



The CarryAir is a compact VTOL aircraft that can be assembled and operated by one person within 2 minutes. It is designed for a wide range of applications and offers an all-purpose load volume of 60 liters which is protected against water ingress.

Its maximum take-off mass is 25kg with a wingspan of 2.99m.

Depending on the desired range, up to 7kg payload can be added next to the batteries. This gives enough payload for high quality Cameras and/or Sensor solutions.

It has a redundant hover as well as a redundant electric drive for wing flight.

The aircraft structure is manufactured from aircraft certified materials, same like used for our manned airplanes.

#### Features and benefits

- Aircraft grade composite structure
- Redundant 6 Motor hover system
- Redundant dual front motor
- Parachute Option possible
- Large Payload Compartment offers a lot of Payload solutions
- High Payload within <3m Wingspan Jarus class
- Easy to fly
- One man assembly within 2 min. possible
- Only one transport box for Aircraft and payload
- Different Battery Options possible
- Range Extender (gasoline) option
- Different connectivity options
- Automatic wind detection for autonomous landing
- Failsafe in case of connection loss or low battery

## CarryAir Full Electro

## CarryAir with Range Extender

### Basic Information

<b>Drone type</b>	VTOL; Blended Wing Body	VTOL; Blended Wing Body
<b>Payload position</b>	Payload integrated in the aircraft waterproofed payload bay	Payload integrated in the aircraft waterproofed payload bay
<b>FTS (Optional)</b>	DRS-15 autonomous parachute system (Weight 650g)	DRS-15 autonomous parachute system (Weight 650g)
<b>Structure Material</b>	Aircraft certified materials Carbon Glas Nomex Honeycomb structure	Aircraft certified materials Carbon Glas Nomex Honeycomb structure
<b>Drone battery</b>	2x 6S LiPo Battery 30.000mAh 2x 6s LiPo 40.000 mAh	2x 6S LiPo Battery 10.000mAh (recharged by the Range Extender)
<b>Propulsion</b>	6 × brushless electric for Hover with carbon folding propeller 2 x brushless electric for redundant front propulsion on one Propeller with carbon fixed pitch propeller	6 × brushless electric for Hover with carbon folding propeller 2 x brushless electric for redundant front propulsion on one Propeller with carbon fixed pitch propeller
<b>Flight modes</b>	Flight modes QHover and QLoiter , FBWB, Auto, Loiter	Flight modes QHover and QLoiter , FBWB, Auto, Loiter
<b>Flight Operation</b>	Operating speed of 23 m/s Enables the use of lidar scanners and other sensons and cameras	Operating speed of 23 m/s Enables the use of lidar scanners and other sensons and cameras
<b>Payload</b>	7kg max @ 22.000 mAh 40 min (56km Range) 5 kg max @ 2 x 6S 30.000mAh / 1 hour t (85 km Range) 4 kg max @ 2 x 6S 40.000mAh / 1,5 hour (127km Range)	Payload 4,5 kg max @ 2,5kg fuel / 2,5 hour flight (200km Range) Payload 1kg max @ 6,5kg fuel / 7,5 hour flight (600 km Range)
<b>Propulsion type</b>	No tilting rotors mechanics for higher reliability and less maintenance. (Can be Certified) Reduction of complex parts to the minimum, only two elevon servos only one wing and simple undercarriage.	Build in two stroke gasoline Range Extender. No tilting rotors mechanics for higher reliability and less maintenance. (Can be Certified) Reduction of complex parts to the minimum, only two elevon servos only one wing and simple undercarriage.

## Technical Data

<b>Dimensions</b>	299cm × 159cm × 47cm (Aircraft) 152cm x 84cm x 52cm (Case)	299cm × 159cm × 47cm (Aircraft) 152cm x 84cm x 52cm (Case)
<b>Weight</b>	Empty Weight 12 kg (without battery) / Max. 25 kg	Empty Weight 17,5 kg / Max. 25 kg
<b>Flight speed</b>	Speed in flight (fly by wire) Min. 70km/h Max. 100km/h Stallspeed 52km/h Speed in Hover: 0m/s min 4 m/s in (QLoiter mode)	Speed in flight (fly by wire) Min. 70km/h Max. 100km/h Stallspeed 52km/h Speed in Hover: 0m/s min 4 m/s in (QLoiter mode)
<b>Climb speed</b>	Rate of climb and descent 3m/s in hover 4m/s in flight	Rate of climb and descent 3m/s in hover 4m/s in flight
<b>Max. flight time</b>	7kg max @ 22.000 mAh 40 min (56km Range) 5 kg max @ 2 x 6S 30.000mAh / 1 hour t (85 km Range) 4 kg max @ 2 x 6S 40.000mAh / 1,5 hour (127km Range)	Payload 4,5 kg max @ 2,5kg fuel / 2,5 hour flight (200km Range) Payload 1kg max @ 6,5kg fuel / 7,5 hour flight (600 km Range)
<b>Max. altitude</b>	Flight altitude (dynamic) Max. 2000m MSL  Multicopter Mode (static) 1000m MSL (Higher altitudes on request with different Propellers)	Flight altitude (dynamic) Max. 1500m MSL  Multicopter Mode (static) 1000m MSL (Higher altitudes on request with different Propellers)
<b>Wind resistance</b>	Gust wind resistance 20 knots at hover; 25 knots in flight	Gust wind resistance 20 knots at hover; 25 knots in flight
<b>Operating temperature</b>	dt= -20 to 45°C (no icing conditions and preheated Batteries at temperatures lower then 15°C)	dt= -10 to 35°C (no icing conditions and preheated Batteries at temperatures lower then 15°C)
<b>Weather limits</b>	No operation during heavy rain, icing conditions, hail and thunder storms.	No operation during heavy rain, icing conditions, hail and thunder storms.
<b>Landing accuracy</b>	On normal GPS operation +/- 1,5m	On normal GPS operation +/- 1,5m

Electronic

<p><b>Avionics</b></p>	<p>GNSS RTK Antenna and Compass            1x Rainproof Pitot tube + 1x redundant Synthetic airspeed            2x Barometer            Integrated backup system for in-flight recovery and manual override with dedicated processor and stand-alone power supply (fixed-wing use)            Backup system integrates mixing, providing consistent autopilot and manual override mixing modes (fixed wing use)            Redundant power supply inputs and automatic failover</p>	<p>GNSS RTK Antenna and Compass            1x Rainproof Pitot tube + 1x redundant Synthetic airspeed            2x Barometer            Integrated backup system for in-flight recovery and manual override with dedicated processor and stand-alone power supply (fixed-wing use)            Backup system integrates mixing, providing consistent autopilot and manual override mixing modes (fixed wing use)            Redundant power supply inputs and automatic failover</p>
<p><b>Failsafe</b></p>	<p>The Carryair has a lot of different failsafe functions to get the operation in the field as simple as possible for the drone pilot.</p> <ul style="list-style-type: none"> <li>- Return to launch at loss of connectivity (Radio / LTE)</li> <li>- Return to launch at transition failure</li> <li>- Return to launch at low battery Voltage</li> </ul>	<p>The Carryair has a lot of different failsafe functions to get the operation in the field as simple as possible for the drone pilot.</p> <ul style="list-style-type: none"> <li>- Return to launch at loss of connectivity (Radio / LTE)</li> <li>- Return to launch at transition failure</li> <li>- Return to launch at low battery Voltage</li> </ul>
<p><b>Awareness systems</b></p>	<p>AVEO Position and anti collision lights (Aircraft Grade)            Lidar Ground Altimeter (Optional)            ADSB receiver integrated (Aircraft avoidance can be activated)            ADSB Tranceiver or Transponder or Mode S on request.</p>	<p>AVEO Position and anti collision lights (Aircraft Grade)            Lidar Ground Altimeter (Optional)            ADSB receiver integrated (Aircraft avoidance can be activated)            ADSB Tranceiver or Transponder or Mode S on request</p>
<p><b>Awareness radios</b></p>	<p>1 x FLARM on request            1 x ADS-B in            1 x remote ID can be activated on request</p>	<p>1 x FLARM on request            1 x ADS-B in            1 x remote ID can be activated on request</p>
<p><b>Connectivity (on request)</b></p>	<p>cellular telemetry // 3G, 4G and 5G            Satellite / Starlink end 2023            Radio BKM Custom: Doodle Labs, DTC</p>	<p>cellular telemetry // 3G, 4G and 5G            Satellite / Starlink end 2023            Radio: Doodle Labs, DTC, Microhard</p>
<p><b>Flight Controller</b></p>	<p>Option 1 Herelink            Option 2 H16 Video Controller            Option 3 UXV Controller            Option 4 BKM Custom Solution            Option 5 Globe UAV Control Station (LBA Sail 3 Level)</p>	<p>Option 1 Herelink            Option 2 H16 Video Controller            Option 3 UXV Controller            Option 4 BKM Custom Solution            Option 5 Globe UAV Control Station</p>

## Payloads

<b>Camera (Options)</b>	FPV Hawkeye Firefly Gimbal Cameras Next Vision (Raptor) Gimbal Camera Viewpro (A30TR-50) Gimbal Camera UXV Optrox GMB 600 Sony A7R 61 Megapixel Camera Canon Mark II Workswell thermal cameras	FPV Hawkeye Splitcam Gimbal Cameras Next Vision (Raptor) Gimbal Camera Viewpro (A30TR-50) Gimbal Camera UXV Optrox GMB 600 Sony A7R 61 Megapixel Camera Canon Mark II
<b>Laserscanner</b>	Riegl VUX120 custom solution Yellowscan Voyager Phoenix Lidar	For Range Extender Version a payload of max 3 kg is recommended to keep the advantage of long endurance flights with enough fuel.



Fig 1. Installed Yellowscan Explorer



Fig 2. Sony A7R Camera



Fig 3. Medical transport box



Fig 4. Viewpro A30-TR50 Gimbal



Fig 5. Next Vision Raven Gimbal



Fig 6. Workswell Wiris Agro Thermal Camera