

产品与服务

朱雀一号（固体）

ZQ-1 Three-staged Solid Propellant Engine Launcher

火箭级数：3 级

The Stage of Rocket: Three stages

发动机推进组合：丁羟四组元

Engine Propulsion Combination: HTP-4

运载能力：200kg@500km SSO

Payload capability:200kg@500km SSO

全箭总长：19 m

Total Length:19m

箭体直径：1300mm

Diameter:1300 mm

起飞质量：27t

Lift-off Mass: 27t

起飞推力：45t

Lift-off Thrust: 45t

朱雀二号（80T）

ZQ-2 Two-staged LRE Launcher

优势：推进剂无毒无污染，甲烷燃料成本低廉,将来可扩展为可重复使用火箭

Advantage: Eco-friendly: low carbon emission, nontoxic, pollution-free, reusable

性能指标

Performance Index:

两级液体火箭

Two-staged Liquid Rocket

直径：3350mm

Diameter: 3350mm

长度：48.8m

Total Length:48.8m

起飞重量：216 t

Lift-off Mass: 216t

起飞推力：268t

Lift-off Thrust: 268t

运载能力：1800kg@500km SSO

1500kg@700km SSO

4000kg @200km LEO

Launch Capacity: 1800kg@500km SSO

1500kg@700km SSO

4000kg @200km LEO

发射服务

我们基于ZQ-1/ZQ-2运载火箭提供发射服务综合解决方案
中小型运载火箭的研制
发射基地协调与运作
测控支持与协调
保险安排

Land Space will provide the systematic launch service solution based on ZQ-2 launcher

1. Small/medium launchers R&D
2. Launch site coordination & operations
3. TT&C support and coordination
4. Insurance placement

ZQ-2用户接口

有效载荷包络（整流罩尺寸、有效容积、适配器设计策略等）

整流罩尺寸和有效载荷可用空间：见下图1：

载荷适配器设计策略：与所有主流S/C适配器兼容。

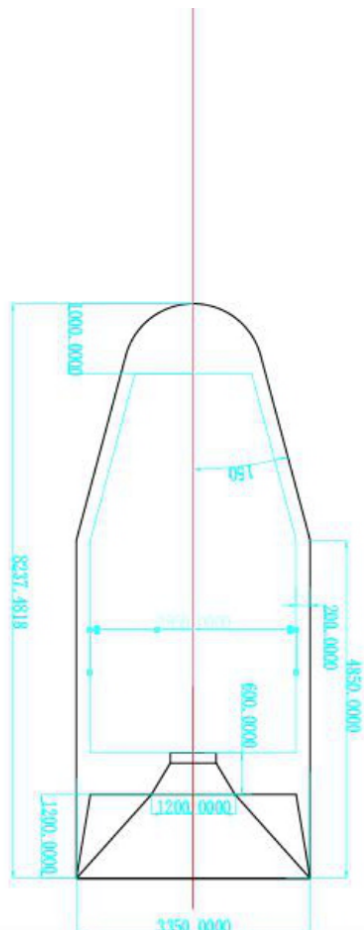
根据客户的要求，ZQ-2运载火箭使用国际标准适配器类型，如937B、1194/1194A和 ϕ 660mm夹带分离系统与卫星接口，也可按照用户需求对其进行调整，以适应用户指定的卫星分离系统（如 ϕ 400mm）。蓝箭航天提供适应于各种非标准有效载荷接口的技术服务。

Payload envelope (fairing dimensions, useful volume, adapter design policy, etc)

Fairing dimensions and Useful volume: See Figure 2 below:

Adapter design policy: Compatible with all main stream S/C adapters.

Per customer request, ZQ-2 launch vehicle uses the international standard adapter types as 937B, 1194/1194A, and ϕ 660mm clamp band separation system to interface with the satellites, which can be modified to accommodate satellite standard separation systems (e.g., ϕ 400mm) as well. Requests for accommodation of any non-standard payload interface can also be accommodated through technical coordination with LANDSPACE.



: Figure 1 ZQ-2 Payload Fairing (With Cutaway)

Table 4 ZQ-2 Main Technical Data of Payload Fairing

ZQ-2 整流罩的主要参数

参数	性能指标
Maximum Diameter 最大直径	3.35m
Height 高度	8.237m
Mass 质量	1200kg
Structure 结构	Two shells- Glass coating +Aluminum Alloy frame structure 两壳-玻璃涂层+铝合金框架结构
Separation 分离系统	Explosive Bolt Connection, Rotational Separation 爆炸螺栓连接, 旋转分离

ZQ-2载荷入轨精度

ZQ-2可达到较高的人轨精度。具体的人轨精度取决于不同任务类型和有效载荷。

最低目标轨道入轨精度:

- 半长轴偏差: $\Delta a \leq 5\text{km}$
- 倾角偏差: $\Delta i \leq 0.02$
- 偏心偏差: $E \leq 0.002$

Payload Injection Accuracy

The design of ZQ-2 is aiming at repairing the trajectory deviation to achieve a high orbital injection accuracy. Injection accuracy will be mission dependent and reliant on the payload. LANDSPACE will ensure the following minimum target orbital insertion accuracy:

- Semi-major Axis Deviation: $|\Delta a| \leq 5\text{km}$
- Inclination Deviation: $|\Delta i| \leq 0.02$
- Eccentricity Deviation: $e \leq 0.002$

ZQ-2入轨分离姿态精度

ZQ-2提供一系列轨道部署方向选项, 包括惯性、轨道相对和太阳指向。表3给出了典型的ZQ-2有效载荷预分离姿态角精度和角速度精度。

Typical Pre-Separation Attitude and Spin-Rate Accuracy

The separation attitude is selected by the satellite mission planners to satisfy payload requirements. ZQ-2 provides a range of deployment direction options, including inertial, orbit-track-relative, and sun-pointing. Table 3 provides the typical ZQ-2 payload pre-separation attitude angle accuracy and angular velocity accuracy.

典型的预分离有效载荷指向和旋转率精度

Typical Pre-separation Payload Pointing and Spin Rate Accuracy

Parameter	Angle	Rate
Roll deviation	$\leq 0.7^\circ$	$\leq 0.3^\circ/\text{s}$
Pitch deviation	$\leq 1.5^\circ$	$\leq 1.0^\circ/\text{S}$
Yaw deviation	$\leq 1.5^\circ$	$\leq 1.0^\circ/\text{s}$

参数	角度	速率
滚动轴	$\leq 0.7^\circ$	$\leq 0.3^\circ / \text{s}$
俯仰轴	$\leq 1.5^\circ$	$\leq 1.0^\circ / \text{S}$
偏航轴	$\leq 1.5^\circ$	$\leq 1.0^\circ / \text{s}$

机械接口

蓝箭航天为有效载荷提供多种常见的机械接口配置。ZQ-2标准有效载荷适配器（PAF）用于与分离系统的接口。根据客户的要求，PAF也可以进行定制化设计，以适应其他特定的卫星分离系统。非标准有效载荷接口的要求应在任务规划过程尽早提出。

LANDSPACE offers a number of common industry mechanical interface arrangements for payloads, with most common attachment patterns and bolt circles accommodated. The standard Payload Attachment Fitting (PAF) of ZQ-2 is designed to interface with separation system. Per customer request, the PAF design can be modified to accommodate other specific satellite separation systems like bolt connection, requests for accommodation of any non-standard payload interface should be made early in the mission planning process.

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