping UAV	EV2810-1100 + 7.1 × 4 × 3 @ 6S	2,500 g
Endurance / Utility UAV	EV2810-1100 + 7.5 × 4 × 2 @ 6S	2,139 g
Payload-Carrying UAV	EV2812-1100 + 8 × 4 × 3 @ 4S	1,600 g
Heavy-Lift Compact UAV	EV2812-1100 + 9 × 4 × 3 @ 4S	1,782 g
Maximum 4S Lift Capability	EV2812-1100 + 10 × 4.5 × 2 @ 4S	2,100 g

* Maximum thrust values shown are based on published bench-test performance data.

PROPELLER CLASS GUIDELINES

Propeller	Typical Use Case
6-Inch Class	High-speed UAVs, agile multirotors, flight-test platforms
7-Inch Class	General-purpose UAVs, inspection systems, mapping aircraft
8-Inch Class	Payload-capable UAVs, commercial multirotors
9-Inch Class	Heavy-lift compact UAVs, utility applications
10-Inch Class	Maximum lift capability and payload-focused platforms

NOTE: The EV2800 Series propulsion platform includes performance data across multiple tested motor, propeller, and battery configurations covering compact high-speed propulsion, inspection and mapping aircraft, payload-carrying UAVs, and heavy-lift applications. Detailed propeller performance Datasheets include measured thrust, RPM, electrical power, current, efficiency, and normalized performance curves for engineering evaluation and propulsion-system optimization. Additional configurations, including higher-thrust EV2812-1100 test results, are documented in the individual propeller performance Datasheets.

Detailed Propeller Performance Datasheets Available Upon Request

Motor, Propeller & Battery Test Configurations • 4S & 6S Testing • Thrust, RPM, Current, Power & Efficiency Data

OEM CUSTOMIZATION OPTIONS

The Everline® EV2800 UAV Propulsion Motor Series can be evaluated as standard parts and then reviewed for production program requirements, including customization, documentation, integration support, and support for Pelonis Technologies' thermal management solutions, including Air-G Micro Fans, Air-G Micro Blowers, and Ultra-Thin Flexible Heaters. The EV2800 platform is built around 2810 and 2812-class motor architectures with 1100 KV configurations optimized for commercial UAV, inspection, mapping, payload, and OEM development applications.

Customization	Description
KV / winding review	Custom winding requirements or alternate KV targets for production programs.
Cable length	Customer-specific lead length requirements.
Connector options	Connector termination preferences for OEM assemblies.
Mounting review	Evaluate mounting requirements subject to feasibility review.
Documentation package	Provide datasheets, performance tables, drawings, and application notes for design review.
Prototype-to-production support	Support prototype evaluation, quotation development, and production planning.
Thermal system review	Battery heating, ESC cooling, avionics cooling, electronics cooling, and payload thermal management.
Defense program support	Supply chain, documentation, and application review support for government and defense UAV programs.

INTEGRATED UAV THERMAL MANAGEMENT SOLUTIONS

An integrated UAV subsystem solution combines compact propulsion, battery thermal management, avionics cooling, and payload cooling into a unified platform designed to enhance performance, reliability, and mission endurance. Everline® EV2800 Series UAV Motors provide efficient propulsion, while Ultra-Thin Flexible Heaters help maintain optimal battery temperatures in cold environments, supporting improved energy efficiency and operational readiness.

Air-G Micro Fans deliver targeted cooling for avionics, flight-control electronics, communication systems, and electronic speed controllers (ESCs), while Air-G Micro Blowers provide focused airflow for cameras, sensors, AI processors, and other mission-critical payloads. Together, these technologies help improve thermal management, protect sensitive electronics, extend component life, and support reliable operation across industrial, inspection, mapping, payload, security, defense, and compact UAV applications.

Product Area	UAV Use Cases	Customer Benefits
Everline® EV2800 Propulsion Motors	Compact multirotors, inspection UAVs, mapping platforms, payload-carrying UAVs, and OEM development programs.	Compact mid-power propulsion platform for UAV OEMs.
Ultra-Thin Flexible Heaters	Battery warming, avionics heating, camera/payload heating, cold-weather operation.	Supports reliability in cold or variable environments.
Air-G Micro Fans	Flight computer cooling, electronics bay airflow, payload electronics cooling.	Supports compact UAV electronics thermal control.
Air-G Micro Blowers	Directed ESC cooling, sensor cooling, avionics and communications equipment cooling.	Provides focused airflow for payloads, sensors, and avionics in compact areas.

This diagram is for illustrative purposes only. Actual component placement, cooling architecture, and thermal-management strategies may vary depending on UAV platform, payload configuration, battery selection, and mission requirements.

GLOSSARY

Terms and Definitions.

TERM	DEFINITION
KV	Motor speed constant. Higher KV generally supports higher RPM and faster propeller speeds.
Thrust	Measured motor + propeller force under stated test conditions.
Efficiency	Grams of thrust per watt in the supplied performance table.
ESC	Electronic speed controller used to drive the BLDC motor.
RPM	Revolutions per minute; a measure of motor rotational speed.
BLDC	Brushless DC motor technology commonly used in UAV propulsion systems.
12N14P	Motor configuration consisting of 12 stator slots and 14 rotor poles.
4S–6S	Recommended battery cell range for the EV2800 platform.
Diameter × Pitch × Number of Blades	Standard propeller format. Example: 10 × 4.5 × 2 indicates a 10-inch diameter, 4.5-inch pitch, two-blade propeller.
UAV	Unmanned aerial vehicle, including multirotor, inspection, mapping, payload, and research aircraft.
LiPo	Lithium Polymer battery technology commonly used in UAV power systems.
Payload	Mission-specific equipment carried by the UAV, including sensors, cameras, communications equipment, and specialized systems.
Propeller Reference	Specific propeller configuration used during published performance testing.
Torque	Rotational force generated by the motor. Torque helps determine the motor's ability to drive propellers under load.
Compact UAV	UAV platform designed around smaller propulsion systems where weight, efficiency, and integration space are important.
OEM	Original equipment manufacturer integrating Everline motors into its own UAV platform.

NOTES:

INNOVATION IN MOTION

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