



सत्यमेव जयते

GOVERNMENT OF INDIA/भारत सरकार
DIRECTOR GENERAL OF CIVIL AVIATION/महानिदेशक नागर विमानन का कार्यालय
OPP. SAFDARJUNG AIRPORT/सफदरजंग एयरपोर्ट के सामने
NEW DELHI – 110003/नई दिल्ली - ११० ००३

TYPE CERTIFICATE

No. T12250000040/00

This certificate, issued to **SUIND AUTONOMOUS SYSTEMS PRIVATE LIMITED** certifies that the Unmanned Aircraft System

"Bumblebee",

its technical specifications and operating limitations for which are contained in datasheet No, T12250000040/00 dated the 19/01/2026 is of proper design, material, specification, construction and performance for safe operation based on the recommendation of **TQ Cert Services Private Limited** as required by the Certification Scheme for Unmanned Aircraft Systems notified by the Ministry of Civil Aviation vide S.O. 347(E) dated the 26th of January, 2022 .

This Type Certificate is issued under the provision of Rule 8 and Rule 9 (3) of the Drone Rules 2021.

This certificate shall remain valid until suspended or cancelled.

Date :19/01/2026

For Director General of Civil Aviation

Maneesh Kumar
Joint Director General

Signature Not Verified

Signed by: Maneesh Kumar
Joint Director General
Date: 19-Jan-2026 11:00:01

Technical Specifications of SUIND AUTONOMOUS SYSTEMS PRIVATE LIMITED
UAS model "Bumblebee"

Manufacturer's Name	SUIND AUTONOMOUS SYSTEMS PRIVATE LIMITED
Address	Govindapura Bengaluru, Bengaluru, 43/1, THIRUMENAHALLI, VILLAGE YNK 1, K NO 114/1,, BENGALURU URBAN, Karnataka, India, 560064.
UAS Model Name.	Bumblebee
Description	The Bumblebee UAS is a small-class quadcopter rotorcraft equipped with a spraying system, comprising a tank with a maximum liquid filling capacity of 10 litres and two centrifugal nozzles.
UAS Details	
Category	Rotorcraft
Sub-Category	RPAS
Class	Small
Maximum all-up-weight (including payload) in kg	24.89
Overall dimensions (l x b x h) in mm	1846.0X1755.0X452.0
Payload Details	
Details of each Compatible Payload (including Manufacturer Name, Payload Specifications with Model No., Intended Applications)	Configuration 1:- Sprayer with tank having maximum 10L Liquid filling Capacity with 02 numbers of Centrifugal Nozzles
Variable Load/Consumables (Like fluid etc., if any)	Sprayer payload :-10Ltrs Liquid for spraying

Engine/Motor Details							
Engine Power Ratings	No. of Engines	Total fuel capacity (kg)	Engine limits (maximum RPM)	Motor Power Ratings	No. of motors	Battery capacity (mAh)	Maximum battery temperature (Degree Celsius)
-	-	-	-	Hobby Wing X8 BLDC Motor. Power Rating:1569.9W	4	13000.0	60.0

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Propeller details						
Propellar Details	Diameter (inch)	Pitch Range (inch)	Propellar Details (Max RPM)	No. Of Propellers	Type of Pitch	Range (inch)
Vector Technics 3010 Propeller	30.0	10.5	3975.0	4	Fixed	-

Equipment Details	
GNSS	Applicable
Autonomous Flight Termination System	NA
Return Home (RH)	Applicable
Flashing anti-collision strobe light	NA
RFID Card	NA
GSM SIM Card	NA
Flight Control Module	Applicable
SSR transponder(Mode 'C')	NA
SSR transponder(Mode 'S')	NA
ADS-B OUT equipment	NA
Barometric equipment (with capability for remote sub-scale setting) (if applicable)	NA
Geo-fencing Capability	Applicable
Detect and Avoid Capability(if applicable)	Applicable
Remote Pilot Station	
Ground Control Station Model No.	SUIND GCS software
GCS App. Version	v1.0.0
C2 Link	
Equipment details	SIYI MK32
Frequency Band	2.412-2.472 GHz
ETA issued by WPC Wing, DoT	ETA-SD-20230403295 dated 14th April, 2023
Performance Details	
Maximum Endurance (hr/m)	07 min 01 Sec with full tank payload without dispensing, 18 min 06 sec with empty tank payload
Maximum Range (in km)	1.0
Maximum Speed (in m/s)	8.5
Maximum Height attainable/ Maximum Ceiling Height (in ft)	328.0
Operating Altitude (in ft)	328.0
Operational Envelope	VLOS(Day)
Engine limits (Maximum RPM)	NA
Max. Battery Temperature (in deg C)	60.0
Propeller limits	3975.0

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Technical Specifications of SUIND AUTONOMOUS SYSTEMS PRIVATE LIMITED
UAS model "Bumblebee"

Documents/Manuals	
Manufacturer's Operating Manual (as applicable)	Flight Manual of Bumblebee UAS Version 6 Dated 20-12-2025
Manufacturer's Maintenance guidelines (as applicable)	Maintenance Manual of Bumblebee UAS Version 2 Dated 19-06-2025
Maintenance Inspection Schedule/ Overhaul interval	Maintenance Manual of Bumblebee UAS Version 2 Dated 19-06-2025
Maintenance Log Book	Maintenance logbook of Bumblebee UAS Version 1 Dated 27-02-2025
Flight Log Book	Flight logbook of Bumblebee UAS Version 1 Dated 29-03-2025
User Guide/ Self Explanatory Information Booklet for end users	Flight Manual of Bumblebee UAS Version 6 Dated 20-12-2025
Intended Applications	
Intended Applications	Agrochemical spraying for Agriculture purpose

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Limitations & Conditions to M/s SUIND AUTONOMOUS SYSTEMS PRIVATE LIMITED for manufacturing of UAS model 'Bumblebee'

1. M/s Suind Autonomous Systems Pvt Ltd henceforth referred as manufacturer in this documents shall comply with the applicable Rules, Regulations & Requirements issued from time to time. The manufacturer shall comply with mandatory safety features (if any) as and when mandated by Ministry of Civil Aviation/DGCA.
2. Design documents and manuals submitted shall be frozen and controlled. Any changes effecting to the Type Certificate/ Datasheet, the manufacturer shall approach through Authorised Testing Entity for up- dation of the Type Certificate/ Data Sheet issued there under.
3. Manufacture shall be responsible for all UAS Model “**Bumblebee**” produced by them conforms to this type certificate & datasheet and shall issue a certificate of conformity for each UAS produced.
4. Manufacturer shall ensure that their UAS is not tampered at the time of sale and also at the time of maintenance. Manufacturer shall monitor the same and notified to DGCA as and when required.
5. Manufacturer shall maintain list of their vendors, bill of materials, inventory of UAS including buyer details with configurations sold to them etc. and access to the same shall be provided to DGCA during surveillance and as & when requested for. It shall be the responsibility of the manufacturer to ensure that their UAS are sold to bonafide customers.
6. Manufacturer shall ensure that operations is restricted to Visual Line of Sight, for day operations only and within the operations/ performance limitations specified in the frozen manuals.
7. Manufacturer shall affix fireproof plate for indicating UIN, Manufacturer’s name, model no, Date of Manufacturing. and serial no. in all the UAS manufactured before it is transferred to the buyer.
8. Manufacturer shall intimate DGCA about any violations, defects, faults, malfunctions, incidents and accidents involving the subject UAS model quarterly and as when sought for.
9. UAS model "**Bumblebee**" can be used for intended applications only. Manufacturer shall ensure that the drone is flown away (30m) from uninvolved people and far away from the crowd/uninvolved people. The manufacturer shall be responsible for ensuring applicable conditions and educate end users accordingly.

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10. Manufacturer shall be responsible for rights related to design and development of the UAS model “**Bumblebee**” and DGCA shall not be party to any dispute arising due to proprietary right issues.
11. Manufacturer shall abide by the IT Act 2000 and any subsequent revision.
12. In case of violation of any of the above mentioned conditions and/ or operating requirements & restrictions specified in this Type Certificate, penal action shall be initiated in line with the Drone Rules, 2021 and other Rules/ Regulations issued from time to time.

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