

Diamec Smart 6M

Mobile core drilling rig

Hole diameter: A, B, N and H



Mobile productivity

The Diamec Smart 6M from Epiroc combines the best of two worlds – the high productivity and accuracy of a Diamec core drilling rig, with the mobility of a well-proven, robust carrier designed for underground use. The Diamec Smart 6M offers unparalleled productivity in underground exploration.

+ Main benefits

Highly mobile which increases productivity and lowers operational costs

Fast and safe positioning means less time wasted between holes

Built-in versatility makes the Diamec Smart 6M difficult to beat. It's available with various feed lengths, standard and deep hole feed cylinders and three different rotation heads

A robust boom system with roll-over capability boosts flexibility and helps to reduce running costs.

To enhance safety and comfort, an optional protective guard is fitted.



A handy remote radio control unit allows the driller to get a good view of the work area during critical positioning operations.



The rear camera option increases safety by providing the operator with a greatly enhanced view behind the machine.



The optional HD oil cooler and Trido pump are both mounted on a swing arm to improve access for servicing.



Discover more about the Diamec Smart 6M.

Optional rod handling system reduces operator fatigue and increases safety.

A spacious, air-conditioned cabin is available which provides the operator with a safe and comfortable working environment for both drilling and tramming.

90 kW Tier 3 or Tier 4 Final/Stage 5 diesel engine for tramming.

Dual-control cable reel



Epiroc's well-proven articulated, 4-wheel drive underground carrier provides both excellent stability and terrainability.

An enclosed canopy helps to reduce noise whilst gullwing doors provide easy access for service and maintenance.

Move fast – drill fast

Diamec rigs have an advanced, versatile and compact design. The Diamec Smart 6M further enhances this flexible design by adding another dimension – mobility. The carrier is based upon the well-proven Boomer S2 platform.



+ Highly maneuverable

The Diamec Smart 6M makes the drilling setup process much faster than a skid mounted rig. It also allows for easy positioning – even at the most difficult of angles. The articulated carrier allows it to bend around difficult contours whilst the highly maneuverable boom allows the drill to be positioned in exactly the desired location. This enables the operator to complete the hole and move to the next location quickly and efficiently.



+ Ergonomic and safe

The controls are logically placed to make life easy for the operator. The light-weight control panel can be positioned inside or outside the cabin so the driller is able to choose the best place to work. The FOPS and ROPS-approved cabin offers a safe and pleasant environment to work in. As the drill is mounted on the boom, the operator is able to maintain a safe distance away from the drilling area during operations. The rig also features an integrated guard which opens and closes as necessary during drilling to allow rods to be added using the rod handling system.



+ Increase productivity and lower operational costs

The Diamec Smart 6M has an advanced Rig Control System so it can be operated automatically. Drilling parameters are set and monitored from the touch screen on the control panel. The automatic features such as auto-drilling, can drastically improve bit life when compared to manual drilling. These features also reduce the risk of core blockage and hole deviation, which minimizes drilling errors and operator fatigue.



A comprehensive service offering

Even the best equipment needs to be serviced regularly to make sure it sustains peak performance. An Epiroc service solution offers peace of mind, maximizing availability and performance throughout the lifetime of your equipment. We focus on safety, productivity and reliability.

By combining genuine parts and an Epiroc service from our certified technicians, we safeguard your productivity – wherever you are.



+ Data logging and Exploration Manager

All Diamec Smart rigs, offer added value via a standard data logging feature, Measure While Drilling (MWD) which records drilling parameters. Optional added operational data logging makes it possible to log activities directly. It also enables automatic logging of key functions during drilling. Rigs also create a log file for major events and warnings. The Exploration Manager software presents all this data in a comprehensive way. It provides a full overview of the drilling process. Users have the ability to analyze data, find improvements and generate various reports. Exploration Manager improves productivity, lowers operational costs and provides fast and professional fleet management.

Technical specifications – drilling module

Core drilling hole length capacity

These figures serve as guidelines only. They are calculated with available pull/feed force, weight of drill string in water filled hole, average WOB and reserve for breaking solid core in rock with 10MPa Tensile Strength. Epiroc cannot guarantee these capacities will be reached in all working conditions due to varying factors such as ITH used, conditions of the ground and differences in operation.

Hole size	Standard				Deep hole			
	Vertical down		Vertical up		Vertical down		Vertical up	
	Metric	US	Metric	US	Metric	US	Metric	US
AO/AT	1 445 m	4 741 ft	985 m	3 232 ft	-	-	-	-
BO/BT	1 065 m	3 494 ft	600 m	1 969 ft	1 530 m	5 020 ft	920 m	3 019 ft
NO/NT	715 m	2 346 ft	340 m	1 116 ft	1 080 m	3 543 ft	575 m	1 887 ft
HO/HT	335 m	1 099 ft	155 m	509 ft	580 m	1 903 ft	310 m	1 017 ft

Wireline winch capacity is 1 300 m with 4.75 mm wire

Rotation unit alternatives

Model	80CC A-N		110CC B-H		160CC B-H	
Rod sizes:	A-N		B-H		B-H	
Max rotation speed	1 640 rpm		1 400 rpm		1 190 rpm	
Power	Hydraulic motor		Hydraulic motor		Hydraulic motor	
	Metric	US	Metric	US	Metric	US
Max torque	1 115 Nm	882 ft lbf	1 634 Nm	1 205 ft lbf	2 390 Nm	1 762 ft lbf
Spindle (inner diameter)	78 mm	3.1'	101 mm	4'	101 mm	4'
Chuck axial holding force	100 kN	22 480 lbf	150 kN	33 729 lbf	150 kN	33 729 lb
Weight:	162 kg	357 lb	270 kg	595 lb	282 kg	622 lb

Feed frame alternatives

Model	850		1800		1800 Deep hole	
	Metric	US	Metric	US	Metric	US
Feed stroke length	850 mm	33.5'	1 800 mm	71'	1 800 mm (71 in)	71'
Feed force / Pull force	65 kN	14 600 lbf	65 kN	14 600 lbf	89 kN	20 010 lbf
Max feed speed:	1.0 m/s	3.28 fps	1.0 m/s	3.28 fps	0.8 m/s	2.6 fps

Rod holder

Hydraulically open / gas pressure close. The rod holder closes instantly on hydraulic pressure loss.

Max rod size:	89 mm (3.5 in)
Bore (without jaws):	102 mm (4.0 in)
Bore (without covers):	170 mm (6.7 in)
Axial holding force:	45 kN (10,120 lbf)
Axial holding force TC inserts:	90 kN (20,240 lbf)

Optional flush pump

The flush pumps are designed for both mud and water flushing. The distribution block is prepared for the mounting of an accumulator, adjustable steady flow valve and other optional equipment.

Model	Trido 80H		Trido 140H	
	Metric	US	Metric	US
Flow	80 L/m	21 gpm	140 L/m	37 gpm
Pressure	50 bar	700 psi	70 bar	1 000
Weight	148 kg	327 lb	230 kg	507 lb

Wireline winch

	Metric	US
Capacity (4.75 mm wire)	1 300 m	4 265 ft
Pull min. (full drum)	4 kN	899 lbf
Pull max. (empty drum)	11.2 kN	2 523 lbf
Line speed min (empty drum)	88 m/min	287 ft/min
Line speed max (full drum)	246 m/min	806 ft/min
Weight (without wire)	120 kg	287 lb
Level wind angle	Adjustable	

Diamec Smart 6 control system and interface

Control system type	Epiroc Rig Control System (RCS)
Display	12" touch screen
Controls	Joysticks, control knobs and foot pedal
Data logging	Internal memory
Data export	USB port

Technical specifications

● - Standard ○ - Option

Drilling power unit

Electrical power unit, x2 ABB electric motors, variable flow hydraulic pumps	
Electric motor rating	90 kW (121 hp) - SF 1.0 55 kW (74 hp) - SF 1.15
Installed power	145 kW (195 hp) 153 kW (206 hp) with SF
RPM	RPM at 50 Hz = 1 475 / RPM at 60 Hz = 1 780
Oil tank	223 liters (59 US gals)
Cooler	Water oil cooler
Main pump	Rexroth A11, 145 cc
Service pump	2 x Rexroth A10 in tandem, 71 cc + 45 cc

Diesel Power Pack - Trimming

Diesel engine	Standard	Optional
Model	Deutz TCD 3.6, Tier 3/Stage IIIA	Deutz TCD 3.6, Tier 4F/Stage 5
Max output	90 kW (121 hp)	
Max RPM	2 300 rpm	
Idling RPM	950	

Breaking systems

Drive brake	Hydraulic applied, dual circuit
Parking/emergency brake	Spring Applied, Hydraulic Release (SAHR)

Maximum noise levels

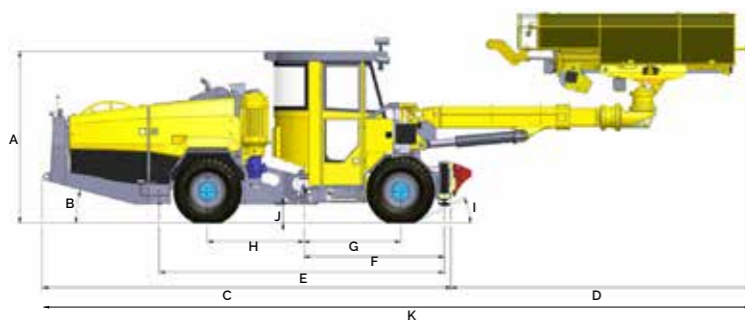
A-weighted sound pressure level LpA (dB)*	
Drilling/measured in cabin	75 dB
Electric motors idling/measured in cabin	65 dB
Drilling/measured 4 meters from rig**	88 dB

*Dual-number declaration with measurement according to EN16228 with tolerance of ±3dB.
**Calculated based on A-weighted sound power level LWA (dB) - 108

Additional optional equipment and accessories

Bracing device	Device suitable for use in narrow tunnels and drifts. It allows simple anchoring of the feed frame between the floor and roof/wall of the gallery, drift or tunnel.
Water collector	The water collector seals against the rock face and allows collection of flush water.
Keyhole wall bracket	Enables anchor hole drilling in the wall or ceiling. Available for A-N.
Operational logging/Exploration Manager	Comprehensive operational data logging and analyzing tool for Diamec Smart rigs only.
Dimension kits	Steel jaw kits and Jaws kits with TC inserts in different sizes for the rotation unit and rod holder.
Hydraulic test box	Hydraulic measuring and testing instrument.
RCS service tool box	RCS measuring and testing instrument.

Carrier dimensions



	Metric	US
Cabin*	2 799 mm	110"
A Canopy - roof raised*	2 830 mm	111"
Canopy - roof lowered*	2 155 mm	85"
B Angle	15°	
C Length	6 672 mm	263"
D Fully retracted	3 970 mm	156"
Fully extended	5 400 mm	213"
E Length	4 650 mm	183"
F Length	2 290 mm	90"
G Length	1 575 mm	62"
H Length	1 575 mm	62"
I Angle	26°	
J Height	301 mm	12"
K Total length	Fully retracted	10 642 mm 419"
	Fully extended	12 072 mm 475"

* If optional raising kit for operator station is fitted, the height increases by 140 mm

Carrier

Hydrostatic transmission	●
Articulated steering ± 42° steering angle	●
Four-wheel drive	●
Electric system 24 V	●
Batteries 2 x 70 Ah	●
Automatic differential lock on axles, limited slip	●
Tires 12.00 x R20	●
Tramming lights 24 V DC, LED	●
Working lights 24 V DC, LED	●
Illuminated stairs, LED	●
Fuel tank, volume 95 liters	●
Central lubrication system	●
Cable guide on the cable reel	○
Automatic lubrication system	○
Fire suppression system ANSUL (manual or auto-release Checkfire)	○
Rig washing kit	○
Boot washing kit	○
Manual lubrication kit (cartridges only 400 g)	○
HD Air Oil Cooler	○

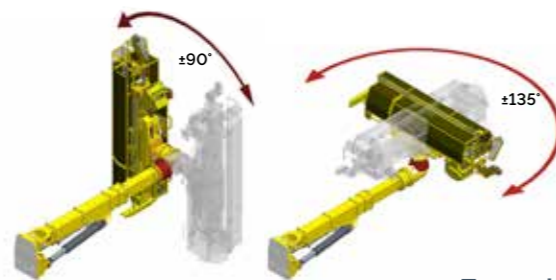
Cabin

FOPS/ROPS certified cabin	●
Air conditioning unit - cooling only	●
Fixed seat	●
Mounting height increased by 140 mm	○
12 V outlet for communications radio	○
Reversing camera with monitor	○
Electrical heater, 12 kW, 230 V (CE)	○
Swingable seat for drilling and tramping	○
Joystick-controlled spotlights, left and right, 70 W-	○
Media player	○

Feed length

Feed length combinations	Total length (top pulley and wall bracket retracted)	Top pulley extension	Wall bracket extension
Standard 1 800 mm feed stroke	3 600 mm	760 mm	930 mm
Deep hole 1 800 mm feed stroke	3 600 mm	760 mm	930 mm
Short 850 mm feed stroke	2 860 mm	760 mm	520 mm

Boom/feed angles



	Metric	US
Boom swing - left/right	30°	
Boom lift	-42° to +52°	
Boom extension	800 mm	31.5"
Feed extension	650 mm	25.6"

Note: No feed-sliding on short feed

Tramming speed

On flat ground (rolling resistance 0.05)	15 km/h
On incline 1:8	5 km/h

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Technical specifications

Front and rear carrier width



		Metric	US		Metric	US
A	Width between front jacks fully retracted	1 800 mm	71"	B	Width to outside of wheels	2 000 mm 79"
	Width between front jacks fully extended	2 588 mm	102"		C	Width between rear jacks

Carrier turning angles

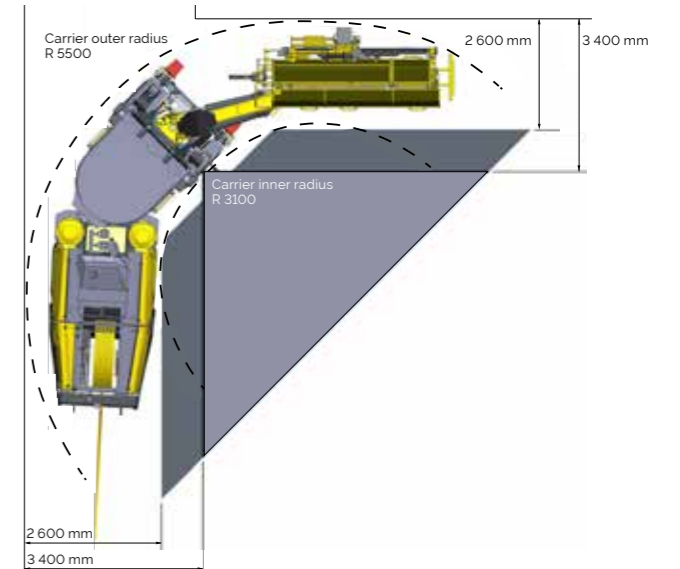
Turning radius	
Steering angle	42°
Boom swing	30°
Feed swing	15°

Note: These angles & swing are only allowed when driving at a very low speed (less than 1 km/h). For tramping at a higher speed the boom and feed should be centered to secure safety and stability.

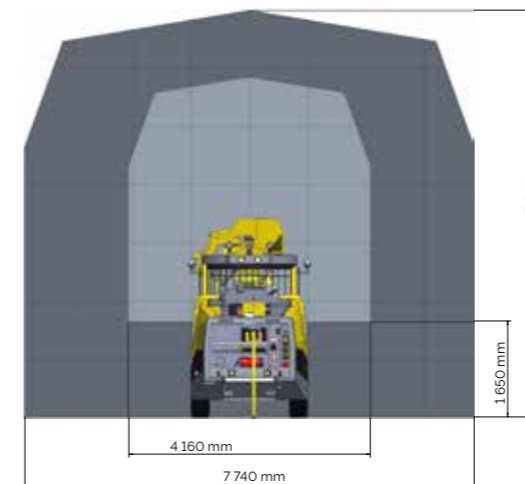
Sound and vibration data*

A-weighted Sound Power Level, LpA	108 dB
A-weighted sound pressure level, LpA, calculated (4 m distance from rig)	88 dB
A-weighted sound pressure level, LpA Electric power/drilling	65 dB
A-weighted sound pressure level, LpA Drilling	75 dB
Operator vibration level in cabin - weighted whole body vibration level, a _w - whilst drilling	<0.5 m/s ²

*The declared noise emission values should be combined with a measurement uncertainty of KpA-6 dB. The sum of declared measured value and the uncertainty value represent an upper limit of the range, in which measured values are likely to be included. The values were determined in accordance with the standards ISO 3744:2010 (for sound power level estimation), ISO 11203:1995 (for sound pressure calculation at different distances from the rig), ISO 11201:2010 (for operator cabin sound pressure level) and ISO 2631-1 (for whole body vibration).

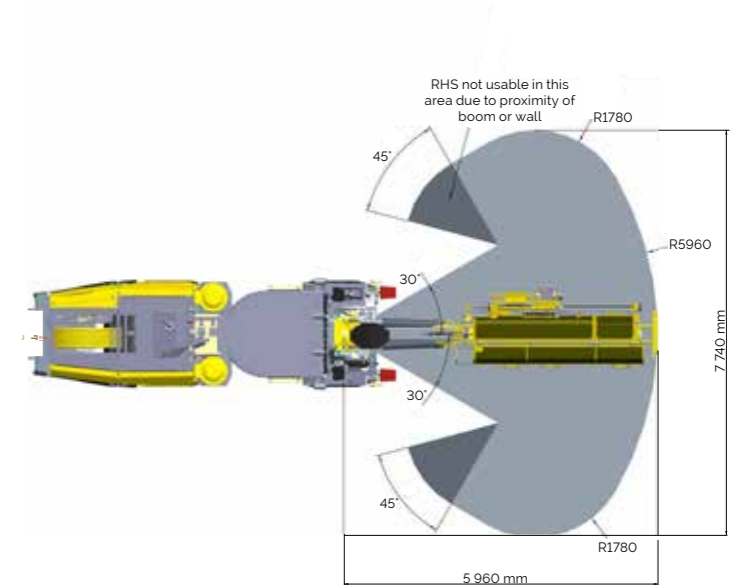


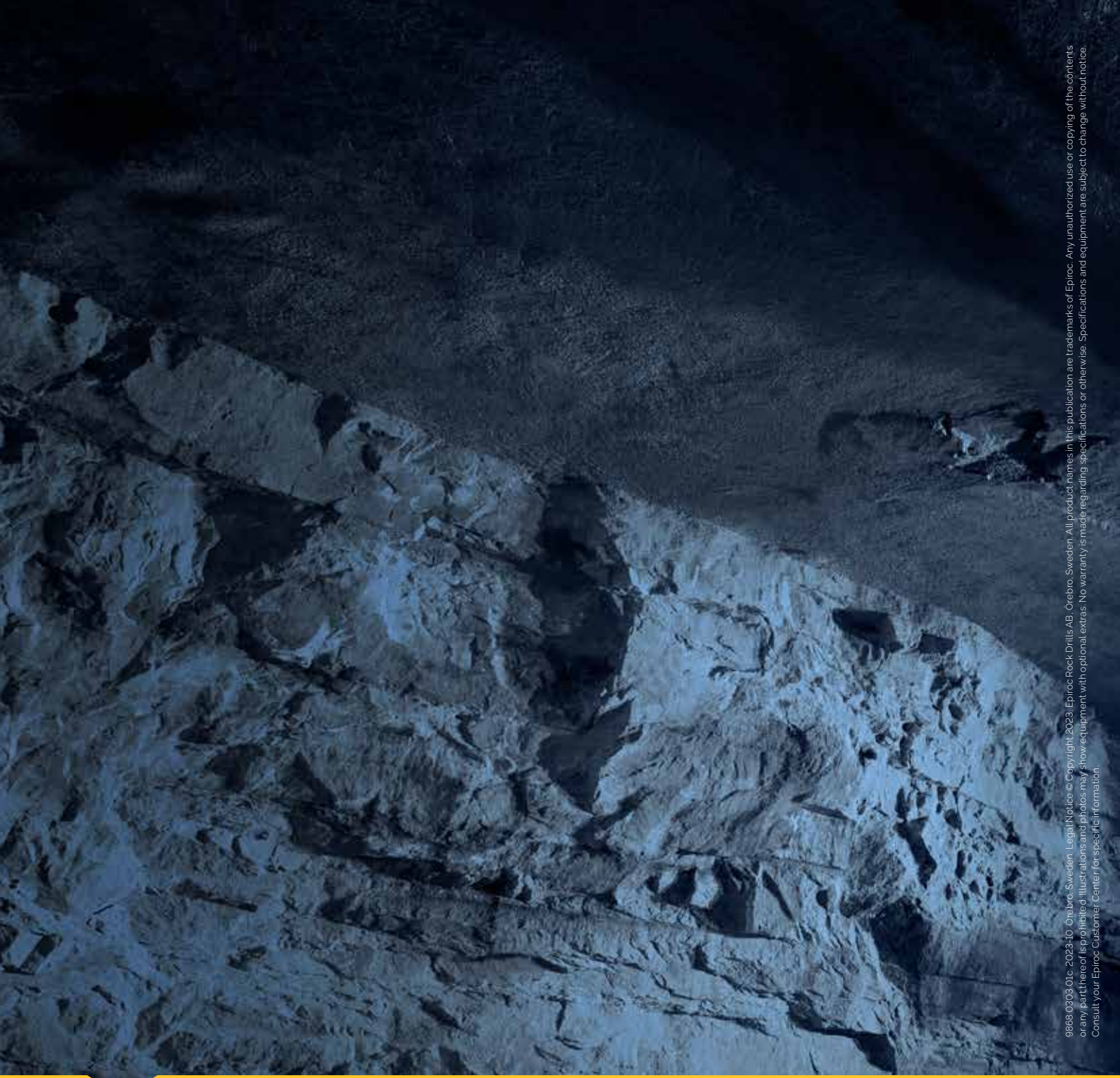
Coverage area



Perpendicular drilling forward is possible within this area

Drilling at angle is possible within this area





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