

中国民用航空局
CIVIL AVIATION ADMINISTRATION OF CHINA

型号合格证数据单
TYPE CERTIFICATE DATA SHEET

编号/No.: TC0059A-DB

版次/Revision: 4

型别/Model: RX1E-S

批准人/Approved By:


日期/Date: 2025年12月22日

本数据单是型号合格证（编号：TC0059A-DB）的组成部分，它规定了符合中国民用航空局的适航要求所颁发此型号合格证的产品的状态和限制。

This data sheet, which is part of Type Certificate(No: TC0059A-DB), prescribes condition and limitation under which the product for which the Type Certificate was issued meets the airworthiness requirements of the Chinese Civil Aviation Regulation.

型号合格证持有人/
Type Certificate Holder:

2025年12月22日前/
Before 22, December
2025:

零重力航空科技（沈阳）有限公司/ Zero-Gravity Aerospace Technology
(Shenyang) Co., Ltd.
辽宁省沈阳市通用航空产业基地/ General Aviation Industry Base, Shenyang
City, Liaoning Province
邮政编码: 110167/ Postcode: 110167

辽宁通用航空研究院/ Liaoning General Aviation Academy
辽宁沈阳道义经济开发区道义南大街37号/ No. 37 Daoyi South Avenue, Daoyi
Development District, Shenyang, Liaoning Province
邮政编码: 110136/ Postcode: 110136

有效页清单/ List of effective pages:

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RX1E-S型飞机（轻型运动类），2021年12月31日批准 / Model RX1E-S (Light Sport Aircraft), Approved
December 31, 2021

1 运行类别和使用限制/Type of Operation and Operating Limitations

运行类别/Type of Operation	昼间非特技目视飞行/Day VFR Non-Aerobatic Operation Only
允许机动/Allowed Maneuver	正常飞行中遇到的任何机动/All Normal Flight Maneuvers 失速/Stalling 坡度不大于60°的缓8字飞行、急上升转弯和急转弯/ Lazy Eight, Chandelles and Steep Turns in which the angle of bank is not more than 60 degrees.
禁止机动/Prohibited Maneuver	故意的尾旋/Intentional Spinning

2 重量平衡/Weight and Balance

最大起飞重量/Maximum Take-off Weight	650kg
最大着陆重量/Maximum Landing Weight	650kg
飞机重心测量基准面/ Measuring Datum Plane of Aircraft C. G.	过左右机翼根部前缘作垂直于X轴的平面/ The Datum Plane is a plane which is normal to the aircraft's X axis and on which the root leading edges of the left and right wing are (1720mm from origin of body axis) .
重心前限/Most Forward C. G.	飞机重心测量基准面后267.36mm (27%MAC) /267.36mm After The Measuring Datum Plane of Aircraft C. G.
重心后限/Most Rearward C. G.	飞机重心测量基准面后293.4mm (30%MAC) /293.4mm After The Measuring Datum Plane of Aircraft C. G.

3 电力装置数据/Electric Power-plant Data

电动机制造商/Electric Motor Manufacturer	辽宁通用航空研究院		
电动机型号/ Electric Motor Model	A60K234		
控制器构型/ Controller Configurations	构型 I / Configuration I	构型 II/ Configuration II	
控制器制造商/Controller Manufacturer	Unitek Co. Ltd.	湖南力行动力科技有限公司	
控制器型号/Controller Model	Bamocar PG D3	tDriver-FM8	
锂电池构型/ Li-ion Battery Configurations	构型 I / Configuration I	构型 II/ Configuration II	构型 III/ Configuration III
锂电池制造商/ Li-ion Battery Pack Manufacturer	荣盛盟固利新能源 科技有限公司 /Rise Sun MGL	荣盛盟固利新能源 科技有限公司 /Rise Sun MGL	江苏正力新能电池 技术股份有限公司 /Jiangsu Zenergy Battery Technologies Group Co.,Ltd TP Li 30.51-343.68
锂电池型号/ Li-ion Battery Pack Model	MDEP3550802	MDEP3451002	
锂电池总容量/ Li-ion Battery Pack Capacity	28.4kWh	34.56kWh	28.03kWh
锂电池标称电压/ Li-ion Battery Pack Nominal Voltage	350V	345V	339.8V
锂电池满充电状态电压/ Li-ion Battery Pack Voltage in 100% SoC	398V	412.8V	408V

锂离子电池允许最低电压/ Li-ion Battery Pack Lower Limit Voltage	240V	240V	240V
起飞操纵/Take-off Operation			

电动机最大转速限制/Electric Motor Maximum Power RPM Limit	2600rpm
电动机最大功率时间限制/Electric Motor Maximum Power Time Limit	90s
电动机最大起飞功率/ Electric Motor Maximum Take-off Power	80kW
电动机最大连续功率/ Electric Motor Maximum Continuous Power	60kW

温度限制/Temperature Limitations

控制器最高工作温度（内部）/Controller Maximum Operating Temperature（Inside）	80℃
电动机最高工作温度/ Electric Motor Maximum Operating Temperature	140℃
锂离子电池最高工作温度/ Li-ion Battery Maximum Operating Temperature	60℃

4 螺旋桨数据/Propeller Data

制造商/Manufacturer	沈阳斯塔娜航空科技有限公司 /宜昌斯塔娜航空科技有限公司 /ShenYang Sterna Aero Tech.Ltd./YiChang Sterna Aero Tech.Ltd. PROC03-68
型别/Model	PROC03-68
螺旋桨数量/桨叶数量/ Propeller Number /Blades Number	1/3
直径/Diameter	1730mm
材料/Material	碳纤维（Carbon Fiber）
桨距/Pitch	1250mm
螺旋桨最大转速/Maximum Propeller Rotational Speed	2600rpm

5 性能概述/Summary of Performance

不可超越速度 V_{NE} /Never Exceed Speed V_{NE}	160 km/h
最大机动速度 V_A /Maximum Maneuvering Speed V_A	150 km/h
扰流板展开时最大速度 V_{SP} / Maximum Spoiler Extended Speed V_{SP}	120 km/h
失速速度 V_{S1} /Stalling Speed V_{S1}	82 km/h
起飞或着水时最大侧风速度/ Maximum Demonstration Crosswind Strength for Take-off or Landing	4m/s

5.1 起飞距离/Take-off Distance

起飞滑跑距离/Take-off Run Distance	235m
越过15米高度的起飞距离/Take-off Distance to Clear a 15m Obstacle	459m

5.2 着水距离/Landing Distance

着水滑跑距离/Landing Run Distance	207m
从15米高度着水距离/Landing Distance from 15 m above Ground	640m

5.3 使用升限/Service Ceiling

海拔/A.S.L. 3000m

6 操纵面偏度/Control Surface Movements

升降舵/Elevator	上偏/ Up	30°(±1°)	下偏/ Down	20°(±1°)
副翼/Aileron	上偏/ Up	25°(±1°)	下偏/ Down	25°(±1°)
方向舵/Rudder	左偏/Left	25°(±1°)	右偏/ Right	25°(±1°)

7 操纵面配平/Control Surface Balancing

操纵面/Control Surface	铰链力矩限制/Limiting Hinge Moment
方向舵/Rudder	6.58kg · m
升降舵/Elevator	3.34kg · m
副翼/Aileron	2.94kg · m

8 飞机尺寸/Aircraft Dimensions

机长/Length	6.781m
机高/High	2.937m
翼展/Wingspan	14.495m
平均气动弦长/Mean Aerodynamic Chord	0.868m
机翼面积/Wing Area	12m ²

9 最小飞行机组/Minimum Flight Crew

1 名飞行员/1 Pilot.

10 制造序列号/ Manufacturer's Serial Numbers:

30006 及以后。/30006 and up.

机型相关数据/ DATA PERTINENT TO MODELS

1 机体详细数据/Airframe Details

类型/Type	上单翼, 牵引式螺旋桨/High Wing, Traction Propeller
座椅数/Number of Seats	2
结构材料/Structure Material	复合材料/Composite
起落装置/Landing Gear	双浮筒/Double float
增阻装置/High Drag Device	扰流板/Spoiler
纵向操纵/Longitudinal Control	升降舵/Elevator
航向操纵/Directional Control	方向舵/Rudder
横向操纵/Lateral Control	副翼/Ailerons
水面操纵/Steering on the Water	可操纵水舵/Steerable Water rudder

2 水平测量方法/Leveling Means

纵向/Longitudinal	将气泡式水平仪置于垂直安定面下方的水平边缘上/ Place the bubble level on the lower horizontal edge of vertical stabilizer.
横向/Lateral	从距左、右机翼外露根弦330mm处的前缘点各吊一铅锤, 然后测量左右机翼各自该前缘点到地面的距离, 两者距离值相等或两者距离差值在5mm内是可以接受/Suspend plumbs respectively and symmetrically at the leading edge points of the left and right wings. The distance between the plumb and the exposed root chord

is 330mm. Measure the heights from the suspending points to the ground. It is acceptable that the difference between 2 heights is less than or equal to 5mm.

3 审定基础/ Certification Basis

CCAR21.26 “型号合格证的颁发：轻型运动类航空器”使用 2015 年 2 月 6 日颁发的《轻型运动航空器适航管理政策指南》(AC-21-AA-2015-25R1)中的相关规定表明 CCAR21.26 的符合性。根据该咨询通告的规定，其适航要求为下述的 ASTM 标准：/CCAR21.26"issuance of Type Certificate: Light Sports Aircraft" uses the relevant provisions in the 《Airworthiness management policy guide for Light Sport Aircraft》(AC-21-AA-2015-25R1) issued on February 6, 2015, indicating CCAR21 26 compliance. According to the provisions of the Advisory Circular, the airworthiness requirements are the following ASTM standards:

(a) 适用的 ASTM 标准/ Applicable ASTM Standards

ASTM F2245-20	轻型运动飞机设计和性能标准规范/ Standard Specification for Design and Performance of a Light Sport Airplane;
ASTM F2972-14e1	轻型运动飞机制造商质量保证系统标准/ Standard Specification for Light Sport Aircraft Manufacture's Quality Assurance System;
ASTM F2295-10	轻型运动飞机持续运行安全监控标准实施/ Standard Practice for Continued Operational Safety Monitoring of a Light Sport Aircraft;
ASTM F2483-12	轻型运动飞机维修通则和维修手册编制标准实施/ Standard Practice for Maintenance and the Development of Maintenance Manuals for Light Sport Aircraft;
ASTM F2506-13	轻型运动飞机螺旋桨设计和试验标准规范/ Standard Specification for Design and Testing of Light Sport Aircraft Propellers;
ASTM F2746-14	轻型运动飞机驾驶员操作手册 (POH) 标准规范/ Standard Specification for Pilot's Operating Handbook(POH) for Light Sport Airplane;
ASTM F2840-14	轻型运动飞机电力推进系统设计与制造标准/ Standard Practice for Design and Manufacture of Electric Propulsion Units for Light Sport Aircraft;
ASTM F3035-13	固定翼轻型运动飞机生产接收标准/ Standard Practice for Production Acceptance in Manufacture of a Fixed Wing Light Sport Aircraft.

(b) 等效安全/Equivalent Safety Findings

无/None

(c) 专用条件/Special Conditions

SC-LSA-F2840-001 《RX1E 系列电动飞机动力锂电池专用条件》/SC-LSA-F2840-001 《Special conditions for RX1E series of Lithium-ion batteries for electric power aircraft》

(d) 豁免/Exemptions

无/None

4 设备/ Equipment

适用的适航规章（见审定基础）所要求的基本设备必须安装在航空器上以满足型号合格审定的要求。
/The basic required equipment prescribed in the applicable airworthiness regulations (see Certification Basis) must be installed in the airplane.

使用CAAC批准的《RX1E-S双座水上电动飞机飞行员使用手册》（RX1E-S-12SM001A，或后续批准版）。/CAAC approved Pilot's Operating Handbook RX1E-S, Document No. RX1E-S-12SM001A, or later approved revision.

飞行员使用手册所要求的设备和标牌必须安装在飞机上。/Equipment and placards required by Pilot's Operating Handbook must be installed on the aircraft.

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