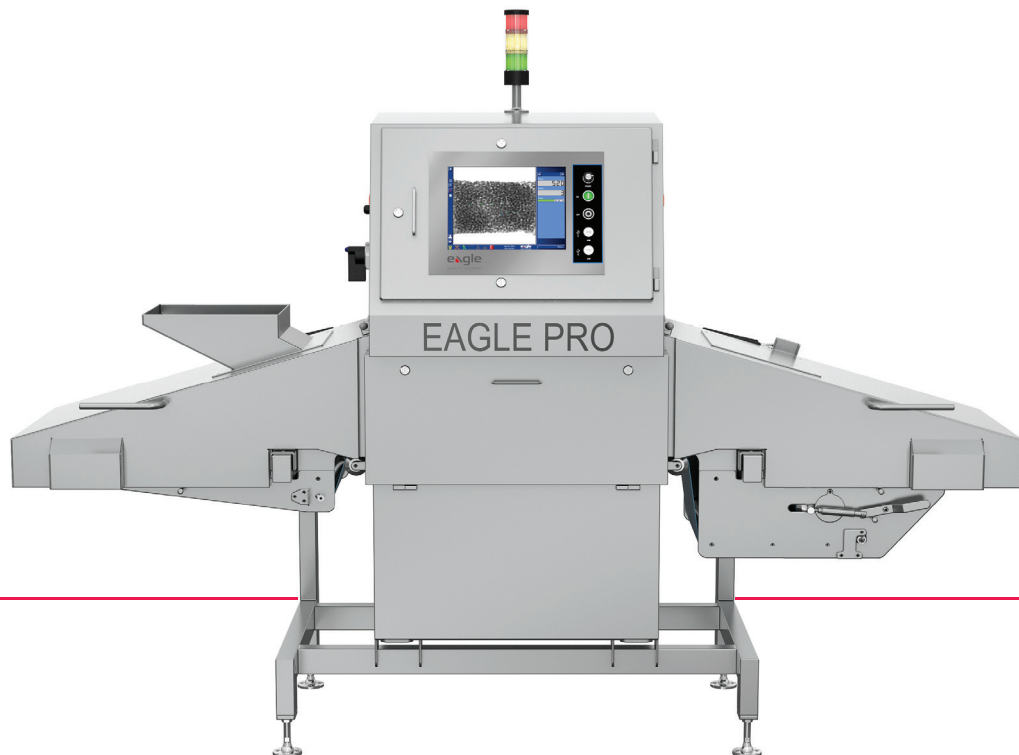# Eagle™ Bulk 415 PRO
X-ray Inspection System

The Eagle Bulk 415 PRO delivers superior contaminant detection of metal, stone, glass and dense plastics in unpackaged, dry bulk product applications.

The Eagle Bulk 415 PRO x-ray inspection system is designed to specifically address the unique handling requirements posed by bulk or loose products, as well as help food manufacturers comply with stringent HACCP protocols and food safety requirements. The x-ray machine's unique cupped belt construction is ideal for the efficient transport, containment, inspection and rejection of high-volume dry bulk product. This innovative belt design promotes uniform flow of product while reducing spillage and product loss.

The infeed chute has been placed so product falls onto the already cupped belt, away from the end conveyor to reduce dust and product blowback therefore reducing wear on bearings, and increasing machine longevity. These components and a rugged, stainless steel construction, combined with hinged end-louvers, which contain the conveyor assembly, allow safe, easy belt access for fast maintenance and cleaning, make the Eagle Bulk 415 the right choice for high performance inspection applications.

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Eagle™ Bulk 415 PRO

X-ray Inspection System

Applications

The cost to find and remove contaminants increases the further the product moves through the production line. The Bulk 415 PRO machine inspects and rejects bulk product prior to packaging or further processing. This saves money due to reduced machine wear, fewer wasted packaging materials, and loss of product caused by removal of contaminants after packaging. Typical applications include:

- Beans
- Cereals
- Coffee
- Corn
- Grains
- Nuts
- Rice
- Sugar

MDX Advantage

Applications such as vegetables, nuts, cereals and other food ingredients can be challenging for standard x-ray systems as contaminants can prove difficult to detect in 'busy' x-ray images. However, Eagle's MDX™ option overcomes these challenges by using dual energy technology to discriminate materials by chemical composition. Therefore a system equipped with MDX is able to detect contaminants that traditional x-ray systems may not be able to detect. This enables the Bulk 415 PRO with MDX to more clearly identify any foreign contaminants contained within the product flow.

Software and Reports

The Repository™ feature of the Eagle SimulTask™ software allows convenient review of production statistics, rejected and manually-saved images through the user interface. Results and reports can be easily viewed via graphical histogram and timeline charts. Reports are configurable to help streamline production line and filler feedback for quick adjustments. Information can be transferred to a PC or network via USB memory stick, with statistics and reports viewable using a standard internet browser. All Bulk 415 PRO machines are also network capable, maximizing uptime by allowing remote access by Eagle expert technicians to quickly diagnose and often correct issues without dispatching a technician for on-site service.

Rejecter

An innovative four-lane flap rejection mechanism, each covering one quarter of the belt, helps to ensure contamination is removed from the production process while keeping the ejection of good product to a minimum. This not only cuts the risk of substandard product reaching end consumers, but also reduces product waste, protecting profits and enhancing efficiency.

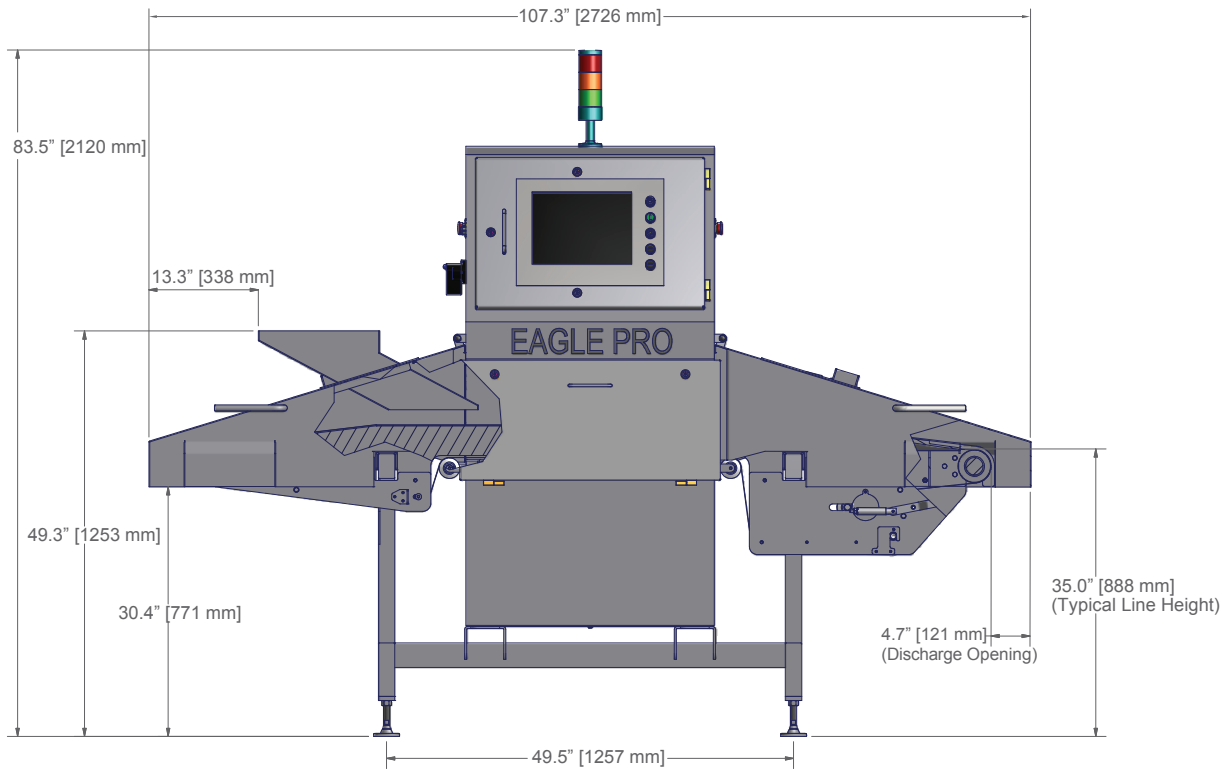### Eagle™ Bulk 415 PRO Cupped Belt and Hinged Louvers
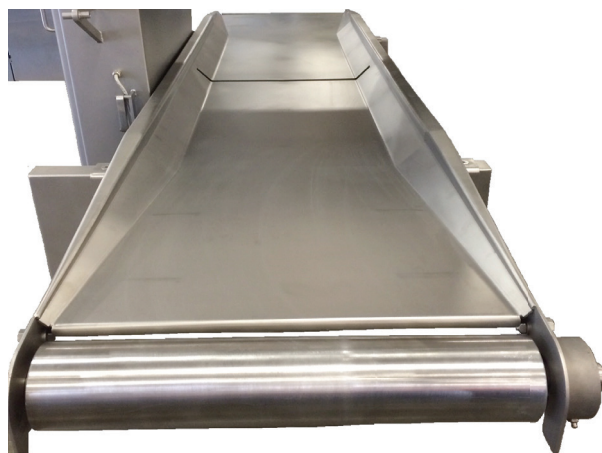
Eagle™ Bulk 415 unique cupped belt design keeps product centered on the belt, promotes uniformity of flow and reduces spillage. The stainless formed conveyor bed reduces belt wear and improves tracking. Hinged louvers allow easy access for cleaning, maintenance and belt change out is simple with minimal downtime.
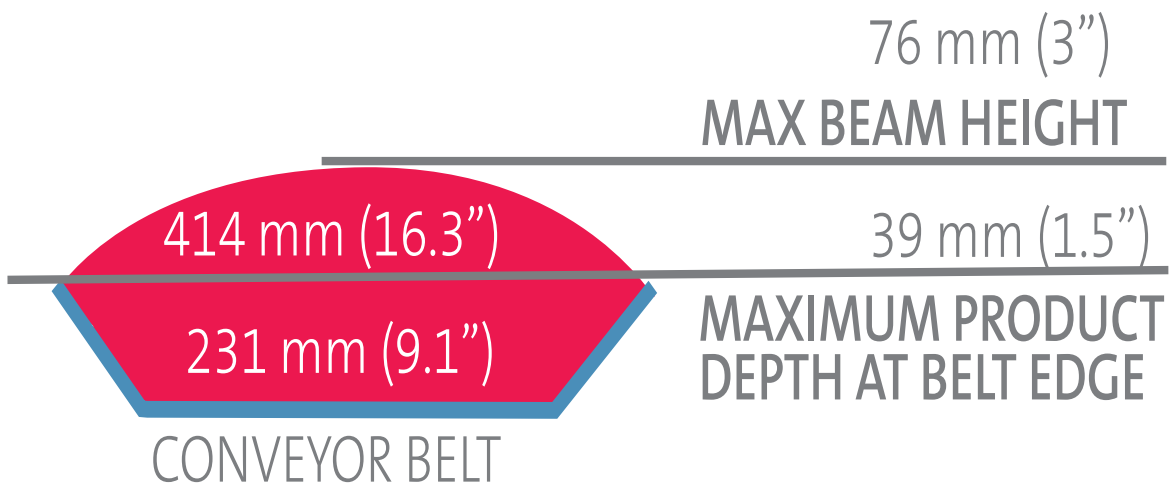
Eagle™ Bulk 415 PRO Features and Benefits

Unique cupped belt design keeps product on the belt, promotes uniformity of flow and reduces spillage	✓
Proprietary SimulTask™ software provides advanced image analysis and is easy to use while delivering high performance inspection results	✓
Powerful image analysis routines, on-screen diagnostics and safety system status visualization	✓
Tool-less belt removal promotes ease of cleaning and maintenance for maximum uptime	✓
CAT 3 safety circuit with system status visualization comes as standard	✓
TraceServer™ option manages critical inspection data on a PC or Network	✓

Dimensions

107.3" [2726 mm]

83.5" [2120 mm]

13.3" [338 mm]

EAGLE PRO

49.3" [1253 mm]

30.4" [771 mm]

35.0" [888 mm]
(Typical Line Height)

4.7" [121 mm]
(Discharge Opening)

49.5" [1257 mm]

Beam Geometry Diagram

76 mm (3")

MAX BEAM HEIGHT

414 mm (16.3")

39 mm (1.5")

231 mm (9.1")

MAXIMUM PRODUCT DEPTH AT BELT EDGE

CONVEYOR BELT

Eagle™ Bulk 415 cupped belt design allows for inspection of up to 39mm (1.5") of product depth at the edge of the belt.

Specifications

Model	Eagle™ Bulk 415 PRO
Conveyor Width & Length	485 mm Wide x 2500 mm Long (19.1" Wide x 98.4" Long)
Line Height	864 mm to 1067 mm, ±50 mm (34" to 42", ±2")[1]
Conveyor Speed Range	17 to 64 m/min (55 to 210 FPM) [1]
X-ray Power	140kV @ 1mA (140W) Standard, or 140kV @ 3.5mA (490W) Optional
X-ray Type & Emissions	Single beam; x-ray emissions <1 µS/hr; 21 CFR 1020.40 and 21 CFR 179.21 compliant
Detector Resolution	0.4 mm, 0.8 mm, or 1.2 mm pitch single energy, or 1.2 mm pitch MDX™ dual energy detector
Display & Operating System	15" TFT color touch screen, 250GB memory, Windows Xp Embedded OS, Eagle SimulTask™ 4 Imaging Software available in 19 different user interface languages
Safety	(2) E-Stops, LTO Main Disconnect, Category 3 (EN954), PLd (EN13849) safety circuit with system visualization via machine user interface
Communications	(2) USB 2.0 ports, (1) Ethernet 10 Base-T/100 mbps port, (1) RS232 serial port
I/O	(4) Input signals, (4) reject output signals, (5) output signals
Ingress Protection & Finish	IP65 Ingress Protection, Type 304 stainless steel bead blasted enclosure
Operating Range	0°C to 40°C (32°F to 104°F) 25% to 90% Relative Humidity Non-condensing
Power Requirements	230 VAC, +10/-15%, 50/60 Hz, 20 Amp, single phase
System Cooling	4000 BTU Air conditioner
Air Requirements	5.5 BAR (80 psi), 3/8" (9.5 mm) line, dry & filtered when supplied with rejecter
Belt Specification	White TPU food grade seamless belt operating range -30° to 80°C (-22° to 176°F); Compliant to EC 1935/2004 & Regulation (EU) No 10/2011 & Directive 2002/72/EC; FDA 21 CFR Parts 170-190
Reject	24VDC Signal (Standard), 4 Lane Flap (Optional)
Options & Accessories	MDX Dual Energy, TraceServer™ Software, Low Air Pressure Sensor

[1]Additional configurations available upon request.

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