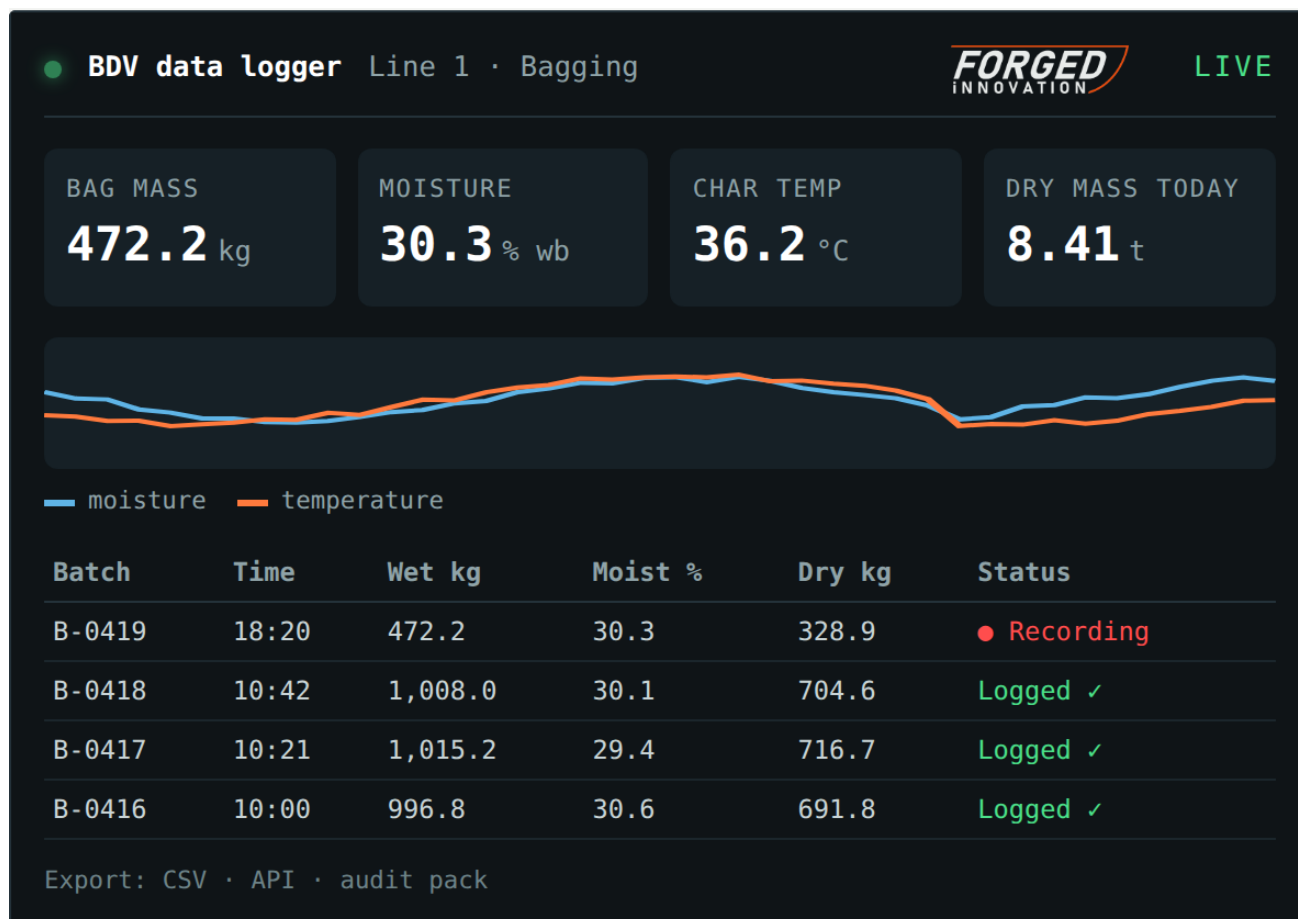




BDV – Biochar Digital Verification

Meter, weigh, moisture-test and bag biochar with a verified digital record for every tonne.



Live data logger dashboard (illustrative data).

Document	BDV specification sheet
Reference	FI-BDV-SS-001
Date	29 September 2026
Version	1.0
Prepared by	Forged Innovation Ltd
Prepared for	Biochar producers and CDR project developers

Overview

Carbon removal buyers and registries want proof of every tonne, and since 1 January 2026 biochar shipped as UN 1361 must be at or below 40 °C on the day it is packed, with that temperature recorded. BDV combines the metering, weighing and sensing hardware with a data logger, so every figure in your report is measured, not estimated. Each bag and batch is logged into a timestamped, tamper-evident record ready for your registry, verifier and customers.

What it does

Function	Description
Metered feed	Metering augers or a screw weigher deliver char at a measured, steady rate.
Weighing	Load cells under the bag frame check every bag to a set weight.
Moisture and temperature	Inline sensors record moisture and packing temperature for every batch and bag; a ≤ 40 °C interlock prevents hot char being packed.
Digital verification (dMRV)	Every bag gets a timestamped record: wet mass, moisture, dry mass, temperature and batch ID, exportable for audit.
Dust-sealed filling	Sealed fill head, extraction port and vibration densification for stable, clean bags.
Optional inoculation	Add Forged dosing and inoculation; each dose is flow-metered and logged against the batch.

Model range

The model number is the maximum dry-char throughput in kg/h at the stated accuracy. ZEDE matches are indicative and depend on feedstock.

Model	Dry char throughput (kg/h)	Wet throughput at 30 % moisture (kg/h)	Typical match
BDV-50	50	71	ZEDE 300 kW
BDV-150	150	214	ZEDE 1000
BDV-500	500	714	ZEDE 3 MW
BDV-1000	1,000	1,429	ZEDE 6 MW
Custom	> 1,000	to suit	Built to order

Wet throughput = dry throughput ÷ (1 – moisture fraction). Size on wet flow at your actual moisture content.

Technical specification

Parameter	Value	Unit	Basis
Dry char throughput	50–1,000	kg/h	Model rating
Mass accuracy	±0.5–1	%	Typical
Moisture range	0–65	% wb	Typical
Moisture accuracy	±0.5	%	Typical
Packing temperature interlock	≤ 40	°C	IMDG SP 978
Logging interval	≤ 1	min	Typical
Data outputs	4–20 mA / Modbus / CSV / API	—	Standard
Design bulk density	230	kg/m ³	Design basis
Bag size	500–2,000	kg	Typical
Materials	304 stainless product contact; mild steel frame	—	Standard
Power	400 V / 3-ph; sensors 24 V DC; compressed air 6 bar	—	Standard
Footprint (L × W × H)	1,500 × 1,500 × 2,800 (single fill station)	mm	Typical
Weight	800–1,500	kg	Typical

Typical = indicative range. Every system is sized to your material and duty, and confirmed on the quote.

Data record and outputs

Recorded per bag / batch	Export
Batch and bag ID, timestamp	CSV, API, audit pack (PDF)
Wet mass, moisture, calculated dry mass	Batch totals and daily summaries
Packing temperature and date of packing	Shipping declaration data (UN 1361)
Inoculant dose (if dosing fitted)	Dose per tonne of dry char
Calibration status and sensor health	Calibration certificate references

Why dry mass matters

Carbon removal is calculated on dry biochar mass. At 30 % moisture a 1,000 kg bag holds 700 kg of dry char; a reading of 28 % would report 720 kg, a 2.9 % overstatement on every bag. BDV measures moisture inline for every bag rather than relying on occasional grab samples.

Compliance and documentation

Item	Detail
Marking	CE / UKCA as applicable
Standards applied	Supply of Machinery (Safety) Regulations 2008; EN ISO 12100; EN 60204-1; EMC and Low Voltage Regulations; NAWI Regulations 2016 (trade weighing, where required)
Shipping	Records support IMDG SP 978 declarations: date of production, date of packing, temperature on the day of packing
Supplied with	Declaration of Conformity; O&M; manual; GA drawing; electrical schematics; calibration certificates (load cells, oven-dry moisture); data-integrity statement; monitoring-plan template
Warranty	12 months

Commercial

Item	Detail
Price	From £18,000 ex VAT (hardware), plus from £3,000 per year for data hosting, calibration reminders and support
Lead time	8–14 weeks from approved general arrangement drawing
Options	Screw weigher or load cells; microwave or NIR moisture sensing; inoculation dosing; multi-bag filling line; vibration densification; manual to fully automatic

Talk to us about BDV

Send your material, moisture and throughput and we will size a BDV system for your line.
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