



# Enhanced production control and effective stockpile management

An industry-proven and viable alternative to traditional weight-based conveyor measurement systems.

**LOADSCAN**<sup>®</sup>  
accurate payload measurement



# Conveyor Volume Scanner (CVS)

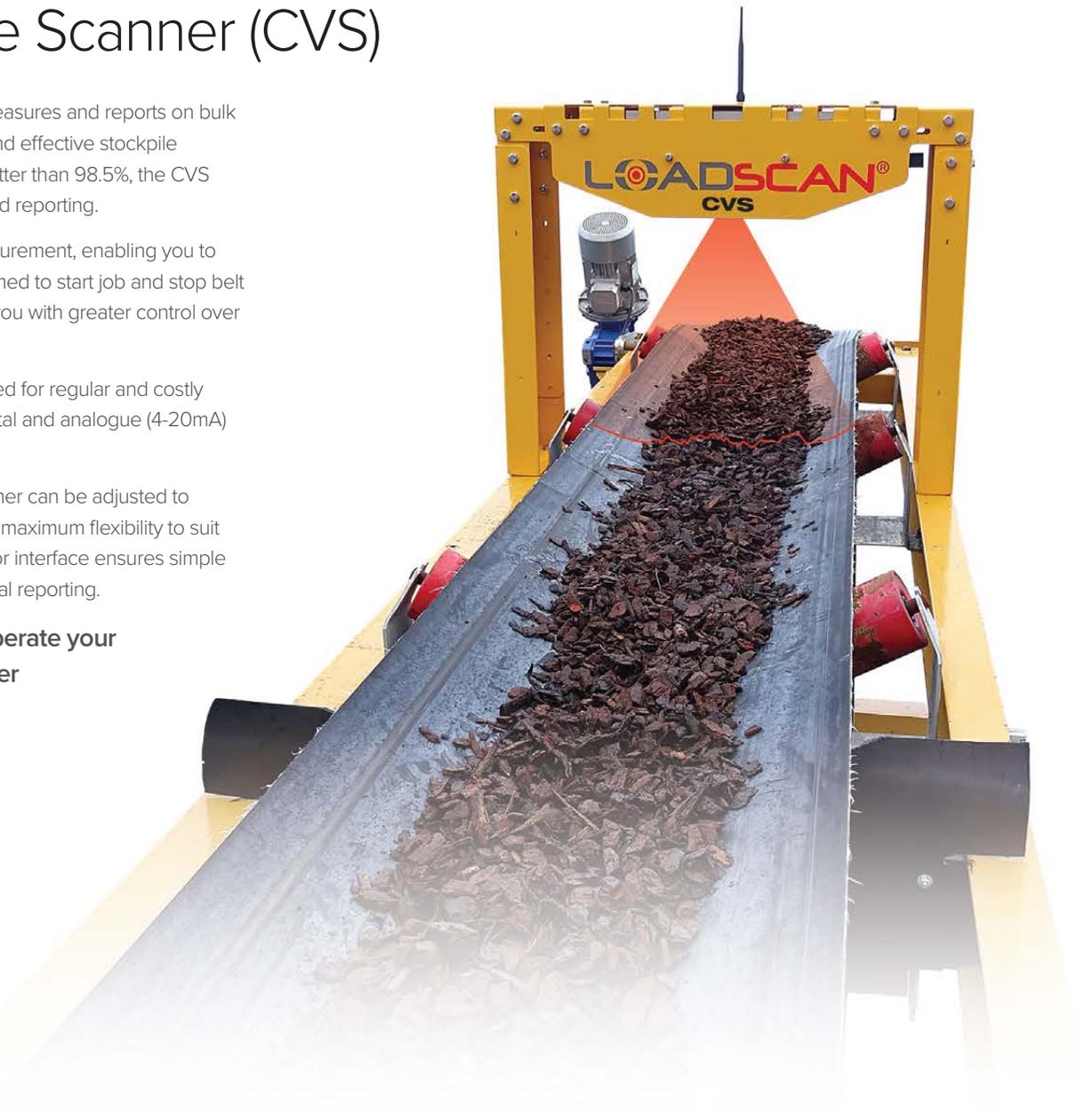
Loadscan's Conveyor Volume Scanner (CVS) measures and reports on bulk flow to give you enhanced production control and effective stockpile management. With a measurement accuracy better than 98.5%, the CVS enables accurate real-time inventory tracking and reporting.

The CVS provides highly accurate volume measurement, enabling you to set batching and job staging. It can be programmed to start job and stop belt when your target volume is reached, providing you with greater control over your production.

It's a non-contact technology, eliminating the need for regular and costly recalibration. The system allows for external digital and analogue (4-20mA) input and output.

Available in three sizes, the CVS conveyor scanner can be adjusted to mount easily on a variety of belt sizes, providing maximum flexibility to suit your conveyor system. The user-friendly operator interface ensures simple implementation and delivers powerful operational reporting.

**The CVS allows you to monitor and operate your conveyor belt on the fly, enabling better decision-making based on accurate, real-time data feeds.**



# Insightful, immediate data at your fingertips

The CVS records detailed bulk flow measurement and supplies you with the right information wherever you need it (in the palm of your hand or in the back office) so you can monitor and manage your conveyor belt's usage and productivity in real-time.

Your single laser continuously scans the full width of your (some other scanners measure a limited number of fixed positions across the belt) so you know exactly what's flowing by and can optimise your production rates.

Job: #00001243 — Maveric Bark & Mulch Supplies Weekly				
Volume sum	17.92	(m <sup>3</sup> )	Material Name	Wood Chip
Volume flow rate	652.80	(m <sup>3</sup> /hour)	Customer Name	Maveric Bark & Mulch
Belt speed	2.6	(m/s)	Target volume	500.00m <sup>3</sup>

Production Tracking

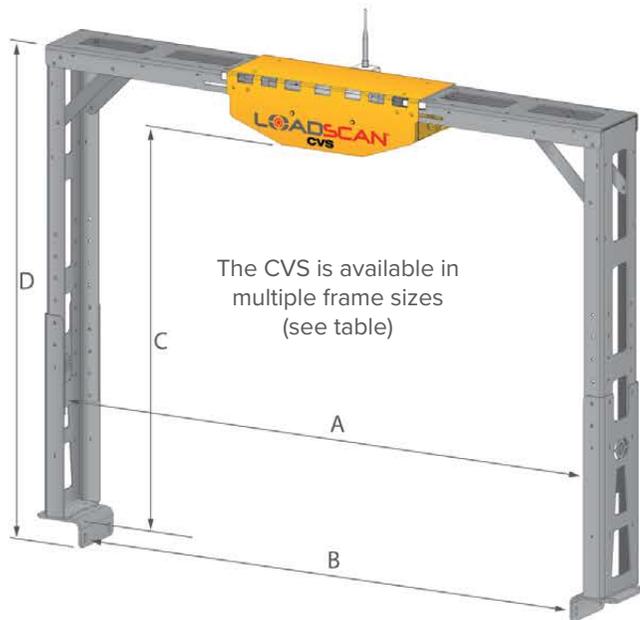


\*NOTE: The CVS is NOT a scale. Weight measurements are derived from the scanned volume and are calculated based on your own bulk conversion factors.

Unlike other optical belt scales, which provide some data but don't integrate easily, the CVS web-based user interface has been developed in conjunction with industry to ensure it's hassle-free and data rich.

## Load height measurement output

Identify large rocks and monitor load height on the belt (height/depth of the load material above the belt). Two measurement methods are supported:



### A range of frame sizes to fit most conveyor belts

In most cases your scan head will be attached to one of our expandable standard frames for a secure fit to your conveyor belt. The CVS system can be used with shallow and deep 'V' conveyor belt set-ups.

Dimension	Small frame		Medium frame		Large frame	
mm [inch]	Min	max	min	max	min	max
A	735 [28.94]	1185 [46.65]	1320 [51.97]	1770 [69.69]	1760 [69.29]	2210 [87.01]
B	495 [19.49]	1105 [43.50]	1080 [42.52]	1720 [67.72]	1520 [59.84]	2160 [85.04]
C	560 [22.05]	1010 [39.76]	790 [31.10]	1320 [51.97]	1090 [42.91]	1615 [63.58]
D	870 [34.25]	1320 [51.97]	1100 [43.31]	1630 [64.17]	1400 [55.12]	1925 [75.79]

NOTE:

- Small, Medium and Large frame extenders can be interchanged to produce extra high or extra wide variations for large belts up to 3000mm (118in) wide.
- All frame sizes are available in a Wide Temperature Range option (-40C to 60C / -40F to 140F).

# Benefits of conveyor volume scanning with the CVS

- ① Enhanced production control and effective stockpile management
- ① Enables better decision-making based on accurate, real-time data feeds
- ① Easily programme set batching and job staging for speciality mixes
- ① Set up daily/weekly jobs from your company dispatch software and feed to the CVS via its onboard API
- ① A viable measurement alternative to traditional weight-based systems (eliminates the need for regular and costly scale recalibration)
- ① Monitor and manage jobs from the back office



# Key product features of the Conveyor Volume Scanner



Real-time volume  
measurement



Eye safe LIDAR laser



Adjustable mounting bracket  
for various belt sizes



Built in WiFi  
2.4 or 5GHz



User-friendly  
operator interface



WiFi and network  
remote control



Onboard RESTful API  
for direct data access



Digital and analogue  
input/output

# CVS Scanhead Technical Specifications

Laser	
Ingress Protection	IP67
Ambient operating temperature	-30 to +50° C (-22 to 122°F), or -40 to +60°C (-40 to 140°F) for heavy duty variant
Power	19.2v to 28.8v DC
Class 1 eye-safe infrared-light laser diode	
Certification	Certified according to UL 60950-1:2007, designed and checked according to EN 60950-1 (2006-04) and EN 60950-1/A11 (2009-03). Vibration resistance: As per EN 60068-2-6 (2008-10), 5g RMS between 10 to 150Hz. Shock resistance: As per EN 60068-2-27 (2009-05), EN 60068-2-29 (1995-03). Single shock: 15g, 11ms. Continuous shock: 10g, 16ms

Wi-Fi	
Ambient operating temperature	-40 to +70°C (-40 to 158°F)
Power	9-30VDC PoE
Wireless standards	802.11b/g/n, 802.11a/n/ac
Operating Frequency	2.4 or 5GHz band and region software selectable (2400-2500MHz or 4900-5920MHz)
Certifications	Safety: CE, FCC, IC, EAC, ROHS

Embedded Single Board Computer	
Power	9 to 36VDC
Ambient operating temperature	-40 to +85°C (-40 to 185°F)
Processor	Intel® Celeron® 3955U Processor – 3.4Ghz
Operating System	Custom embedded Linux distribution
Operating System Drive	32Gb SSD
Certification	Safety: ROHS. EMC: CE, FCC.

Internal DC-DC convertor	
Power	Input: 9 to 36VDC. Output: 24VDC.
Operating temperature	-40 to +70°C (-40 to 158°F)
Certification	Safety: IEC 62368-1, UL 62368-1, AS/NZS 62368-1, EAC TP TC 004 approved. EMC emission: EN55032, EN55032, EN6100-3-2, EN6100-3-3. EMC immunity: EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6. Vibration resistance: 10 ~ 500Hz, 5G 10min./1cycle, 60min. each along X, Y, Z axes; Mounting: compliance to IEC61373

## Peripheral equipment

### Speed sensor

Proximity sensor	Ingress Protection: IP68. Power: 10 to 30VDC. Ambient operating temperature: -40 to +100°C (-40 to 212°F). Safe sensing range: 6.48mm (0.255in), (8mm max (0.315in)). Switching output: PNP. EMC: According to EN 60947-5-2.
Cable	Connectors: Amphenol male 7pin C16 connector / female M12, 4-pin connector. Conduit: 13mm corrugated PVC plastic.

### Mounting frame

Metal Work	Powder coated 5052-H32 aluminium
Mounting width	500 to 2000mm. (small, medium, and large frame sizes)

### External power supply

Ingress Protection	IP67
Power	Input: 90 to 305VAC, 47 to 63Hz. NZ standard single phase 3 pin power plug. Output: 24VDC
Operating temperature	-40 to +90°C (-40 to 194°F). Shut down over protection, recovers automatically after temperature goes down
Certification	Safety: UL8750 (type "HL"), CSA C22.2 No. 250.0-08; EN/AS/NZS 61347-1, EN/AS/NZS 61347-2-13 independent; GB19510.1, GB19510.14; KC61347-1, KC61347-2-13(except for D-type) approved. EMC emission: Compliance to EN55015, EN55032 (CISPR32) Class B, EN61000-3-2 Class C (@ load ≥ 60%); EN61000-3-3, GB17743 and GB17625.1, EAC TP TC 020. EMC immunity: Compliance to EN61000-4-2,3,4,5,6,8,11, EN61547, EN55024, light industry level (surge immunity Line-Earth 4KV, Line-Line 2KV), EAC TP TC 020. Vibration resistance: 10 to 500Hz, 5G 12min./1cycle, 72min. each along X, Y, Z axes.

## Optional extras

### I/O box

Enclosure ingress Protection	IP65
Digital I/O module	Power: 10 to 30VDC. Ambient operating temperature: -25 to +75°C (-13 to 167°F). EMC: ESD (IEC 61000-4-2) 4 kV Contact for Each Terminal. EFT (IEC 61000-4-4) +/-2 kV for Power.
Digital Switching Outputs	Number of outputs: 4. Type: Form A solid-state relay (bipolar). Maximum load voltage: 60VDC/VAC. Maximum load current: 0.7A @ 60V. Isolation voltage: 3000Vrms.
Digital Switching Inputs	Number of inputs: 2. Type: Wet contact (bipolar sink/source). ON voltage: 10 to 50VDC. OFF voltage: 0 to 4VDC. Input impedance: 10kΩ. Overvoltage protection: 70VDC. Isolation voltage: 3000Vrms. Minimum pulse width (for reset signal): 50ms.
Analog I/O module	Power: 12 to 48VDC. Ambient operating temperature: -25 to +75°C (-13 to 167°F). EMC: ESD (IEC 61000-4-2) ±4 kV Contact for Each Terminal and ±8 kV Air for Random Point. EFT (IEC 61000-4-4) ±2 kV for Power Line. Surge (IEC 61000-4-5) ±2 kV for Power Line.
4-20 mA current loop outputs	Number of outputs: 4. Current load resistance: 400Ω. Isolation voltage: 2500VDC.
4-20 mA current loop inputs	Number of inputs: 2. Overvoltage protection: 240Vrms. Overcurrent protection: 50mA max. at 110VDC/VAC max. Input impedance: 125Ω. Isolation voltage: 2500VDC.

We're obsessed with accuracy!

Our business is about improving the profitability of our global customers across the civil, mining, bark and mulch industries.

Over 20 years ago we invented and patented the original load volume scanner, and since then we've been the market leader in providing certified accurate and reliable load information. In fact, we are the only volumetric scanning manufacturer with internationally recognised Weights and Measurement Certifications. It ensures that when we measure your load you can be confident it's absolutely accurate to +/-1%. **It's your guarantee of peace of mind.**

Our advanced volume scanning and measurement systems provide the detailed insights necessary for you to optimise your production loading and throughput. Loadscan technology is enabling substantially improved operational and financial performance for forward-thinking companies across the world. **We've sold our systems globally into over 35 countries, and that's growing fast!**

If you have loads to be measured, no matter where you are, you can rely on Loadscan. **Because no-one does it more accurately than us.**

Contact us today to find out how we can transform your operational performance.



In 2020 Loadscan invested in a new purpose-built head office and assembly facility in Hamilton, New Zealand.





# LOADSCAN®

accurate payload measurement

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Partner:



\*Loadscan® is the only company worldwide to have achieved trade certification approval for truck volume measurements with a load volume scanning system. Our LVS system performs to the same accuracy as per Trade Approval Certificate 1556 (MAPPs NZ) and pattern approval Certificate 13/1/15 (NMI AUS). Loadscan systems are sold as 'monitor only' outside New Zealand and Australia but still perform to the same high tested accuracies.

[loadscan.com](http://loadscan.com)