

型号认可证数据单

THE VALIDATION DATA SHEET

编号/No: VTC0355A

版次/Revision:

型号/Type:

VULCANAIR V1.0

批准人/Approved By:

徐超群

职务/Title:

日期/Date: 2018 年 12 月 28 日

本数据单是型号认可证(编号: VTC0355A)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认可证的产品的状态和限制。

This data sheet, which is part of Validation of Type Certificate (No: VTC0355A), 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.

型号认可证持有人/Validation of Type Certificate Holder:

VULCANAIR S.p.A.
Via Giovanni Pascoli,7
80026 - Casoria (Napoli)
ITALY

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第 1 部分总则（所有型别）

SECTION 1 General (ALL MODELS)

1. CAAC 认可数据单和型号合格证数据单

CAAC Validation Data Sheet and Type Certificate Data Sheet

	中国民用航空局认可数据单号、版次和颁发日期 CAAC Validation Data Sheet Number, Revision and issuance date	型号合格证数据单号、版次和颁发日期 Type Certificate Data Sheet Number, Revision and issuance date
当前/ Current	VTC0355A, December 28,2018, Rev 0	EASA.A.613 Issue 5, 26,OCT, 2017
历史/ History		

2. 适航类别/Airworthiness Category: 实用类航空器/Utility Category Aeroplane

3. 认可当局/Validation Authority: 中国民用航空局/CAAC
审定当局/Certifying Authority: 欧洲航空安全局/EASA

4. 型号合格证持有人/Type Certificate Holder: VULCANAIR S.p.A.
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5. 认可审定基础/Validation Certification Basis

CAAC 的认可审定基础由 EASA 的审定基础（详见 EASA 型号合格证数据单：编号 EAS.A.613），和 CAAC 的附加技术条件组成。

The CAAC validation certification basis consists of the EASA certification basis (refer to EASA Type Certificate Data Sheet No.EASA.A.613), and the CAAC additional technical conditions.

第 2 部分/SECTION 2: VULCANAIR V1.0

I. 总则/General

- | | |
|--------------------------------------|---|
| 1. 型号/Model: | VULCANAIR V1.0 |
| 2. 适航类别/Airworthiness Category: | 实用类飞机/Utility Category Aeroplane |
| 3. 型号合格证持有人/Type Certificate Holder: | VULCANAIR S.p.A.
Via Giovanni Pascoli, 7
80026 - Casoria (Napoli)
ITALY |
| 4. EASA 批准日期/EASA Approved Date: | 2013.11.20/20 Nov. 2013 |
| 5. CAAC 批准日期/CAAC Approved Date: | 2018.12.28/28.Dec.2018 |

II. 认可审定基础/Validation Certification Basis

CAAC的认可审定基础由EASA的审定基础和CAAC的附加技术条件组成。

The CAAC validation certification basis consists of the EASA certification basis and the CAAC additional technical conditions.

EASA 审定基础/EASA certification basis

详见EASA型号合格证数据单EASA.A.613（版本 5）中的VULCANAIR V1.0 型别的审定基础。/
Refer to EASA Type Certificate Data Sheet No. EASA.A.613 Issue 5.

中国民用航空局附加技术条件/CAAC Additional Technical Conditions

交付到中国的每一架 VULCANAIR V1.0 飞机须满足下述附加技术条件：

Each of Model VULCANAIR V1.0 aircraft delivered to China shall meet the following Additional Technical Conditions:

(1) 依据 CCAR21.29 (五) 有关适航规章、噪声规定所要求的手册、标牌、目录清单和仪表标记应当用中文或英文书写，下列各项应当至少有中文表述：

- 1) 机上所有对旅客进行的提示、警告和通知的文字标记和标牌；
- 2) 机上所有向旅客或者机外营救人员指示应急出口和门的位置以及开启方法的文字标记和标牌；
- 3) 旅客可能使用的机上所有应急设备的操作、使用说明。

As per CCAR 21.29(5), The manuals, placards, listings and instrument markings required by the applicable airworthiness regulation, noise requirement are presented in Chinese or English language. Below items must be at least in Chinese language.

- 1) All literal markings and placards on the aircraft used for indicating, warning and informing passengers;
- 2) All literal markings and placards on the aircraft used for indicating to passengers or outboard rescue personnel of the location of emergency exits and doors and their means of opening;
- 3) The operation and usage instructions for emergency equipment which passengers will use.

(2) 依据 CCAR23.2 的特别追溯要求：

- 1) 凡在 1986 年 12 月 12 日以后生产的，乘员最多不超过 9 人（不包括驾驶员）的每一正常类、实用类和特技类飞机，或者是进入中国的同类外国飞机，必须在每个向前或向后的座椅上装有安全带和肩带，以保证当受到本部第 23.561(b)(2)规定的极限静载荷系数所对应的惯性载荷时，乘员头部不受到严

重损伤。或在第 23.562 条适用于该飞机的情况下，按该条的要求对乘员提供保护。对于其他方向的座椅，该座椅和约束系统的设计，必须与安装有安全带和肩带的向前或向后座椅具有同等保护乘员的水平。

- 2) 凡按照本条要求在飞行机组座位上安装的肩带，应使机组成员在就座并系好安全带和肩带的情况下，执行飞行操纵所必需的所有动作。

According CCAR 23.2 Special retroactive requirements.

- 1) Each normal, utility, and acrobatic category airplane having a passenger seating configuration, excluding pilot seats, of nine or less, manufactured after December 12, 1986, or any such foreign airplane for entry into China must provide a safety belt and shoulder harness for each forward- or aft-facing seat which will protect the occupant from serious head injury when subjected to the inertia loads resulting from the ultimate static load factors prescribed in 23.561(b)(2) of this part, or which will provide the occupant protection specified in 23.562 of this part when that section is applicable to the airplane. For other seat orientations, the seat/restraint system must be designed to provide a level of occupant protection equivalent to that provided for forward- or aft-facing seats with a safety belt and shoulder harness installed. And,
- 2) Each shoulder harness installed at a flight crewmember station, as required by this section, must allow the crewmember, when seated with the safety belt and shoulder harness fastened, to perform all functions necessary for flight operations.

- (3) CCAR-23-R3: 23.235 “在无铺面的道面上的使用”

CCAR-23-R3: 23.235 “Operation on unpaved surfaces”

- (4) CCAR-23-R3: 23.735(a)(b) “刹车”

CCAR-23-R3: 23.735(a)(b) “Brakes”

- (5) CCAR-23-R3: 23.787(a) “行李舱和货舱”

CCAR-23-R3: 23.787(a) “Baggage and cargo compartments”

- (6) CCAR-23-R3: 23.855(a)(b) “货舱和行李舱防火”

CCAR-23-R3 23.855(a)(b) “Cargo and baggage compartment fire protection”

- (7) CCAR-23-R3: 23.863 “可燃液体的防火”

CCAR-23-R3 23.863 “Flammable fluid fire protection”

- (8) CCAR-23-R3: 23.865 “飞行操纵系统、发动机架和其他飞行结构的防火”

CCAR-23-R3 23.865 “Fire protection of flight controls, engine mounts, and other flight structure”

III. 技术特征和运行限制/Technical Characteristics and Operational Limitations

型号设计定义/Type Design Definition:

文件 SPEC VA/208/PRD Type Design Configuration Data (见注释 3 和 4)

doc. SPEC VA/208/PRD Type Design Configuration Data (see NOTE 3 and NOTE 4)

描述/Description:

单发活塞发动机，四座，上单翼飞机，固定式三点起落架

Single piston engine, four seats, high wing monoplane with fixed tricycle landing gear

设备/Equipment:

适用的适航标准（见审定基础）所要求的基本设备必须在首次审定时安装在飞机上。

此外，还要求有下列设备：

- a. Safe Flight Instrument Corp. 的 164R 型失速探测器
- b. 飞机飞行手册

Basic equipment required by the applicable airworthiness design standard (see certification basis) shall be installed in the aircraft for the first certification.

In addition, the following equipment are required:

- a. Safe Flight Instrument Corp. pre-stall detector Type 164R
- b. Aircraft Flight Manual

外形尺寸/Dimension:

长: 7.230 米 (23.72 英尺)
高: 2.770 米 (9.09 英尺)
宽 (翼展): 9.986 米 (32.76 英尺)
Length: 7,230 m (23,72 ft)
Height: 2,770 m (9,09 ft)
Width (Wing Span): 9,986 m (32,76 ft)

发动机/Engine:

Lycoming IO-360-M1A, FAA 型号合格证 No. 1E10, CAAC VTC No.TC0419E, 认可数据单版次 3

2700 转速下 180 马力，更多发动机限制列于飞机飞行手册运行限制章节

Lycoming IO-360-M1A, FAA Type Certificate No. 1E10, CAAC VTC No.VTC0419E, VTCDS Revision 3

180 HP at 2700 rpm. Other engine's limitations are listed in the "Aircraft Flight Manual", Operating Limitation Section.

载荷因子/Load factors:

正: +4.4g (襟翼收起), 负: -1.0g (襟翼收起)

Positive: +4.4g (Flag UP) - Negative: -1.0g (Flag UP)

螺旋桨/Propeller:

型号: Hartzell 2 叶金属螺旋桨型号 HC-C2YR-1BFP/F7497

调节器: Hartzell 型号 S-1-63

桨毂盖: Hartzell p/n 103585 - (见注释 3)

型号合格证: FAA 型号合格证 No. P-920, CAAC 认可型号合格证 VTC0156P, 认可数据单版次: 4

桨叶数: 2

尺寸: 1.880 米 (74 英寸)

旋转方向: 顺时针

螺旋桨限制: 1.880 米 (74 英寸) - 无缩减许可

Model: Hartzell 2-blades metallic Model HC-C2YR-1BFP/F7497

Governor: Hartzell Model S-1-63

Spinner: Hartzell p/n 103585 (see NOTE 3)

Type Certificate: FAA Type Certificate No. P-920, CAAC VTC No.VTC0156P, VTCDS Revision: 4

Number of blades: 2

Diameter: 1,880m (74 in)

Sense of rotation: Clockwise

Propeller limits: 1,880 (74 in) - No reduction permitted

液体/Fluids:

燃油/Fuel:

允许用于 IO-360-M1A 发动机的航空和车用燃油列于飞机飞行手册的运行限制

章节 (见注释 3)	
Aviation and automotive fuels allowed for IO-360-M1A engine are listed in the “Aircraft Flight Manual”, Operating Limitations Section - (see NOTE 3)	
滑油/Oil:	按照 Textron Lycoming 最新的服务指令 1014 定义的单粘度或多粘度滑油 Single or multi-viscosity oils, in accordance with latest issue of Textron Lycoming Service Instruction 1014
冷却液/Coolant:	风冷 Air
液体容量/Fluid capacities:	
燃油/Fuel:	总共: 200 升 (52.8 美国加仑), 每个机翼油箱 100 升 (26.4 美国加仑) 在+0.650 米 (+25.6 英寸) Total: 200 Lt (52,8 U.S.Gal) [100 Lt (26,4 U.S.Gal) per wing tank]at +0,650 m (+25,6 in)
不可用/Unusable:	10 升 (2.6 美国加仑) (见注释 1) 10 lt (2,6 U.S.Gal)(See NOTE 1)
滑油/Oil	总共: 7.5 升 (2 美国加仑) 在-0.950 米 (-37.4 英寸) Total: 7,5 lt (2 U.S.Gal) at -0,950 m (-37,4 in)
不可用/Unusable:	1.83 升 (0.5 美国加仑) (见注释 1) 1,83 lt (0,5 U.S.Gal)(See NOTE 1)
冷却液容量/Coolant system capacity:	不适用 N/A
空速/Air Speeds:	
不可逾越速度 V_{NE} :	168 节校正空速 (312 公里/小时)
最大结构巡航速度 V_{NO} :	125 节校正空速 (231 公里/小时)
设计操纵速度 V_A :	122 节校正空速 (226 公里/小时)
襟翼展开速度 V_{FE} :	78 节校正空速 (145 公里/小时)
Never exceed speed V_{NE} :	168 KCAS (312 Km/h)
Max structural cruising speed V_{NO} :	125 KCAS (231 Km/h)
Design manoeuvring speed V_A :	122 KCAS (226 Km/h)
Flap fully extended speed V_{FE} :	78 KCAS (145 Km/h)
最大运行高度/Maximum Operating Altitude:	
不适用 N/A	
全天候运行能力/Allweather Operations Capability:	
见飞机飞行手册 See Aircraft Flight Manual	
最大重量/Maximum Weights:	
起飞:	1155 公斤 (2546 磅) (见注释 2)
着陆:	1100 公斤 (2425 磅)
Take-Off:	1,155 kg (2,546 lb) [see NOTE 2]
Landing:	1,100 kg (2,425 lb)
重心范围/Center of Gravity Range:	

后向限制: 基准后+0.465 米 (+18.31 英寸), 任意重量
前向限制: 基准后+0.408 米 (+16.06 英寸), 1155 公斤 (2456 磅)
基准后+0.300 米 (+11.81 英寸), 825 公斤 (1819 磅) 及以下区间内线性变化
Rearward Limits: +0,465 m (+18,31 in) aft of datum at any weight
Forward Limits: +0,408 m (+16,06 in) aft of datum at 1155 kg (2546 lb)
+0,300 m (+11,81 in) aft of datum at 825 kg (1819 lb) or less with linear variation for intermediate weights

测量基准/Datum:

与机翼前缘相切
Tangent to the wing leading edge

操纵面形变/Control surface deflections:

襟翼/Wing Flags:

第一位置下: $13.5^{\circ} \pm 2^{\circ}$
第二位置下: $28^{\circ} \pm 2^{\circ}$
第三位置下: $42^{\circ} \pm 2^{\circ}$
1st pos. Down: $13.5^{\circ} \pm 2^{\circ}$
2nd pos. Down: $28^{\circ} \pm 2^{\circ}$
3rd pos. Down: $42^{\circ} \pm 2^{\circ}$

副翼/Ailerons:

上: $28^{\circ} \pm 2^{\circ}$ 下: $15^{\circ} \pm 1^{\circ}$
Up: $28^{\circ} \pm 2^{\circ}$ Down: $15^{\circ} \pm 1^{\circ}$

方向舵/Rudder:

右: $20^{\circ} \pm 2^{\circ}$ 左: $20^{\circ} \pm 2^{\circ}$
Right: $20^{\circ} \pm 2^{\circ}$ Left: $20^{\circ} \pm 2^{\circ}$

安定面/Stabilator:

上: $14^{\circ} \pm 1^{\circ}$ 下: $8^{\circ} \pm 1^{\circ}$
Up: $14^{\circ} \pm 1^{\circ}$ Down: $8^{\circ} \pm 1^{\circ}$

安定面调整片 (相对于安定面弦) /Stabilator tab (with respect to stabilator chord):

上: $9^{\circ} \pm 1^{\circ}$ 下: $9^{\circ} \pm 1^{\circ}$
Up: $9^{\circ} \pm 1^{\circ}$ Down: $9^{\circ} \pm 1^{\circ}$

水平测量措施/Leveling Means:

纵向和横向/Longitudinal and lateral:

将垂直挂重从位于客舱右顶上的标识盘向下对准客舱地板上的目标
Plumb weight hanging from the dedicated plate located on the cabin right roof, down to the target located on the cabin floor

最小飞行机组/Minimum Flight Crew:

1 (飞行员)
1 (Pilot)

最大座位数/Maximum Seating Capacity:

共 4 个, 分布如下:
2 个在+0.360 米 (+14.2 英寸) 处
2 个在+1.120 米 (+44.1 英寸) 处
Total 4, distributed as follows:
2 at +0,360 m (+14,2 in)
2 at +1,120 m (+44,1 in)

行李舱/货舱/Baggage/Cargo Compartments:

最大允许负载: 40 公斤 (88.2 磅)

位置:	+1.600 米 (+63 英寸)
Max Allowable Load:	40 kg (88,2 lb)
Location:	+1,600 m (+63 in)

机轮和轮胎/Wheels and Tyres:

前轮轮胎尺寸:	5.00-5, III 类
主轮胎尺寸:	6.00-6, III 类
Nose Wheel Tyre Size:	5.00-5, Type III
Main Wheel Tyre Size:	6.00-6, Type III

飞行手册/Flight Manual:

AFM10.701-7 (EASA 批准, No.10057053, 2016 年 3 月 11 日)
最新适用版本参见 doc. p/n NOR10.763-3 “Serie P.64 e P.66 - Indice pubblicazioni tecniche” (技术出版物索引)
AFM10.701-7 (EASA approval No.10057053, dated 11 March 2016)
Refer to doc. p/n NOR10.763-3 “Serie P.64 e P.66 - Indice pubblicazioni tecniche” (Index of Technical Publications) for latest applicable revision

技术手册/Technical Manual:

飞机维修手册 AMM10.702-5 (EASA 批准, No. 10057053, 2016 年 3 月 11 日)
最新适用版本参见 doc. p/n NOR10.763-3 “Serie P.64 e P.66 - Indice pubblicazioni tecniche” (技术出版物索引)
服务通告、指令和函件
参见 doc.p/n NOR10.777-4 “P.64-P.66 Variants, Index of Service Bulletins, Service Letters and Service Instructions”
Airplane Maintenance Manual AMM10.702-5 (EASA approval No.10057053 dated 11 March 2016)
Refer to doc. p/n NOR10.763-3 “Serie P.64 e P.66 - Indice pubblicazioni tecniche” (Index of Technical Publications) for latest applicable revision
Service Bulletins, Instructions and Letters
Refer to doc. p/n NOR10.777-4 “P.64-P.66 Variants, Index of Service Bulletins, Service Letters and Service Instructions”

零件图解目录 (IPC) /Spare Parts Catalogue (IPC):

文件 “Illustrated Parts Catalog” IPC10.703-7
最新适用版本参见 doc. p/n NOR10.763-3 “Serie P.64 e P.66 - Indice pubblicazioni tecniche” (技术出版物索引)
Document “Illustrated Parts Catalog” IPC10.703-7
Refer to doc. p/n NOR10.763-3 “Serie P.64 e P.66 - Indice pubblicazioni tecniche” (Index of Technical Publications) for latest applicable revision

IV.经批准的中文标记标牌/ The Approved Chinese Placards

以下图纸中所包含的中文标记标牌的中文表述已由 CAAC 接受并由 EASA 批准:

The Chinese Placards involved in the following data have been accepted by CAAC and approved by EASA:

序号 Code	标题 Title	编号 Number	版本 Rev.
1	PLACARD INSTALLATION(CHINA)	8103RC	- 含后续经批准的版本。 Including the subsequent approved version(s).

V. 注释/Notes

注释/NOTE 1: 每一飞机颁证时必须提供相应的重量中心报告, 其中包括审定空机重量中包含的设备及加载指令中列出的设备。

审定空机重量和相应的重心位置必须包括:

不可用燃油 (总量): 7.2 公斤 (15.9 磅) 在+0.650 米 (+25.6 英寸)

发动机润滑油 (总量): 1.7 公斤 (3.7 磅) 在-0.950 米 (-37.4 英寸)

Current weight and balance report including list of equipment in certificated empty weight, and loading instructions, must be provided for each aircraft at the time of original certification.

The certificated empty weight and corresponding centre of gravity location must include:

Unusable Fuel (total): 7,2 kg (15,9 lb) at +0,650 m (+25,6 in)

Engine Lubricant (total): 1,7 kg (3,7 lb) at -0,950 m (-37,4 in)

注释/NOTE 2: 下列标牌必须安装在飞行员全视野清晰可见处:

The following placards shall be installed in clear and full view of pilot:

“THIS AIRCRAFT MUST BE OPERATED AS AN UTILITY CATEGORY AIRPLANE, IN ACCORDANCE WITH THE OPERATING LIMITATIONS PRESCRIBED BY PLACARDS, MARKINGS AND APPLICABLE FLIGHT MANUAL”

“ACROBATIC MANOEUVRES APPROVED:

STEEP TURN 200 Km/h IAS

CLIMBING TURN 240 Km/h IAS

LAZY EIGHT 260 Km/h IAS

STALLS

(except whip stall) SLOW DECELERATION

SPIN IS PROHIBITED”

“MAXIMUM TAKE-OFF WEIGHT OF 1155 KG IS ALLOWED ONLY IF THE LANDING WEIGHT CALCULATED ON THE BASIS OF FUEL CONSUMPTION IS NOT HIGHER THAN 1100 KG (2425 LB) ”

注释/NOTE 3: 根据 EASA 批准的大改 MOD.V1/05 “180 HP powerplant unit replacement on V1.0 aircraft”, 序列号 1001 以后的 V1.0 飞机, 均可使用飞机飞行手册运行限制章节中列出的航空和汽车燃油型号

飞机飞行手册 AFM 10.701-7 (EASA 批准号 10057053, 2016 年 3 月 11 日) 包含这个大改。

此大改的审定基础详见 2016 年 2 月 26 日关闭的 issue 3 版 CRI A-01。

V1.0 model aircraft from s/n 1001 onwards are equipped with the following powerplant, as per EASA approved Major Change MOD.V1/05 “180 HP powerplant unit replacement on V1.0 aircraft”:

Both aviation and automotive fuel types are allowed, in accordance with the limitations specified in the “Aircraft Flight Manual”, Operating Limitations Section.

The Airplane Flight Manual AFM 10.701-7 (EASA approval 10057053 dated 11 March 2016) includes this major change.

The Certification Basis of the Major Change MOD.V1/05 is detailed in CRI A-01 closed at issue 3 dated 26 February 2016.

注释/NOTE 4: 当为 Garmin G500 和 JPI EDI-930 显示器以及飞机电源系统更新为 24VDC 安装大改“Vulcanair MOD.V1/02”时, CRI A-01 中定义的审定基础必须结合专用条件 SC-B23.div-01 issue 1 (详细内容见 CRI B-52 “人为因素-综合航电系统”)、SC-F 23.1309-02 (详细内容见 CRI F-52 “HIRF 防护”)、SC-F23.1309-03 (详细内容见

CRI F-54 “闪电防护 - 间接影响”)。飞机飞行手册 AFM10.701-7 (EASA 批准号 10057053, 2016 年 3 月 11 日) 包含此大改。

When major change “Vulcanair MOD.V1/02” (EASA approval 10052599) is installed for Garmin G500 and JPI EDM-930 display equipment and for updating of airplane power generation system to 24VDC, the Certification Basis is detailed in CRI A-01 which must be considered together with Special Conditions SC-B 23.div-01 issue 1 detailed in CRI B-52 “Human factor - Integrated Avionic Systems”, SC-F 23.1309-02 detailed in CRI F-52 “Protection from effects of HIRF”, SC-F 23.1309-03 detailed in CRI F-54 “Protection from effects of Lightning Strike - Indirect Effects”. The Airplane Flight Manual AFM10.701-7 (EASA approval 10057053 dated 11 March 2016) includes this major change.

- 注释/NOTE 5: 安装 Garmin 500 航电系统的 V1.0 飞机可以按照 EASA 批准的大改 MOD.V1/15 “Activation of Terrain SVT System” 激活地形视景合成技术 (SVT) 特性
V1.0 model aircraft may activate the Terrain SVT feature on installed Garmin500 avionics system, as per EASA approved Major Change MOD.V1/15“Activation of Terrain SVT System”
- 注释/NOTE 6: 如果飞机按照 Vulcanair 服务通告 VA-03 进行了更改, 则可批准用作滑翔机拖车
Vulcanair V1.0 model is approved for sailplane glider towing if the aircraft is modified as per Vulcanair Service Bulletin VA-03