EPSILON

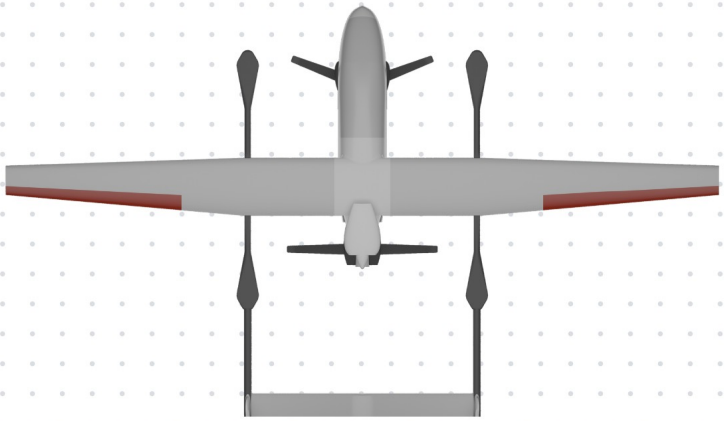
# VTOL 100/20

## Heavy VTOL ISTAR UAS

**10 hours endurance** | **20 kg payload** | **100 km LOS Silvus link*** | **VTOL, no runway**

A Comprehensive Solution Provider

**ISTAR MULTI-MISSION**
Sensors · effectors · SATCOM



The VTOL 100/20 is a 100 kg VTOL aircraft with a 6 m wingspan, a 3W-170Xi petrol engine for cruise and four electric motors for vertical flight. It cruises at 110 km/h for up to 10 hours, and its 20 kg payload carries multi-sensor and effector configurations for complete ISTAR missions.

### AT A GLANCE

| | |
|---|---|
| MTOW | **100 kg** |
| Max payload | **20 kg** |
| Endurance | **Up to 10 hours** |
| Range (LOS) | **100 km*** |
| Cruise speed | **110 km/h** |
| Wingspan | **6 m** |
| Service ceiling | **15,000 ft AMSL** |
| Propulsion | **Petrol + 4 electric** |

### KEY CAPABILITIES

**Heavy multi-mission payload**
20 kg; carries C-Gull SAR and eOpic8 targeting gimbals.

**All-day endurance**
Up to 10 hours on a 50 L fuel tank.

**Long-range C2**
Silvus radio to 100 km LOS; SATCOM optional.

**Runway-independent**
Vertical launch and recovery; efficient fixed-wing cruise.

**Two-operator GCS**
Pilot and payload operator in one rugged case.

**AGILITY MEETS POWER IN THE SKIES.**

**INTELLIGENCE SIGINT / ELINT** | **PERSISTENT SURVEILLANCE** | **TARGET ACQUISITION** | **RECONNAISSANCE**

www.epsilonaerovision.com

*Line-of-sight range; extended range with optional SATCOM. Performance varies with payload and conditions.

EPSILON

# VTOL 100/20

Platform Specifications & Integration

| AIRFRAME & PERFORMANCE | |
|---|---|
| Wingspan / length | **6 m / 3.44 m** |
| MTOW | **100 kg** |
| Max payload | **20 kg** |
| Endurance (fixed wing) | **Up to 10 h** |
| Cruise speed | **110 km/h** |
| Stall speed | **54 km/h** |
| VNE | **216 km/h** |
| Max crosswind | **44 km/h** |
| Service ceiling | **15,000 ft AMSL** |

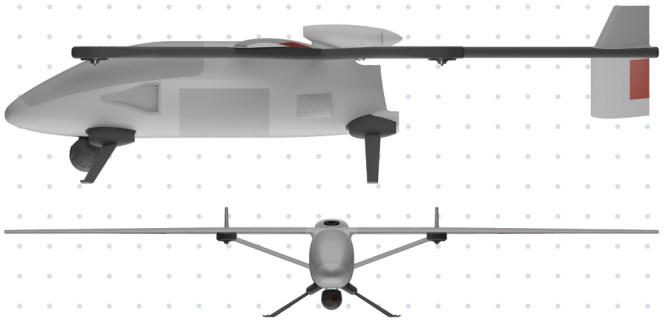
| PROPULSION & POWER | |
|---|---|
| VTOL propulsion | **4 × electric motors** |
| Cruise engine | **3W-170Xi B2 TS CS** |
| Fuel tank | **50 L** |
| VTOL power | **12S LiPo, 96,000 mAh** |
| Avionics power | **1,300 mAh LiPo** |
| Engine start | **Electric starter** |
| Launch / recovery | **VTOL, no runway** |
| Configuration | **Twin-boom, quad VTOL** |
| Mission role | **ISTAR** |

## COMMAND, CONTROL & GCS

**100 km** — **Silvus radio**
Line-of-sight C2 and video.

**BLOS** — **SATCOM option**
Extended range beyond line of sight.

| | |
|---|---|
| GCS | **Ruggedised case, 2 screens** |
| Crew | **Pilot + payload operator** |
| Payload control | **Dedicated operator station** |



## MISSION PAYLOADS

Multi-mission bay for up to 20 kg; gimbals up to 220 mm. See page 3 for payload options.

**Threod eOpic8 EO/IR** | **CSIR C-Gull SAR** | **SIGINT** | **ELINT** | **Effectors** | **Customer payloads**

### Why VTOL 100/20?

Medium-UAS payload and endurance with the freedom of VTOL: no runway, launcher or recovery net.

## GROUND SUPPORT KIT

- Complete transport case
- Spare VTOL & engine propeller sets
- Starter motor & fuel pump
- Battery charger & leads
- VTOL & avionics flight battery packs
- Pump & starter batteries
- Maintenance kit & tool kit

*Line-of-sight range; beyond-line-of-sight with optional SATCOM. Performance varies with payload, configuration and conditions. Weapon/effector integration and export are subject to end-user approval and NCACC authorisation under South Africa's National Conventional Arms Control Act, 2002. Specifications are indicative and subject to change without notice.


**CONTACT**

**Dr G.B. Erasmus**

gerte@epsilonaerovision.com

+27 72 580 8136

EPSILON

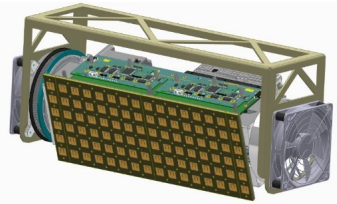
# VTOL 100/20

## Mission Payload Options

The VTOL 100/20's 20 kg payload bay is sized for leading radar and EO/IR sensors. Two integration options, subject to supplier terms and conditions:

### CSIR C-GULL SAR

C-band radar · all-weather, day & night



Synthetic-aperture radar that sees through cloud, smoke and darkness. Real-time VideoSAR and moving-target detection (GMTI), with left/right swivel for imaging either side of the flight path.

| | |
|---|---|
| Mass / size | **< 10 kg · 520 × 250 × 250 mm** |
| Power | **28 V, < 300 W operating** |
| SAR modes | **Stripmap · Spotlight · VideoSAR** |
| GMTI | **Fixed angle & scanning** |
| Resolution | **< 30 cm range · < 15 cm cross-range** |
| Processing / storage | **Real-time on board · up to 8 TB** |
| VTOL 100/20 fit | **110 km/h cruise, within 120 km/h limit** |



Example C-band SAR image produced using CSIR phased-array technology.

### THREOD eOpic8

EO/IR · laser rangefinder · designator



**ISTAR-H**
50 mJ laser designator, laser rangefinder, MWIR + visible zoom.



**ISTAR-A**
70 mJ laser designator, rangefinder, HD SWIR see-spot imager.

| | |
|---|---|
| Mass / size | **6.2 kg · 220 mm Ø × 290 mm** |
| Visible camera | **1080p, 36× optical zoom** |
| Thermal | **MWIR 640 × 512, 13× zoom** |
| DRI human (visible) | **26 / 15 / 8.5 km** |
| Laser designator | **> 50 mJ (H) / > 70 mJ (A), 1064 nm** |
| Designation range | **Vehicle > 4.5 km · extended > 8 km** |
| Laser codes | **STANAG 3733 or user-defined** |
| Video / metadata | **H.264/H.265 · STANAG 4609 KLV** |
| Origin | **Made in EU · ITAR-free** |

220 mm diameter matches the VTOL 100/20's gimbal envelope.
Compatible with a wide range of laser-guided munitions.

**MASS BUDGET** **< 10 kg** C-Gull + **6.2 kg** eOpic8 ≈ **16 kg** within the VTOL 100/20's 20 kg payload: radar and EO/IR targeting on one aircraft, subject to integration.*

*Payload integration is subject to supplier terms and conditions, power, volume and CG integration, and flight testing. C-Gull is a CSIR (South Africa) product; data from CSIR's draft datasheet. eOpic8 is a Threod product; data from Threod's June 2026 datasheet. Laser-designation and weapon-related exports are subject to end-user approval and NCACC authorisation.


**CONTACT**
**Dr G.B. Erasmus**
gerte@epsilonaerovision.com
+27 72 580 8136