

## MINI EARING GAUGE

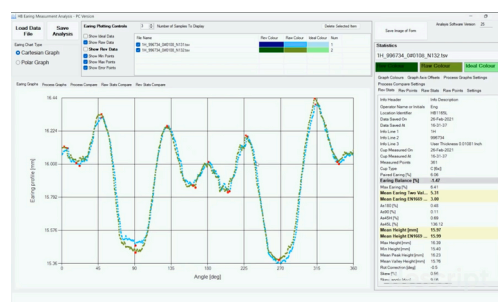
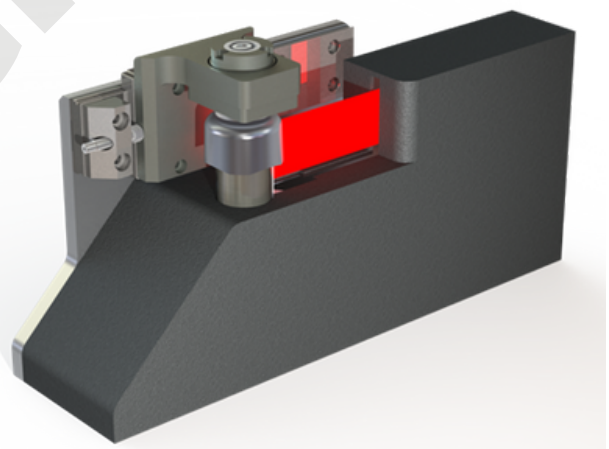
Contactless Earing Measurement  
for Earing Cups

The Mini Earing Gauge (MEG) enables high-speed Earing measurement.

Contactless laser measurement enables repeatable, accurate and rapid Earing measurement of Cups.

Measurement and Cup swapping takes approximately 4 seconds on Huxley Bertram's MEG. Huxley Bertram's MEG has the capability of measuring hundreds of cans an hour, from 33-55mm internal diameter and 12-43mm deep.

Changing format tooling is done with ease using only one bolt in a matter of seconds. The Huxley Bertram Mini Earing Gauge is compliant with EN 1669 and ISO 11531. Huxley Bertram has 30 years of experience in Earing measurement and has been supplying Earing equipment to clients across the globe.



# Product Description

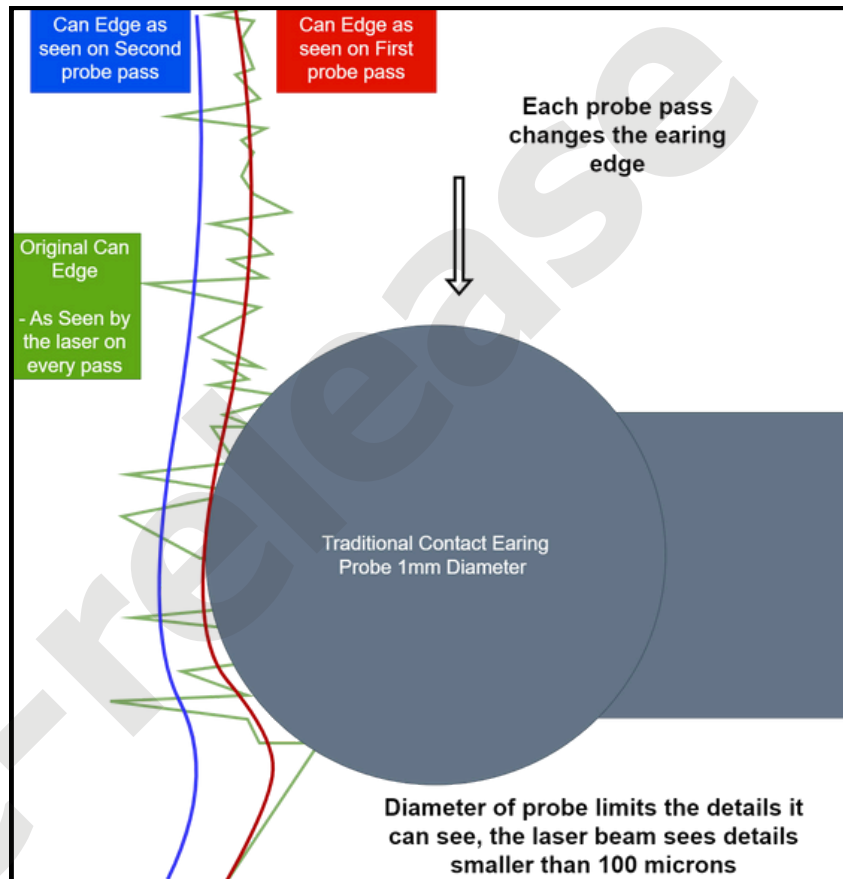
## Key Advantages

### Rapid Precision Earing Measurement - *without the drawbacks of physical probes.*

Physical probes cause significant inaccuracies in Earing measurement. Due to the probe being physically pushed against the Earing rim, it often distorts the Earing profile, destroying delicate features.

This is a problem, particularly on thinner Cups and is characterised by a collection of aluminium fragments left around the Earing probe during measurement.

Physical probes are also limited by their own diameter (typically around 1mm). This means that more minor features are not captured. The MEG on the other hand is capable of capturing these features.



The typical rotation of 180 degrees/sec of the Cup measured by the MEG enables it to produce 5 measurements per degree of the Earing profile.

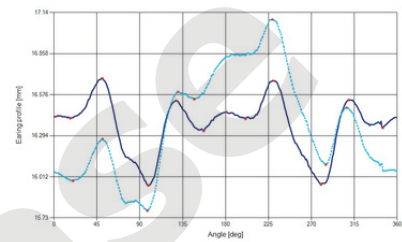
**Huxley Bertram Advanced Earing Analysis Software - facilitates detailed and rapid evaluation of the Earing characteristics.**

The analysis automatically generates Polar or Cartesian plots of Earing profiles, algorithmically corrects for Cup skew, and identifies peaks and troughs using algorithms developed over 30 years of Earing measurement experience. Multiple overlays of Earing profiles are overlaid for comparison.

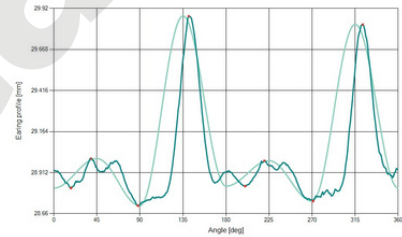
Based on calculations stipulated in EN 1669:1997 and ISO 11531:2015, the software automatically identifies peaks and valleys and removes Cups skew (sugar scoop). The profile is then classified by the acceptable peak positions as set out in EN 1669 and calculates the metrics from EN 1669. This is then compared to the user-set acceptable ranges to produce instantaneous sample acceptability data.

Plots for the original skewed data, the de-skewed data and the fitted idealised curve are able to be automatically generated. This allows operators to rapidly access the validity of the data and enable rapid batch release and quality assurance processes.

Calculation results are saved to a CSV file and directly sent to a network location for harvesting by a batch-release or data warehouse system. In addition, the software generates PDF results reports so that detailed results and graphs may be shared with colleagues and customers.



Automatic Profile De-skew



Display Against Scaled Ideal Profile

The screenshot displays the software's main interface. On the left, there are controls for 'Load Data File', 'Save Analysis', and 'Earing Plotting Controls'. The central area features a Cartesian graph with 'Earing profile [mm]' on the y-axis (ranging from 15.34 to 16.44) and 'Angle [deg]' on the x-axis (ranging from 0 to 360). The graph shows multiple overlaid curves in various colors (blue, green, red, purple, orange) representing different revolutions. On the right, a 'Statistics' panel is visible, providing detailed data for the selected file '1H\_996734\_0#0108\_N132.tsv'. The statistics include:

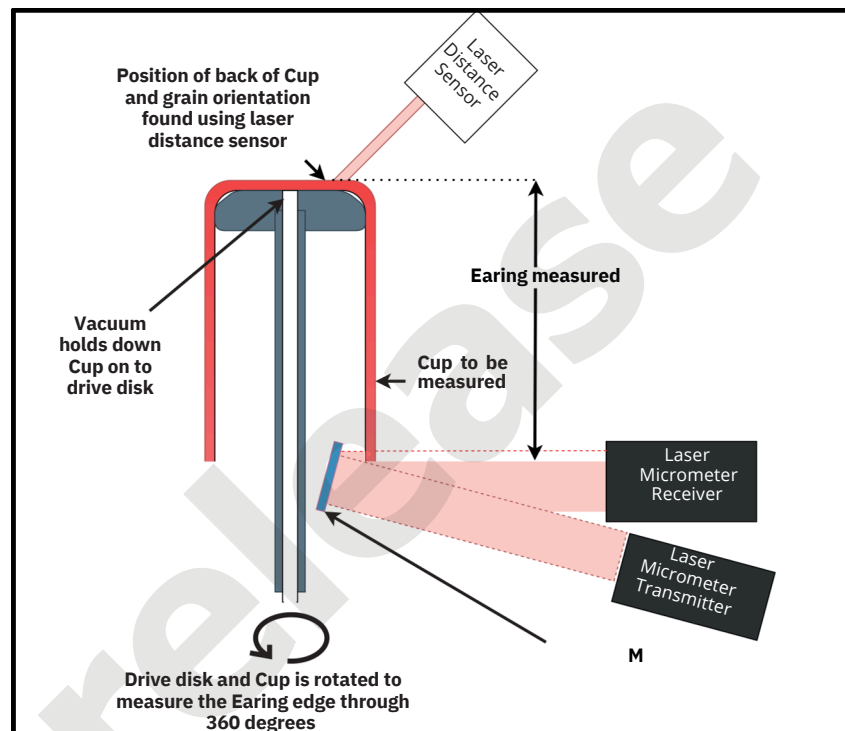
Info Header	Info Description
Operator Name or Initials	Eng
Location Identifier	
Data Saved On	26-Feb-2021
Data Saved At	
Info Line 1	1H
Info Line 2	
Info Line 3	User Thickness 0.01081 Inch
Cup Measured On	26-Feb-2021
Cup Measured At	16-31-37
Measured Points	361
Cup Type	C [6x]
Flags	
Paired earing [%]	6.06
<b>Earing balance [%]</b>	<b>-1.47</b>
Max earing [%]	6.41
<b>Mean earing Novels ...</b>	<b>5.31</b>
<b>Mean earing EN1669 ...</b>	<b>3.00</b>
As180 [%]	0.48
As90 [%]	0.11
As45H [%]	0.69
As45L [%]	0.32
<b>Mean Height Novels ...</b>	<b>15.93</b>
<b>Mean Height EN1669 ...</b>	<b>15.99</b>
Max Height [mm]	16.39
Min Height [mm]	15.40
Rot Correction [deg]	-0.5
Skew [%]	0.54

# Principles of Operation

## Mini Earing Guage

The Cup is placed on the drive disk and held on by vacuum to the drive disk. The drive disk and Cup complete one whole rotation to record the Earing profile.

The Earing profile is measured by the portion of the laser beam masked by the Earing edge of the Cup, as shown in the diagram right. The height of the flat end of the Cup is measured by the laser distance sensor. This is the basis for the zero position of the Earing measurement.



Functionality	Key Advantages
Contactless Rapid Earing Measurement	Rapid, precision Earing Measurement
Measurement of standard 33-55mm internal diameter Earing Cups from 12mm to 43mm tall.	Measuring thin-walled Cups without deformation
Huxley Bertram Advanced Earing Analysis Package	Earing profile measured in less than 3 seconds
	Measuring Cups in seconds
	Measure hundreds of Cups in an hour

***Real-world repeatability against an aluminium reference surface is better than +/- 3 microns.  
Real work accuracy against aluminium reference better than +/- 10 microns.***

**Huxley  
Bertram**

Cambridge, UK

# Machine Specification

Earing Measuring Capabilities			
Cup Internal Diameter:	33-55mm	Cup Height Range:	12mm to 41mm
Max Earing Peak Trough Distance:	28mm	Earing Measurement Resolution:	+/- 3 micron
Total Measurement File Save Time:	Less than 4 seconds at 180 degrees/sec	Earing Measurement Per Degree at 180 Degrees/sec:	Greater than 5 per degree
Typical Earing Accuracy:	+/- 10 microns	Rotational measurement accuracy:	+/- 0.2 degrees at 180 degrees/sec
Physical Specification			
Approximate footprint (excl. monitor):		Weight:	
Electrical Power:	240/110 V AC 50/60 HZ.	Pneumatic supply:	Not required.

# Huxley Bertram

Huxley Bertram Engineering Limited designs and builds special-purpose machines, automation and test equipment; alongside a select line of products for specialised industries.

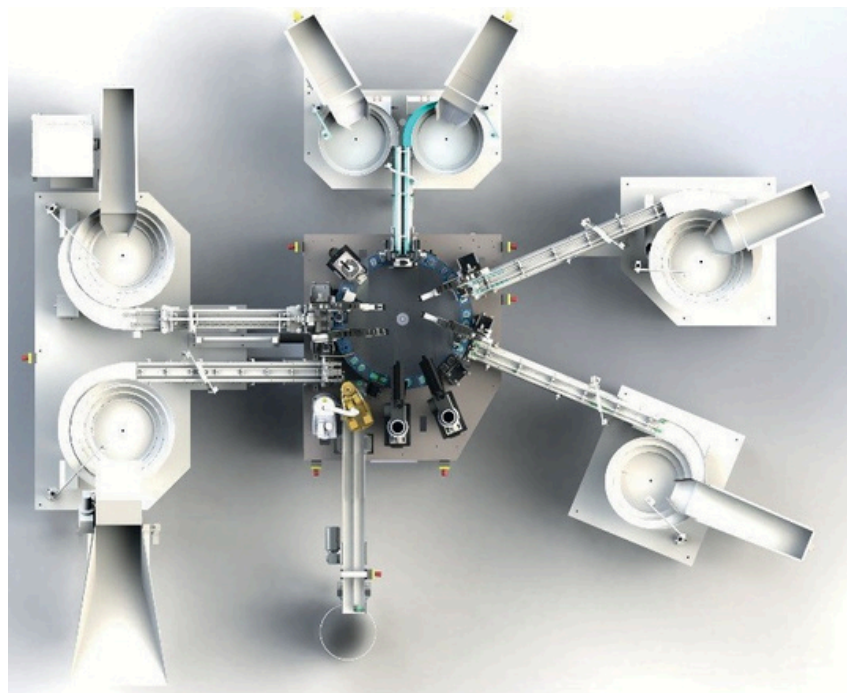
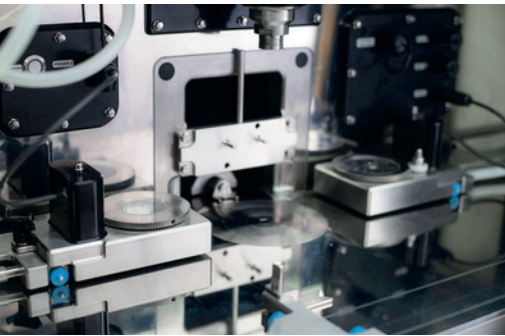
These innovative solutions enable companies to increase quality and throughput and reach new markets. Huxley Bertram regularly supplies equipment and supports customers all around the world.

The company collaborates with clients to solve complex challenges with the right mix of innovation, technology and simplicity.

Huxley Bertram was founded in 1979. Since then, it has delivered over 1,000 solutions, transforming clients' operations in industries from pharmaceutical and nuclear to research and academia.

The business is located in Waterbeach, Cambridge, with facilities measuring over 25,000 sqft.

For more information on Earing Measurement Units or Huxley Bertram Special Purpose Machines visit [www.huxleybertram.com](http://www.huxleybertram.com) or inquire below.



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