



English 2016

Angle, Distance & Height Measurement Instruments



DME

The original ultrasound system for sample plot survey



Pocketsize and rugged, the DME system is perfect for distance measurement in the forest. The DME system offers quick and accurate readings even in difficult terrain and thick underbrush. Useful for example in sample plot work, road construction, building dimension, timber cruising and stakeouts. Get the exact distances in English or metric units of up to 30m/98ft or more with an accuracy of +-1%.

With the "Reverse Prism" function you can use the DME on point samples, sampling a full spectrum of basal area factors (BAF's). By selecting one of the built in BAF's the DME will measure the tree's distance from the center-point then calculate the minimum diameter the tree must be to be included in your point sample. The DME instrument solution eliminates all of the limitations associated with traditional prism cruising, such as obscured views from the center.

- Works in dense vegetation
- Works when view of plot center is blocked or obscured
- Quick, reliable and accurate results
- Use two DME measuring instruments to measure road width, clearance distance, etc.

Art no 15-100-1001 DME complete 360° package/set incl. DME instrument, transponder T3, monopod, adapter.

Art no 15-100-1003 DME instrument only.

Art no 15-100-1004 DME instruments in pair.

User instructions included. Aluminum transport case.

DME

Size:	30 x 40 x 125 mm / 1.2 x 1.6 x 4.9"
Weight:	90g/0.2 lb (incl. battery)
Battery:	1 x 9 Voltage alkaline, Current 7mA
Temperature:	Min -15° Max 45° C / Min 5° Max 113° F
Ultra sonic frequency:	25 kHz
Distance:	30 m/98 ft. With 360° adapter: 20 m/60 ft.
Resolution:	0.01 m / 0.1 ft
Accuracy:	1% or better
BAF factors:	0.5, 1 to 9 (m ² /ha) or 5, 10, 15..to 50 (ft ² /acre)

Vertex IV

Great results for distance, angle and heights

The Vertex instrument is many foresters' favorite choice for precision height, angle and distance measurements in the forest. The Vertex can be used in dense vegetation and areas with thick undergrowth.

Unlike measuring tapes and laser instruments, ultrasound technology works also where the reference point is obscured by branches and leaves. Tree heights are calculated trigonometrically using the variables obtained when measuring angles and distance. The Vertex instrument has aluminium housing, sealed electronics and a large, easy-to-read alphanumeric display. A built-in tilt sensor allows for exact height measurement in slopes and on hills. Infrared or Bluetooth® transmitter enable direct transfer of results to peripheral devices. With the Vertex IV you can measure distances up to 30 meters, multiple heights per object and sample plot radii, limiting distances and diameters for BAF point samples and more.



VERTEX IV

Size:	80 x 50 x 30 mm / 3.2x2x1.2 Inch
Weight:	160 g / 5.6 oz (incl. battery)
Battery:	1 x 1,5 AA alkaline, Current 20mA with Bluetooth 150mA
Temperature:	Min -15° Max 45° C / Min 5 Max 113 F
Wireless interface:	Bluetooth, IR
Signal:	Built-in loud speaker
Ultra sonic frequency:	25 kHz
Height:	Min 0 Max 999 m/Yds Resolution: 0.1 m / 0.1 ft
Angles:	-55° to 85° grads / -60° to 94° Resolution: 0.1°
Distance:	30 m / 98 ft with 360° adapter 20 m / 60 ft. Resolution: 0.01 m / 0.1 ft Accuracy: 1% or better
BAF factors:	0.5, 1 to 9 (m ² /ha) or 5, 10, 15..to 50 (ft ² /acre)

TRANSPONDER T3

Size:	Diameter 70 mm/2,8"
Weight:	85 g/5 oz (Incl. Battery)
Battery:	1.5V AA alkaline
Consumption:	max 9mW



Use the Transponder T3 with the DME, the Vertex IV and the VL5 instruments. T3 can be pinned directly on the tree stem or used with an adapter/spreader on the custom monopod staff.

Art no 15-105-1008 Vertex IV-360 compl. 360° package/set incl. Vertex IV instrument, transponder T3, monopod, adapter.

Art no 15-105-1009 Vertex IV 60° package/set incl. Vertex IV instrument, transponder T3.

Art no 15-105-1010 Vertex IV measuring instrument only.

User instructions included. Aluminum case.

- Proven accurate & reliable
- Aluminium housing, reinforced
- Excellent to measure radius and heights in sample plots
- Built-in point sampling functions
- Slope to horizontal distance conversions, measure in steep terrain
- Built-in Bluetooth® and IR
- Sealed electronics
- Reference users worldwide

Digital Clinometers

Electronic results, better precision

EC II Angle + Height



The Haglöf EC II is an easy to use field instrument that offers accurate measuring results on inclination and heights of objects, usually trees. Heights are measured from any known distance. With electronic presentation of precision results, the EC II will serve you well for a long time, always giving accurate measurements without calibration or maintenance.



Art no 15-102-1011 EC II Clinometer. Specify model on order as Feet/degrees; Feet/Percent; Meter/Degrees; Meter/Percent. Delivered with lanyard and instructions.

EC II ELECTRONIC CLINOMETER

Size:	20 x 63 x 44 mm / 0,8 x 2,5 x 1,7 inch
Weight:	50 g/1,8 oz (incl. battery)
Battery:	1 x 1,5 AA alkaline. Warning when low.
Temperature:	Min -15° Max 45° C / Min 5 Max 113 F
Display:	LCD, Backlit
Summer:	Yes
Consumption:	15mW
Height:	Min 0 Max 999 m/ft Resolution: 0,1 m/ft < 100m/ft or 1m/ft > 100m/ft
Angle:	-55° to 85°. Resolution: 0,1° Accuracy: +0,2°

ECII-R

Height + Angle + Basal area + Volume + Form Factor



The ECII-R is an electronic clinometer with factor gauge. Use the ECII-R to get quick and precise height readings from any known distance with easy handling and great accuracy.

The ECII-R has adjustable form factors from 0.10...0.95 (default 0.45). Use the built-in basal area functions to count number of stems in your ECII-R, using one out of four basal area factors (0.5, 1, 2, 4 or 5, 10, 20, 40). The ECII-R will automatically display a calculation of the basal area and give a volume estimate based on the dominant tree height or average height. Art no 15-102-1016 ECII-R m/deg or m/% (spec. unit on order) Art no 15-102-1017 ECII-R ft/deg, ft/% (spec. unit on order). Delivered with lanyard and instructions.

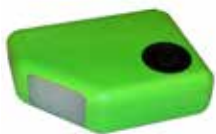


ECII-R CLINOMETER FACTOR GAUGE

Size:	20x63x44mm/0,8x2,5x1,7".
Weight:	60 g/2 oz (incl. battery).
Battery:	1 x 1.5 V AA alkaline.
Temp:	Min -15° Max 45° C / Min 5° Max 113°F.
Height:	Min 0 Max 999 m/ft. Resolution: 0.1 m/ft < 100m/ft or 1m/ft > 100m/ft.
Angles:	-55° to 85°. Resolution: 0.1°. Accuracy: +0.2°.
BAF:	0.5, 1, 2, 4 (m ² /ha) or 5, 10, 20, 40 (Ft ² /acre)
Factor:	0.10...0.95, default 0.45
Volume:	Height x form factor x basal area
Unit:	m ³ /ha or ft ³ /ac/1000

HCH

Angle + Height + Compass



The Haglöf HCH Compass with height function has the potential to become your next favorite forest instrument: small, accurate, fast, easy to use and giving measuring results of inclination and heights measured from any optional distance and placing in relation to the object's position in the field - and including a built-in azimuth compass 0-360° graduated in 1° increments, and accuracy to 2.5°. Ideal when building roads and power lines, demarcation of forest properties etc. Single button operation where the user can switch from compass to clinometer with one push. Built-in magnetic declination and easy calibration. For HCH height details please see the EC II instrument specification. Art no 15-102-1014 HCH Height clinometer compass. Specify model on order as Metric or Feet for height readings.

HCC

Angle + Compass



Use the HCC to measure horizontal and vertical angles. This together with the compass makes the HCC great for site survey in satellite installation. Features azimuth compass 0-360° graduated in 1° increments, and accuracy to 2.5°. Clinometer measures -55° to +85°, graduated in 0.1° increments with accuracy to 0.2°. The user can switch from compass to clinometer with one push. Built-in magnetic declination and easy calibration. The HCC Clinometer Compass measures in degrees. Art no 15-102-1013 HCC Clinometer compass.

HAGLÖF HCC/HCH CLINOMETERS

Size:	20 x 63 x 44 mm / 0,8 x 2,5 x 1,7 inch
Weight:	50 g/1,8 oz (incl. battery)
Battery:	1 x 1,5 AA alkaline. Battery warning.
Temperature:	Min -15° Max 45° C / Min 5 Max 113 F
Display:	LCD, backlit display
Summer:	Yes
Consumption:	15mW

CI

Angle



The blue C I is the ideal instrument when you wish to measure slopes and inclination of trees, buildings, walls, tunnels, roads and more. Various field professionals will appreciate the simplicity and accuracy of the C I. Simply aim and press the button and the angle is presented to you in the display. Art no 15-102-1012 C I Clinometer. Specify model on order as Degrees or Percent.

HAGLÖF C I SLOPE MEASURER

Size:	20 x 63 x 44 mm / 0,8 x 2,5 x 1,7 inch
Weight:	50 g/1,8 oz (incl. battery)
Battery:	1 x 1,5 AA alkaline. Warning when low.
Temperature:	Min -15° Max 45° C / Min 5 Max 113 F
Display:	LCD, Backlit
Summer:	Yes
Consumption:	15mW
Angles:	-55° to 85°. Resolution: 0,1°. Accuracy: +0,2°

VL5 Vertex Laser

Foresters premium choice - modern, versatile and reliable

The VL5 Vertex Laser is a technically advanced instrument solution for height, distance and angle measurement in forest and field. The VL5 offers a variety of options to get correct measurements in all different situations and surroundings. Results are presented in a graphic LCD display and can be transferred with IR and Bluetooth. The VL5 can also store and process field data and present calculated figures on the spot.

- The VL5 is the most complete, compatible and communicative field measurement instrument system.
- The bright orange color instrument housing is reinforced, shock- and drop proof and secured.
- Angle compensated/horizontal distance value and tilt sensor.
- Ultrasound and laser combination technology.
- Bluetooth® and IR communication.
- Features all advantages from the L5 Laser and the Vertex IV instruments in a unique combination.
- Reverse prism factors (BAF-factors) 5-50 (English) / 0.5-9 (Metric).
- Long distance measuring capacity.
- Data storage & processing capacity.
- Incorporated functions for borderline/hazard trees, safety distance, tree limit, line clearance and delta height.
- Red cross aim for easy spotting of tree tops & thin objects.
- Adjustable laser filter: closest-farthest-strongest.
- Rechargeable built-in Li-Ion battery.
- Easy operation with field adapted keypad and step-through menu.
- Perfect in the forest, for logging, wood and timber industry, utility applications...
- Customization possibilities.
- Accessories include reflector/transponder T3, monopod for transponder T3, monopod with footbracket.



The built-in VL5 Li-Ion battery can be charged in the office, the car or in the field with a portable power bank. Portable power charger, art no 13-600-1070. Car charger art no 13-600-1069.



The VL5 is excellent both in the forest and for construction, utility and industrial applications. Great accuracy and measurement range, rugged and fully field adapted. User friendly with several unique functions, integrated technology and a built-in mounting point for camera-type monopods when a steadier aim is required.

VL 5	VERTEX LASER	Bluetooth®
Size:	93x63x72mm/3.7x2.5x2.8"	
Weight:	243 g/8.6oz.	
Battery and consumption:	Rechargeable Li-Ion 3.7V, built-in, approx. 9000 measurings. Charging time max 3.5h. USB mini B interface wall charger 110/220AC/5VDC; car charger adapter 12VDC. Cable Usb mini B Male/Usb Type A Male, 0.5m. Consumption max 0.9W.	
Communication:	IR, Bluetooth® class 2, Spp (serial profile), pincode 12345.	
Temperature:	-20° to +45° C/ -4°F-113°F.	
Height:	0-999 m/ft. Resolution height: 0.1 m/ft.	
Angle:	-55° - 85°. Unit: Degrees 360°, Grads 400° and %. Resolution: 0.1°. Accuracy: 0.1°.	
ULTRASOUND:	Distance: 30 m/98 ft. With 360° adapter: 20 m/60 ft. Accuracy distance: 1% or better. Resolution distance: 0.01m/0.1ft.	
LASER:	Distance: 46cm/1.5ft - 700m/2000ft depending on target. Accuracy: 4cm/0.1ft. Resolution: 0.1m/ft (0.01m/0.1ft in DME-mode).	
Shock/Vibration/Moist/Laser Classification:	MIL-STD-810E. Housing frame material glass filled poly carbonate, IP67, NEMA6, Laser class 1, 7mm (FDA, CFR21) Class 1m (IEC 60825-1:2001).	
Sight:	LED crosshairs 1 x magnification.	
Display:	Graphic LCD 100x60pixels.	
Dataformat:	Nmea or Ascii.	
Memory:	2000 dataset, non-volatile.	
Other information, details, accessories etc.	Transponder T3 for ultrasound measuring (1 ea AA 1.5V alkaline battery necessary for T3, power consumption 9mW). Adapter and monopod staff, 4-parts (33-140cm) weight approx. 270g/9.5oz. Aluminum transport/storing case. See user manual for more details.	

Art no 15-103-1020 VL5 360° package/set incl. VL5 instrument, transponder T3, plot centre staff, adapter, and charging cable.

Art no 15-103-1021 VL5 60° package/set incl. VL5 instrument, transponder T3, charging cable and adapter.

Art no 15-103-1022 VL5 measuring instrument only. User instructions included. Aluminum transport case. Built-in Li-Ion battery in measuring instrument. Transponder uses AA battery.



L5 Laser

Great capacity and range, data processing and storage

- Long range, height and angle measurements with high-quality laser technology.
- Rugged, reinforced, drop- and shockproof blue housing.
- Bluetooth® and IR communication.
- Data storage and processing capacity.
- Hazard trees, safety distance, tree limit, line clearance.
- Delta height calculation.
- Red cross aim for easy spotting of thin objects.
- Adjustable laser filter - closest, farthest, strongest.
- Rechargeable built-in Li-Ion battery.
- Easy operation with field adapted keypad and step-through menu.
- Perfect for forestry, logging and wood industry, power distribution and utility applications, shooting ranges, construction and more.
- Custom order measurement functions.
- Optional accessories include camera-type monopod with foot bracket for direct use on instrument for a steadier aim.



The L5 Laser instrument is a great instrument choice for long range measurement in open areas. With the L5 instrument you can measure distances shorter than 0.5m/1.5ft up to 700 meters/2300ft with great precision and accuracy. The L5 is used in areas such as forestry and utility industry, power line and maintenance work and for accident prevention.

A laser filter allows for flexible measuring, where you can select to measure the closest object, the farthest object or the object that submits the strongest signal.

The L5 has a built-in Li-Ion rechargeable battery. An illuminated adjustable red haircross improves sighting and spotting of individual lines and other objects. The L5 instrument is rugged with a reinforced and balanced housing, IP67 water resistant, with user friendly interface, fully integrated technology, and built-in mounting point for camera-type monopod if a steadier aim is required. Includes several integrated special functions for added value. Different custom models available and possibility to customize according to your requirements.



L5 LASER



Size:	93x63x72mm /3.7x2.5x2.8"
Weight:	243 g/8.6oz.
Battery and consumption:	Rechargeable Li-Ion 3.7V, built-in, approx. 9000 measurings. Charging time max 3.5h. USB mini B interface wall charger 110/220AC/5VDC; car charger adapter 12VDC. Cable Usb mini B Male/Usb Type A Male, 0.5m. Consumption max 0.9W.
Communication:	IR, Bluetooth® class 2, Spp (serial profile), pincode 12345.
Temperature:	-20° to +45° C / -4°F-113°F.
Height:	0-999 m/ft. Resolution height: 0.1 m/ft.
Angle:	-55° - 85°. Unit: Degrees 360°, Grads 400° and %. Resolution: 0.1°. Accuracy: 0.1°.
Laser:	Distance: 46cm/1.5ft - 700m/2000ft depending on target. Accuracy: 4cm/0.1ft. Resolution: 0.1m/ft.
Classification:	MIL-STD-810E. Housing frame material glass filled poly carbonate, IP67, NEMA6, Laser class 1, 7mm (FDA, CFR21) Class 1m (IEC 60825-1:2001).
Sight:	LED crosshairs 1 x magnification.
Display:	Graphic LCD 100x60pixels.
Dataformat:	Nmea or Ascii.
Memory:	2000 dataset, non-volatile.
Other information, details, accessories etc.	Camera-type monopod 15-103-1531. Aluminum transport/storing case. See user manual for more details.



Art no 15-103-1030 L5 Laser package/set incl. L5 instrument, charging cable with adapter. User instructions included. Aluminum transport case. Li-Ion battery built- in measuring instrument.

L5^{Custom} Pile

Inventory and control made easy

Use the L5^{Custom} Pile Laser instrument solution to control the size of your inventory. With a series of simple measurement operations, advanced calculations are performed as a one-person and single-instrument job. Pile lengths and heights are measured with great accuracy and the total volume is processed, calculated, and instantly presented to you. Results can be stored or transferred to PC or handheld.

- Measure piles of wood and wood chips
- Obtain your field data with accuracy and precision
- Control and calculate volume and have results presented instantly
- Report within seconds.
- Wireless transfer, store and process in the instrument
- Measure close to the pile or from a distance with extended laser range
- Avoid pacing and climbing in hazard areas
- Work comfortably without paper and pen
- Use in all weather conditions and temperatures
- Rechargeable Li-Ion battery and laser filter
- Easy access to measurement modes and menus with field adapted keypad
- Rugged, reinforced and sealed housing in high-visibility blue color
- Specified, tested & approved by independent industry pro's
- Ask for more custom functions for your L5^{Custom} instrument

The L5^{Custom} Pile instrument has been designed for efficient inventories of timber piles or wood chip heaps. The possibility to measure distances from 0.5m or 1.5ft is a great advantage when working on plants and logyards, as it allows you to get measurement results without stepping, climbing and pacing in insecure areas. A pile of wood or wood chips can be divided in several sections. Set variables such as width (log length), assort-

ment and volume factor in percentage. The instrument will store and process all data in the non-volatile memory for results on total volume, mean values for pile width, percentage of wood volume and more. Instrument specification, see L5 Laser.



Several different incorporated methods enable you to measure the section lengths.

It is possible to measure piles from a straight angle, starting at one corner to measure the total length of the pile, followed by a series of height measurements to obtain mean height.

Art no 15-103-1032 L5^{Custom} Pile Control incl measuring instrument, charger and charging cable, user guide and aluminum case.

L5^{Custom} Gator Eye^{REb}

- Great complement to theodolite total stations for quick controls and fast results
- Custom model to measure in dark surroundings and under-ground
- Suitable for mining industries and cave examinations
- Easy target with the aligned high visibility laser pointer
- Radio Enter button - trigger on monopod for convenient operation
- Follow the Gator Eye laser beam and register when target is reached
- Data storage and processing capacity
- Custom programming possibilities
- Adjustable laser filter: closest-farthest-strongest
- Bluetooth® and IR built-in for result transfer
- Developed and manufactured in cooperation with industry and user specifications

This L5^{Custom} Gator Eye is designed to measure distance, angles and heights in caves and mines where daylight is limited and targets are difficult to see and/or hit. The L5^{Custom} Gator Eye model is delivered complete with a high visibility green laser pointer on the L5 instrument, and custom-built monopod with Radio Enter Button. Measurement results are conveniently registered and stored in the instrument. Aim with the high visibility Gator Eye laser pointer at your target distance. Register the measurement result with the Radio Enter Button mounted on the monopod. Instrument and Gator Eyes specifications, see this catalog.

Art no 15-103-1033 L5^{Custom} Gator Eye package/ set incl. L5 instrument with Gator Eye laser pointer, charging cable with adapter, camera-type monopod with Radio Enter Button. User instructions included. Aluminum transport case. Li-Ion battery built-in measuring instrument; coin cell battery in Radio Enter button.



Postex® Positioning

Positioning in permanent sample plots with ultrasound and laser



- Use Postex® for individual positioning in coordinate systems.
- A Postex system can have different contents depending on user areas.
- The Postex Laser measurement instrument is often used with Haglöf Sweden computer caliper DP II or Digitech Professional and software Postax. Other system configurations can contain the DP II, a DP Postex Module and L5 laser for height measurements.
- Data can be exported as a CSV file, which can be easily consumed for visualization and analysis in, for example, ArcGIS Online.
- The Postex® system allows you to gather more field data in less time and using reliable technology. Developed in collaboration with leading scientists.

The Postex® system is mainly used to position trees and objects in permanent sample plots. Individual positioning of trees with the Postex® is a proven reliable work method for moderate accuracy demands as when connecting “ground truth” measurements to aerial LiDAR surveys.



Postex® Laser is an excellent tool to follow up individual trees in long term study projects on permanent sample plots. One person can measure and electronically capture all of the tree/object data and position calculations. The Postex® system has been developed in cooperation with leading scientists and foresters, and is based on proven durable instruments and functional software from Haglöf Sweden®.

The Postex Laser instrument includes both ultrasound and laser technology for easy and accurate height measuring of individual trees. It has a user friendly and rugged exterior combined with a smart interior and advanced functionality. With ultrasound you will not be limited to line of sight measurements, and not bound to targets. Seedlings may not make for good laser targets, but with ultrasound, you can position them precisely. One person can measure and electronically capture all of the tree data and position calculations.

POSTEX	LASER	Bluetooth®
Size:	93x63x72mm/3.7x2.5x2.8"	
Weight:	243 g/8.6oz.	
Battery & consumption:	Rechargeable Li-Ion 3.7V, built-in, approx. 9000 measurings. Charging time max 3.5h. USB mini B interface wall charger 110/220AC/5VDC; car charger adapter 12VDC. Cable Usb mini B Male/Usb Type A Male, 0.5m. Consumption max 0.9W.	
Communication:	IR, Bluetooth® class 2, Spp (serial profile), pincode 12345.	
Temperature:	-20° to +45° C/ -4°F-113°F.	
Height:	0-999 m/ft. Resolution height: 0.1 m/ft.	
Angle:	-55° - 85°. Unit: Degrees 360°, Grads 400° and %. Resolution: 0.1°. Accuracy: 0.1°.	
ULTRASOUND:	Distance: 30m/98 ft or more. With 360° adapter: 20m/60ft or more: Accuracy distance: 1% or better. Resolution distance: 0.01m/0.1ft.	
LASER:	Distance: 46cm/1.5ft - 700m/2000ft depending on target. Accuracy: 4cm/0.1ft. Resolution: 0.1m/ft (0.01m/0.1ft in DME-mode).	
Shock/Vibration/Moist/Laser Classification:	MIL-STD-810E. Housing frame material glass filled poly carbonate, IP67, NEMA6, Laser class 1, 7mm (FDA, CFR21) Class 1m (IEC 60825-1:2001).	
Sight:	LED crosshairs 1 x magnification.	
Display:	Graphic LCD 100x60pixels.	
Dataformat:	Nmea or Ascii.	
Other:	Aluminum transport/storing case. See user manual for more details.	



Postex Laser Art no 15-103-1040

Postex Laser is the most common Postex system model, often used together with a Haglöf Sweden computer caliper such as the DP II or Digitech Professional. Postex Laser can also be used as a separate solution for positioning of individual objects in the field, and with different handheld computers.

The art no includes the Postex Laser measuring instrument transponders A, B and C with Postex custom rack, adapters for the transponders and a spirit level (for alignment). Charging cable, charger and aluminum transport case also included on delivery. Details on the DP Postex module: see this catalog. Contact us for other system configurations of the Postex® system.

TRANSPONDER

Size:	Diameter 70 mm/2.8" per transponder.
Weight:	85g/5oz (incl battery) per transponder.
Battery:	1.5V AA Alkaline per transponder.
Consumption:	max 9mW.
Rack:	Complete with adapters, approx. weight 4.85kg/194oz. Adapter/TRP at 115cm/44.85" from centre, arm extending to 125cm/48.75". Rack expandable.



To measure is to know. A regular monitoring and control of your logs, trees and entire forests are ways to enhance a sustainable management of your assets.

All Haglöf Sweden instruments and solutions are tested and proven reliable in the toughest of climates and terrains.

Read more about our company and products at www.haglofsweden.com



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