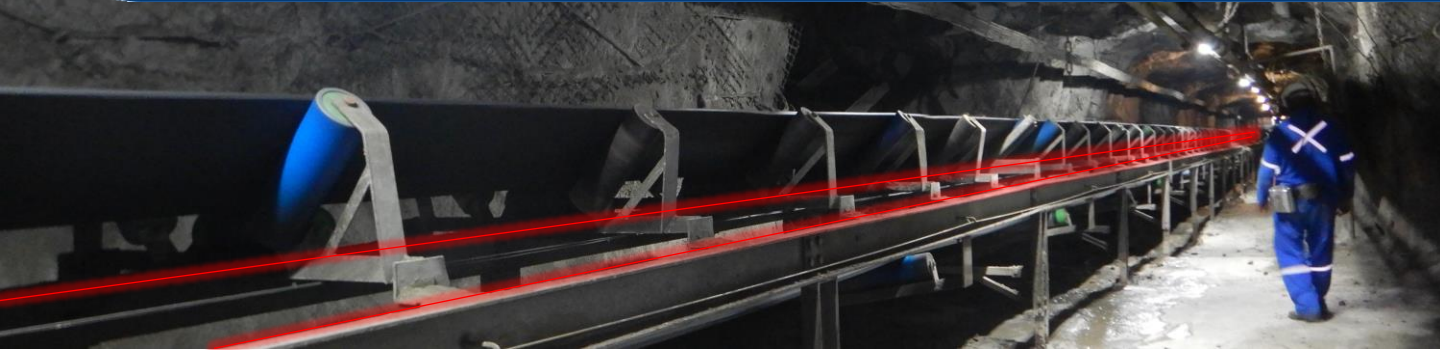


# LUNA

# EXTRACT

## Improving Conveyor Belt Availability, Production, and Safety

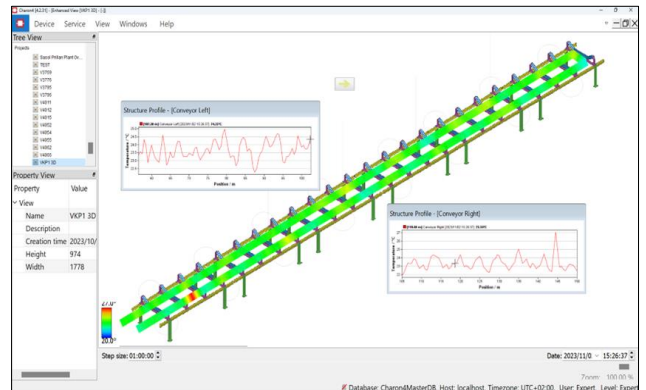


The **LUNA EXTRACT** system transmits laser pulses through a retrofitted fibre optic cable along the conveyor system.



Sensor	Conveyor Belt	Line	Stand	Bin Index	Knocking	Squealing	Rattling	Squeaking	Rumbling	Overall Severity
1	CB 1	48	188	1	0	0	0	0	1	4
1	CB 1	48	189	1	0	0	0	0	6	9
1	CB 1	49	190	2	0	0	0	0	7	13
1	CB 1	49	191	2	0	0	0	0	7	13
1	CB 1	49	192	2	0	2	1	1	7	19
1	CB 1	49	193	2	0	1	1	1	7	17
1	CB 1	50	194	2	0	0	0	0	7	13
1	CB 1	50	195	2	0	1	1	1	7	17
1	CB 1	50	196	2	0	4	1	1	7	23
1	CB 1	50	197	3	0	7	1	1	7	32
1	CB 1	51	198	2	0	5	1	1	7	25
1	CB 1	51	199	1	0	7	0	0	7	24
1	CB 1	51	200	1	0	7	0	0	7	24
1	CB 1	51	201	1	0	2	0	0	7	14
1	CB 1	52	202	1	0	0	0	0	7	10
1	CB 1	52	203	1	0	0	0	0	5	8
1	CB 1	52	204	0	0	0	0	0	1	1
1	CB 1	52	205	0	0	0	0	0	0	0
1	CB 1	53	206	0	0	0	0	0	0	0

As bearings wear, they vibrate, transmitting vibrations through the conveyor's frame and onto the cable. These vibrations cause microscopic changes in the backscattered light. The **LUNA EXTRACT** system processes this data, generating a "heat map," and alerts operators about potential failures.



The **LUNA EXTRACT** system measures the distributed temperature profile along the entire conveyor, alerting to conditions caused by frictional heating that could potentially lead to fires.

**LUNA EXTRACT** conveyor condition monitoring system will lead to significant improvements in overall performance, competitiveness, and safety of your operation.

- 5% reduction in hours of planned maintenance.
- 10% reduction in hours of unplanned maintenance.
- 30% reduction in idlers replaced annually as a preventive measure.
- 50% reduction in the number of people required for belt checking.
- 50% reduction in man-hours spent on walking the belt.
- 90% reduction in idlers replaced annually due to failure.
- 99% reduction in potential friction related fires, "DMRE mandated".

### Key Features

- Reliable - MTBF 40+
- Long range, high resolution
- Detailed Reporting
- 24/7 Monitoring
- Predictive maintenance
- Fully Certified
- Rapid ROI
- ZERO Harm

# SPECIFICATION



LUNA EXTRACT	Vibration/Acoustic DAS	Temperature DTS
Sensing Technology	Coherent Optical Time Domain Reflectometry (COTDR)	Optical Frequency Time Domain Reflectometry (OFDR)
Monitoring Distance Conveyor C-C	14km	24Km / 6km Full Redundancy
Optical Power Budget	4dB@ 1550 nm for 7 km	3dB@ 1550 nm for 6 km
Number of Detection Channels	2x Channels	2x and 4x Channel options
Measurement Resolution	Nominal: 0.5 m (1.6 ft), 2000 measurement points/Km 0- 20KHz	Nominal: 0.25 m (0,8 ft) , 1000 zones per channel of sensing fiber, 0.01°C
Linestand Location Accuracy	± 2 Line stands (If spaced 1m apart)	
Cut Resilience	Sensing works to within 20 m of a sensor fiber cut	
Operating voltage	AC 110 to 240 V	DC 12 to 48 V, AC 110 to 240 V
Power consumption	280 W typical, 380 W max	25W (max. 45 W/60°C)
Programmable I/O	4 inputs	4 inputs (optional up to 40), 12 potential-free outputs (optional up to 106)
Communication interfaces	2 x E2000/APC single mode optical connectors, 3 x USB3 ports 1 x VGA port, 2x Ethernet TCP/IP	2 x E2000/APC multi mode optical, 2x Ethernet TCP/IP, RS232, USB
Communication protocols	FOSS SDK in C or .NET	LON, MODBUS TCP/IP
Operating temperature	5°C to 45 °C	-10 °C to +60 °C
Humidity (noncondensing)	80% rel.	≤95 % rel.
Protection class	IP51	
Dimensions (H x W x D)	4U high in 19" Rack: 175 x 483 x 553 mm	3U high in 19" Rack :135 x 449 x 290 mm
Weight	24kg	13kg
Electrical Safety	CE IEC/UL 61010-1. Low voltage directive.	
EMC	EN 61326-1, EN 50130-4, EN 61000-6-2,3. FCC 47 CFR Ch. 1 part 15	
Laser safety	Class 1M (EN 60825-1,-2)	
Environmental compliance	RoHS directive, WEEE directive	
Fire	EN 54-22 A1N, BN, CN, UL521 / ULC S530, FM	

