KURCHS

10-INCH LONG-ENDURANCE PROPULSION

3115 900KV

Brushless Drone Motor

A bench-tested 12N14P motor developed for commercial multirotors, mapping platforms and VTOL airframes that need stable output through long flight cycles.

N52H Magnets | Class H Copper | 108 g



MAXIMUM THRUST	PEAK EFFICIENCY	BATTERY CONFIGURATION	MOTOR MASS
4,066 g	**7.07 g/W**	**6S**	**108 g**
100% throttle / GF1050×3	20% throttle test point	1.2 A no-load current	Ø37.5 × 29.7 mm body

Performance values are factory dynamometer results at 25°C. Aircraft results vary with propeller, battery, ESC and airframe configuration.

PRODUCT SPECIFICATIONS

The essential numbers, in one place.



SELECTED CONFIGURATION

12N14P / 900KV

Three KV configurations are available on the same 3115 platform. This page focuses on the 900KV version.

MAXIMUM TEST POWER

1,527 W

65 A maximum current reference.

STATOR SIZE

Ø31×15

Compact stator with high slot-fill winding.

MOTOR MODEL	Kurchs 3115	CONFIGURATION	12N14P / 900KV
MOTOR DIMENSIONS	Ø37.5 × 29.7 mm	STATOR DIMENSIONS	Ø31 × 15 mm
WEIGHT	108 g	BATTERY CONFIGURATION	6S
NO-LOAD CURRENT	1.2 A	MAXIMUM CURRENT	65 A
MOUNTING INTERFACE	M3 / 19 × 19 mm	RECOMMENDED PROPELLER	GF1050×3

Basic parameters are based on the 3115 production specification. Performance values are separately verified in the KV test data.

MEASURED PERFORMANCE

Three KV versions. One test setup.

COMPARED PROFILES	DATA MODE	THROTTLE RANGE
3	KV comparison	10-100%

Thrust comparison

Same propeller and ambient test condition across all three KV values.



Efficiency comparison

Peak efficiency appears at the low-to-mid throttle range for all versions.



700KV max: 3,419 g | 740KV max: 3,542 g | 900KV max: 4,066 g | 700KV peak: 7.08 g/W | 740KV peak: 7.01 g/W | 900KV peak: 7.07 g/W

Current comparison

Measured current draw through the supplied throttle range.



700KV max: 48.52 A | 740KV max: 53.69 A | 900KV max: 64.66 A

Power comparison

Measured input power stays aligned with each plotted test point.



700KV max: 1,148.91 W | 740KV max: 1,270.82 W | 900KV max: 1,526.50 W

KV SELECTION MATRIX

One platform. Three working profiles.

700KV

PEAK EFFICIENCY **7.08 g/W** | AT THROTTLE **20%**
MAX THRUST **3,419 g** | 100% TEMPERATURE **73.0 °C**

740KV

PEAK EFFICIENCY **7.01 g/W** | AT THROTTLE **20%**
MAX THRUST **3,542 g** | 100% TEMPERATURE **65.9 °C**

900KV

FEATURED

PEAK EFFICIENCY **7.07 g/W** | AT THROTTLE **20%**
MAX THRUST **4,066 g** | 100% TEMPERATURE **64.4 °C**

KV	Throttle	Voltage	Current	Thrust	RPM	Power	Efficiency	Temp.
700KV	50%	23.95 V	7.43 A	1,026 g	7,418	177.97 W	5.76 g/W	38.4 °C
	70%	23.87 V	19.80 A	1,967 g	10,165	472.60 W	4.16 g/W	40.0 °C
	90%	23.75 V	37.82 A	2,958 g	12,316	898.25 W	3.29 g/W	55.6 °C
	100% - PEAK	23.68 V	48.52 A	3,419 g	13,184	1,148.91 W	2.98 g/W	73.0 °C
740KV	50%	23.95 V	8.44 A	1,105 g	7,710	202.21 W	5.47 g/W	26.5 °C
	70%	23.86 V	22.51 A	2,117 g	10,552	537.16 W	3.94 g/W	33.0 °C
	90%	23.73 V	42.03 A	3,086 g	12,649	997.35 W	3.09 g/W	50.3 °C
	100% - PEAK	23.67 V	53.69 A	3,542 g	13,434	1,270.82 W	2.79 g/W	65.9 °C
900KV SELECTED	50%	23.95 V	9.68 A	1,245 g	8,114	231.86 W	5.37 g/W	27.7 °C
	70%	23.84 V	25.90 A	2,373 g	11,100	617.53 W	3.84 g/W	33.9 °C
	90%	23.68 V	50.08 A	3,550 g	13,413	1,185.89 W	2.99 g/W	49.9 °C
	100% - PEAK	23.61 V	64.66 A	4,066 g	14,221	1,526.50 W	2.66 g/W	64.4 °C

Test propeller: GF1050×3 for all 12 rows.

Selected operating range: 50% and 70% are shown as normal working points; 100% is peak reference only.

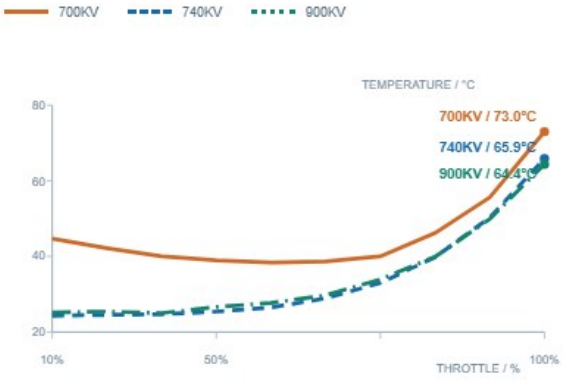
ENGINEERING ANSWERS

Designed around real flight problems.

TEMPERATURE DEVELOPMENT

64.4°C measured

The 900KV version reached 64.4°C at 100% throttle in a 25°C bench test. The chart also shows how the 700KV and 740KV versions developed temperature through the same throttle range.



50% THROTTLE	70% THROTTLE
27.7°C	33.9°C

01

HEAT ACCUMULATION

Long missions cannot rely on peak cooling.

High slot-fill Class H copper reduces winding resistance and limits unnecessary heat build-up through sustained operation.

Verified: 27.7°C at 50%, 33.9°C at 70%, 64.4°C at 100%.

02

VIBRATION UNDER LOAD

Stable rotation starts with balance.

CNC rotor bell construction and matched precision bearings support smooth rotation and reduce unnecessary vibration in the rotating assembly.

Construction notes: 7075 rotor bell and matched bearings.

03

CURRENT PATH RELIABILITY

Power delivery should remain repeatable.

Insulated leads, stable magnetic circuit design and controlled winding geometry support consistent current delivery through throttle changes.

Tested from 10% through 100% with measured voltage, current and power.

04

EFFICIENCY LOSS AT PEAK

Peak thrust is not the only useful number.

Efficiency reaches 7.07 g/W at 20% throttle, giving buyers a realistic comparison against the 2.66 g/W full-throttle point.

Efficiency is shown across both the efficient band and the full-throttle limit.

STRUCTURE AND FIT

Every layer has a functional role.



01 / ROTOR

CNC Rotor Bell and Top Plate

7075 aluminum construction with a machined, balanced rotor assembly.

02 / STATOR

Stator and N52H Magnets

12N14P Class H copper winding paired with curved high-flux magnets.

03 / BASE

CNC Base Flange

M3 / 19 × 19 mm mounting interface for repeatable airframe alignment.

04 / BEARING

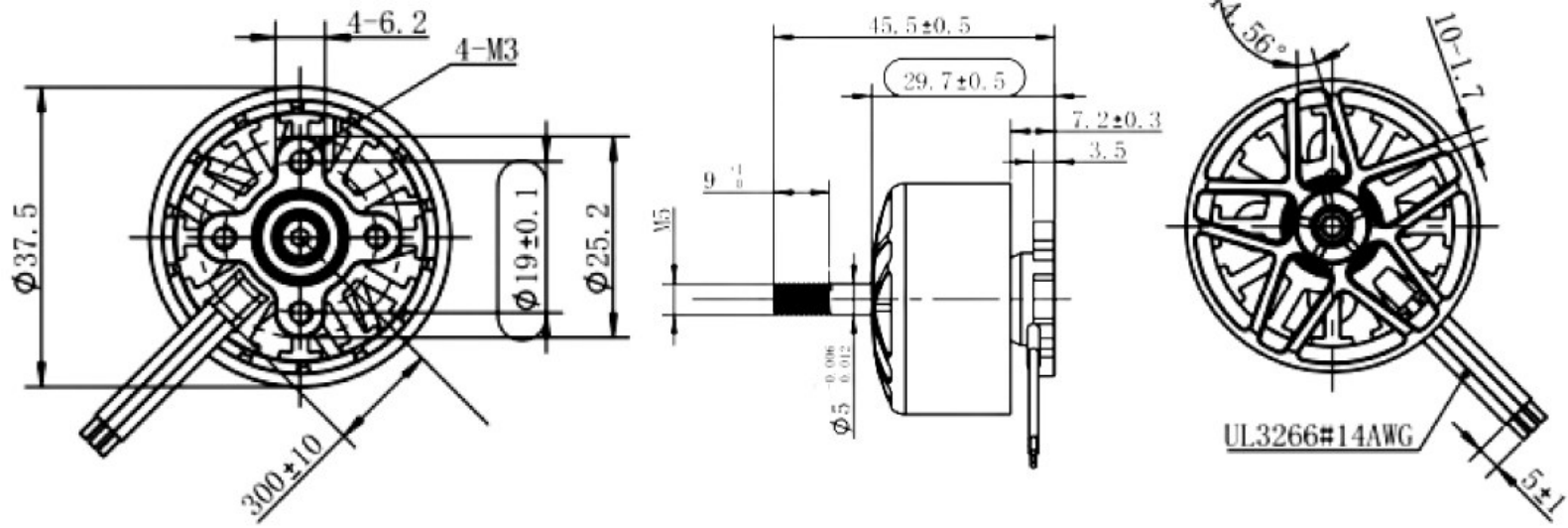
Precision Bearing Stack

Matched bearings support low-friction rotation and stable shaft alignment.

05 / FASTENER

Grade 12.9 Screw

High-strength screw keeps the rotor stack locked and correctly aligned.



BODY SIZE	MOUNT PATTERN	MOTOR MASS
Ø37.5 × 29.7 mm	**M3 / 19 × 19 mm**	**108 g**

COMPONENT CLOSE-UPS

The motor is the sum of its interfaces.



01 / WINDING

Class H Copper Stator

12N14P hand-wound stator with high slot fill for low heat and stable efficiency.



02 / STRUCTURE

CNC Rotor Bell

7075-T6 aluminum construction with tight-tolerance machining and balance control.



03 / MAGNETISM

N52H Curved Magnets

High-flux arc magnets positioned on the inner rotor wall for torque and thrust.



04 / ROTATION

High-Speed Bearings

Low-friction precision bearings support smooth high-RPM operation.



05 / INSTALLATION

CNC Base Flange

M3 / 19 × 19 mm interface for secure, repeatable airframe mounting.



06 / FASTENING

Grade 12.9 Cap Screw

High-strength fastening maintains rotor-stack alignment and serviceability.



COMPANY PROFILE

Who We Are

Kurchs is a professional manufacturer of drone brushless motors, integrating R&D, precision machining, assembly and testing. Focused on the power motor industry, we continuously improve product quality with a full in-house production chain from component machining to finished motor delivery.

Our factory covers brushless motor production, CNC machining, wire harness and injection molding, supporting stable supply for global commercial and industrial UAV customers.

R&D & Design | Precision Machining | Assembly & Testing | OEM / ODM

OEM / ODM CUSTOMIZATION

Adapt the platform to your airframe.

Customization scope

KV and winding	700KV, 740KV and 900KV configurations are available on the same 12N14P platform.
Shaft and mount	Review M3 / 19 × 19 mm interface requirements for your airframe.
Dimensions and weight	Base platform: Ø37.5 × 29.7 mm and 108 g.
Power setup	6S, 1.2 A no-load current, 65 A maximum current reference.
Engineering files	Dyno report and STEP / IGES files available on request.

Custom projects can be reviewed against airframe weight, propeller, battery voltage and target thrust.

5-stage engineering workflow

01 Requirements Confirmation
Airframe, propeller, voltage and target thrust are defined.

02 Drawing and Material Review
Mounting, winding and mechanical requirements are reviewed.

03 Sample Making
Evaluation samples are prepared for fit and performance testing.

04 Dyno Verification
Thrust, current, RPM, power and efficiency are checked.

05 Batch Production
Approved specifications move into scheduled production.

QUALIFICATION AND DELIVERY

Compliance and shipping without guesswork.



CE / EMC



CE / LVD



RoHS

Certificate documents are available for destination-specific compliance review.



Air Freight and Express

Prototype and urgent-order delivery via international express or air freight.



Ocean Freight

FCL or LCL planning for volume production orders.



Land and Railway

Cross-border multimodal delivery where the route is available.

SOURCING QUESTIONS

The final checks before sampling.

Which propeller and battery should I pair with 900KV?

The dynamometer test configuration uses GF1050×3 on a 6S battery. Final selection depends on airframe weight, thrust target and flight time.

Can I compare other KV versions?

Yes. The 700KV, 740KV and 900KV versions are listed with identical throttle points in section 04.

What sample and engineering files are available?

Evaluation samples are planned at 5-7 business days. Dyno data and STEP / IGES files are available within 24 hours after confirmation.

What is the OEM / ODM MOQ?

Evaluation samples are available from 1-4 units. Custom OEM / ODM production starts at 50 units.

What data is shown for each KV version?

Section 04 lists measured voltage, current, thrust, RPM, power, efficiency and temperature at 50%, 70%, 90% and 100% throttle.

Which dimensions should be checked before installation?

Confirm the Ø37.5 × 29.7 mm body envelope, 108 g mass and M3 / 19 × 19 mm mounting interface against the airframe.