

TOUGH EYE™

The industry-leading, self-cleaning ControlMaster® ToughEye™ range of cameras are suitable for any mining and industrial application where a clear view is critical to the success of the operation.

ToughEye™ is a field-proven, rugged, single-piece design that delivers optimal image quality via analog and IP video outputs.

The ToughEye™ cameras provide a zero-maintenance¹ operation and RCT can customise installations for almost any application.

¹ *No maintenance necessary for the rated life of the camera: 60,000 or 90,000 cycles.*



BENEFITS

- ✓ Reduce downtime
- ✓ Increase safety
- ✓ Reduce equipment damage

EFFECTIVE AGAINST:

- ✓ Abrasive dust
- ✓ Mud
- ✓ Oil and grease
- ✓ Water

ENTIRELY SELF-SUFFICIENT, REQUIRING:

- ✓ No detergent
- ✓ No hoses
- ✓ No tanks
- ✓ No nozzles
- ✓ No refills

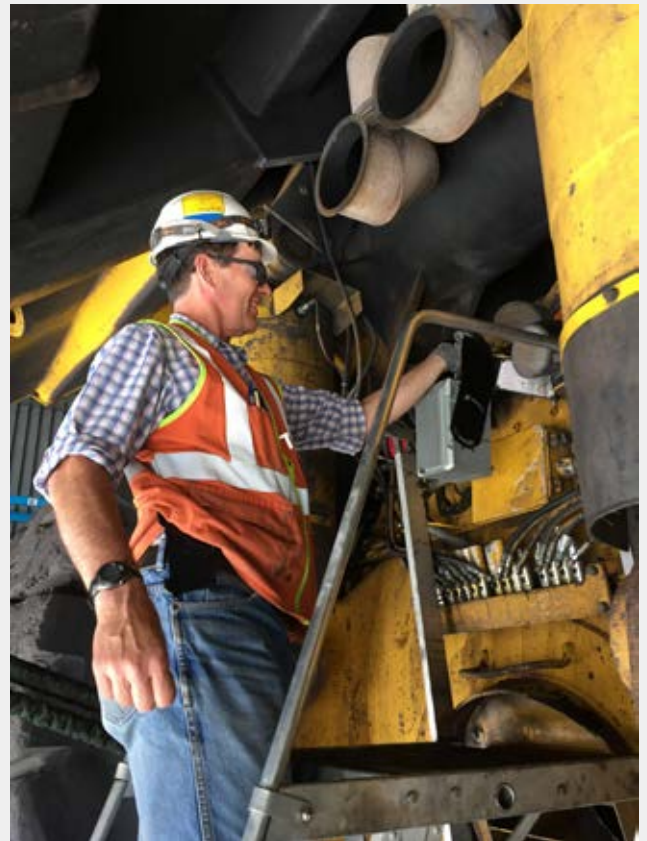
PROVEN RELIABILITY

The rugged one-piece design ToughEye™ is tough enough to withstand extreme temperatures. As a result, it is widely used at some of the coldest mines in Canada, Russia, and Chile as well as some of the hottest sites in Australia and Africa.



EASY INSTALLATION

The camera only requires electricity and a data connection and once installed, it will clean itself unassisted for years, eliminating the need for production stoppages, working in confined spaces, and/or working at heights.



APPLICATIONS

TELEREMOTE AND AUTONOMOUS EQUIPMENT

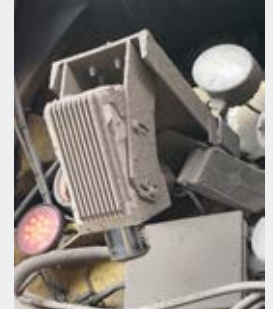
ToughEye™ is the ideal choice for remote controlled equipment like drills and excavators as it completely eliminates manual intervention and provides unchanged image clarity for several years.



MINING HAUL TRUCKS

ToughEye™ is used by some of the world's largest mining companies to:

- ✓ Increase safety
 - Provides clear rear vision
- ✓ Reduce tyre damage cost
 - Avoid boulders when reversing
 - Avoid hard impact with berms
- ✓ Increase productivity
 - Assists in manoeuvring in tight spots



MINING DRILLS

Utilising ToughEye™ on drilling masts takes the guesswork out of drilling by giving operators the vision needed to ensure that the threaded joint between two pipes is complete before releasing the pipe. Regular cameras operating in this environment are exposed to the mist of oil and grease leads to accumulation of debris and loss of vision. ToughEye™ guarantees vision, helps to eliminate the downtime associated with dropped steel, and alleviates operator's neck strain in the process.



MATERIAL CHUTES

Monitor crusher pockets and surge bins and prevent clogs, spillages, and conveyor chain damage with ToughEye™ cameras; see the material build up before downtime occurs.

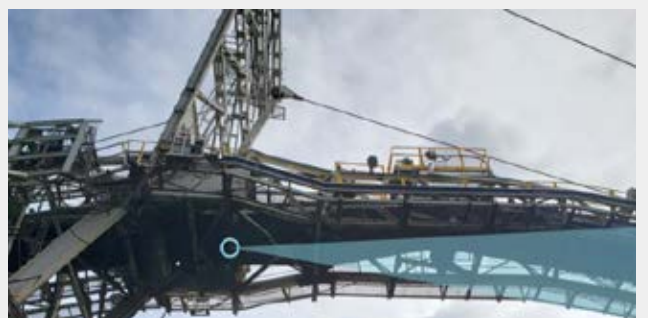
The images to the right is from a ToughEye™ that spent 14 months inside an active material chute that completed more than 90,000 cleaning cycles. No cleaning or maintenance was performed during that time as the customer could see an impending clog 60-75 minutes before its occurrence – reducing downtime by 60 per cent.



SHIPLOADERS

Used by some of the most technologically-advanced bulk material handling ports to:

- ✓ Prevent shiploader collision with the vessel
- ✓ Reduce downtime
- ✓ Increase safety
- ✓ Reduce loss of product
- ✓ Reduce equipment damage



SPECIFICATIONS

CAMERA

Image Sensor: 2.34 MP
Resolution (HxV): 2000 x 1241
Min Illumination: 0.1Lux/F2.0 (No illumination required for IR version)
IR Illumination Distance: 15m [50'] est
Horizontal FoV: 80°, 120°

Video (IP): H.264 (1920x1080) | MJPEG (1280x720)

Video (Analog): 720x486 (NTSC), 720x576 (PAL)

Network: RTSP, RTP, UDP, RTCP, IGMP, HTTPS
ONVIF: Profile S
Recording: 32GB Storage - Continuous, Motion

PHYSICAL

Dimensions: 297mm x 170mm x 130mm (11.7" x 6.7" x 5.1") (Extended)
241mm x 170mm x 130mm (9.5" x 6.7" x 5.1") (Retracted)

Weight: ToughEye™: 5.9kg (13lbs)
Standard bracket: 2.3kg (5lbs)

Clean Cycle: Configurable Timer Based, Electrical Trigger (Up to 24V)

Max Wattage (Ext Temp): 96W

Input Voltage: 24V

Temperature Range: -40°C to 50°C (-40°F to 122°F) (Extended Temperature)
5°C to 50°C (41°F to 122°F) (Non-extended Temperature)

IP Rating: IP68

Vibration: Tested to 11g

PARTS

CAMERAS (80°)

15724	CAMERA STANDARD 60K 5°C to 50°C (41°F to 122°F) DUAL OUTPUT 60000 CYCLE
15725	CAMERA STANDARD 60K IR 5°C to 50°C (41°F to 122°F) DUAL OUTPUT 60000 CYCLE
15726	CAMERA STANDARD 90K H/D 5°C to 50°C (41°F to 122°F) DUAL OUTPUT 90000 CYCLE
15727	CAMERA STANDARD 90K IR H/D 5°C to 50°C (41°F to 122°F) DUAL OUTPUT 90000 CYCLE
15728	CAMERA EXTREME 60K LENS -40°C to 50°C (-40°F to 122°F) DUAL OUTPUT 60000 CYCLE
15729	CAMERA EXTREME 60K IR -40°C to 50°C (-40°F to 122°F) DUAL OUTPUT 60000 CYCLE
15730	CAMERA EXTREME 90K LENS -40°C to 50°C (-40°F to 122°F) DUAL OUTPUT 90000 CYCLE
15731	CAMERA EXTREME 90K IR -40°C to 50°C (-40°F to 122°F) DUAL OUTPUT 90000 CYCLE

CAMERAS (120°)

15863	CAMERA STANDARD 60K 5°C to 50°C (41°F to 122°F) DUAL OUTPUT 60000 CYCLE
15864	CAMERA STANDARD 90K H/D 5°C to 50°C (41°F to 122°F) DUAL OUTPUT 90000 CYCLE
15865	CAMERA EXTREME 60K -40°C to 50°C (-40°F to 122°F) DUAL OUTPUT 60000 CYCLE
15866	CAMERA EXTREME 90K H/D -40°C to 50°C (-40°F to 122°F) DUAL OUTPUT 90000 CYCLE

CABLES

15734	CABLE EXTENDER 3M MAIN DUAL OP (-40°F RATING EXTREME TEMP)
15735	CABLE 5M MAIN DUAL OUTPUT (-40°F RATING EXTREME TEMP)
15736	CABLE 10M MAIN DUAL OUTPUT (-40°F RATING EXTREME TEMP)
15737	CABLE 15M MAIN DUAL OUTPUT (-40°F RATING EXTREME TEMP)
15738	CABLE 22M MAIN DUAL OUTPUT (-40°F RATING EXTREME TEMP)
15739	CABLE 25M MAIN DUAL OUTPUT (-40°F RATING EXTREME TEMP)
15845	CABLE BREAKOUT
15862	CABLE BREAKOUT EXTENDER 1M
15857	CABLE BREAKOUT POWER 3M

ACCESSORIES

15800	VIBRATION MOUNT TO SUIT CAMERA
15859	MONITOR 7" WITH RAM MOUNT & S/S BRACKET
15858	JUNCTION BOX DUAL OUTPUT ANALOG 1 CH

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