



One platform, two positioning methods: outdoor use with GNSS (Global Navigation Satellite System), and in environments without satellite signals, it switches to laser and visual fusion SLAM (Simultaneous Localization and Mapping); the BT88 seamlessly transitions between coal mine tunnels, steel plant towers, port yards, cement silos, and power plant material warehouses, providing an all-weather alternative to manual inspections 24/7.

BT88 Industrial-Grade, Multi-Scenario Inspection UAV

Core capabilities

Scenario	Key Requirements	BT88 solution
Underground coal mine	No GPS, low light, methane risk	LiDAR + starlight vision SLAM, multi-gas detection (CH ₄ , CO, H ₂ S, O ₂ , PM), lights-out operation
Steel mill	High temperature, heavy dust, long spans	Level 6 wind resistance, IP54 protection, infrared temperature measurement to identify overheating in steel ladles and rolling lines
Port	Sea-salt spray, large stockyard	GNSS/Beidou RTK (Real-Time Kinematic) positioning accuracy of $\leq \pm 0.5$ m, 20 m/s high-speed scanning within a 15 km radius
Cement plant	Internal silo & high-altitude pipelines	440 × 330 × 470 mm folded, elevator-friendly; one-key take-off/landing, vertical silo penetration
Power plant	Material warehouse, pipe gallery	GNSS/BeiDou RTK $\leq \pm 0.5$ m, 20 m/s high-speed scanning within 15 km radius

- Dual-mode positioning
Open-sky / stockyard: Outdoor/yard: GNSS (GPS/Beidou/Galileo/GLONASS) RTK positioning accuracy of $\leq \pm 0.5$ m.
- Long endurance & high agility
66 min (no load) / 32 min (5 kg payload), maximum speed of 20 m/s
- Integrated triple-sensor payload (total ≤ 5 kg)
LiDAR: 360° point cloud, 200 m range, 200 k pts/s density, 3-D mapping, auto obstacle avoidance
Vision: 4K visible + 640 × 512 IR, 50 mK thermal sensitivity—detects belt drift, silo cracks
Gas: CH₄, CO, H₂S, O₂, PM2.5/10 (expandable), ppb-level resolution

Technical specifications at a glance

Item	Specification
Airframe	4-rotor, carbon fiber, IP54
Dimensions	685 × 685 × 470 mm deployed / 440 × 330 × 470 mm folded
Max take-off weight	7 kg
Payload capacity	5 kg (LiDAR + vision + gas combined)
Endurance	66 min (empty) / 32 min (max payload)

Item	Specification
Control range	15 km LOS
Positioning accuracy	RTK $\leq \pm 0.5$ m / SLAM $\leq \pm 0.2$ m
Operating temperature	-20 °C to +55 °C
Wind resistance	Beaufort 6 (12 m/s)
Communication	2.4 GHz FHSS; optional 4G/5G/fiber-optic link

Software platform

- 2-D/3-D real-time map with GNSS/SLAM mode switch
- “Teach-Learn-Replay” route library for rapid cross-site deployment
- AI detection: belt drift, belt tear, material hang-up, gas alarms within 3s
- Multi-UAV coordination—up to 10 aircraft online simultaneously; Cloud segment: DF-Cloud big-data platform
- Centralized monitoring across plants; mobile & large-screen dashboards
- Automatic archiving of inspection data; predictive-maintenance reports cut downtime by 30%
- RESTful API for zero-friction integration with DCS / SCADA / MES
Optional hangar: DF05 autonomous dock
-20 °C to +65 °C outdoor operation, battery swap in 3 min—true “unmanned, non-stop, multi-scenario” continuous inspection.

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