

# Voliro T

## Technical specification



# Aircraft

Drone type / configuration	Multicopter / omnidirectional tri-copter
Weight (batteries excluded)	3.7 kg / 8.16 lbs
Max. takeoff weight	6.0 kg / 13.23 lbs
Max. payload weight	1.0 kg / 2.20 lbs
Dimensions (L×W×H)	118×109×34 cm / 46.5×42.9×13.4 in (fully assembled) 78×78×34 cm / 30.7×30.7×13.4 in (w/o rotors, bumpers, payload) The drone can be transported through a 50 cm (20 in) manhole by detaching the tail, payload, and bumpers
Camera system	4K 12 MP inspector camera (horizontal FoV 80°) 2K 12 MP pilot camera (horizontal FoV 140°) Frame rate: 30/60fps Best GSD: 0.16 mm/px Video Formats: H.265 (.MP4) File storage: microSD card, 256 GB
Downlink	Live video stream inspector camera: HD 30 fps Live video stream pilot camera: HD 30 fps Live payload data stream
Power LEDs	Max. 17,000 lumen (adjustable through RC) Intelligent thermal throttling
Sensing system	Depth camera (VGA) 6× LiDAR distance sensor 6× vision-based velocity sensor RTK GPS (multi-band, BeiDou, Galileo, GLONASS, GPS /QZSS) Redundant IMU, barometer, and magnetometer

## Flight capabilities, operation, environmental limitations

Flight time	10 - 14 min (mission and payload dependent)
Flight modes	Manual (attitude is fully stabilized) Altitude Position Interaction assistant
Emergency flight modes	Intelligent auto-descent / position-hold on signal lost
Navigation assistance	Outdoor GPS based: position, velocity, attitude Indoor GPS denied: height, velocity, attitude
Interaction accuracy	±2 cm / ±0.8 in (normal environment conditions, trained pilot)
Max. horizontal speed	3 m/s / 6.7 mph (in Position flight mode) 15 m/s / 33.6 mph (in Altitude and Manual flight mode)
Max. ascent / descent speed	3 m/s / 6.7 mph (in Position flight mode) 10+ m/s / 22.4+ mph (in Manual mode)

Wind resistance	12 m/s / 26.8 mph (in free flight) 8 m/s / 17.9 mph (in Interaction flight mode) Recommendation for precise interaction: Max. 6 m/s / 13.4 mph
Pitch angle	±90° Voliro T can be oriented to a surface of any orientation
Max. transmission distance	300+ m / 984+ ft for all data links (direct VLOS) 2+ km / 1.2+ mi for safety-critical remote controller link
Temperature	-10 - 40 °C / 14 - 104 °F No continuous direct sunlight if temperature is above 30 °C / 86 °F If the temperature is below 5 °C / 41 °F flight time can be reduced
Service ceiling	5000 m ASL / 16404 ft ASL
Assembly time	< 5 min

## Battery and charger

Battery type	LiPo (hardcase, UN3481)
Battery configuration	2 × 6S batteries in parallel
Energy	99 Wh (a pair of batteries required)
Capacity	2 × 4500 mAh
Weight	1.3 kg / 2.87 lbs (per battery pair)
Charging cutoff voltage	25.2 V
Min. voltage	21.6 V (no-load) Battery might get damaged if the voltage is lower
Recommended storage voltage	22.2 - 22.8 V
Recommended charging current	< 9 A or 1C
Charging temperature	10 - 30 °C / 50 - 86 °F
Charging time	< 90 min
Smart battery	No, batteries must be treated and cared for accordingly
Material safety data sheet (MSDS)	Available on request The Voliro T batteries are airline approved according to IATA TABLE 2.3.A. The batteries have to be carried in your carry-on baggage
Charger type	Dual AC/DC LiPo charger with balancing function
Charger input voltage AC	110-120 V AC / 220-240 V AC (manual switch), 50 / 60Hz 9 - 32 V DC
Peak output power	600 W

## RTK GPS base

GPS antenna	Integrated active antenna
Tripod	Rollei compact traveler star S1, 38.5 - 125 cm / 15.2 - 49.2 in
Battery	3000 mAh
Charger	Input 110 - 240 V AC, Output 12.8 V DC

# Remote controller and tablet

Pilot tablet	Samsung Galaxy Tab S6 Lite 26.31 cm / 10.4 in, 2000 × 1200 (WUXGA+), TFT 2.3 GHz, 1.7 GHz, octa-core
Tablet charger	Through remote controller / data link, 12 V
Tablet battery	7040 mAh
Inspector tablet	Identical to pilot tablet
Remote controller mode	Mode 2 (throttle and yaw on the left stick)
Gimbal	Hall sensor M7 gimbal (pinching and thumbs compatible)
Remote controller battery	3600 mAh
Remote controller charger	Input 110 - 240 V AC, output 12.8 V DC

## Data link

Video and data link	5.725 to 5.875 GHz ISM CE mode (EIRP < 25 mW) or FAA mode (EIRP < 1000 mW)
RC link	2.4GHz ISM, EIRP < 25 mW
RTK telemetry link	2.4GHz ISM, EIRP < 10 mW
Remote ID broadcasting link	Bluetooth

## Transport case

Drone case	80×55×35 cm / 31.5×21.7×13.8 in 20 kg / 44 lbs Content: Drone, RC, inspector tablet, RTK base IATA compliant for checked-in luggage
Payload case	60×35×20 cm / 23.6×13.8×7.9 in 8-12 kg / 17.6-26.5 lbs (depending on content) Content: Payload, up to 6 batteries IATA compliant for carry-on luggage
Charger and accessories case	60×35×20 cm / 23.6×13.8×7.9 in 8 kg / 17.6 lbs Contains: charger, spare parts, accessories IATA compliant for carry-on and checked-in luggage.
All cases	All cases are rugged, waterproof, crushproof and dustproof Pelicase Cases. The Voliro T batteries are airline approved according to IATA TABLE 2.3.A. The batteries have to be carried in the carry-on baggage.

