LASER GAUGE

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PRODUCT DATASHEET

HS730LE Sensor | With Blue Laser Technology

OVERVIEW

The HS730LE sensor with Blue Laser Technology is used to inspect the leading edge of blades or vanes used in aircraft and power system engines made from nickel alloy, composite, stainless steel, titanium or ceramic. Designed to scan both sides of the blade simultaneously, the sensor returns a complete profile around the radius of the blade, which allows the accurate measurement of the thickness and the plotting of the blade profile for comparison to its engineering design. The edge radius can also be analyzed.

The sensor connects to a Windows™ 10 laptop or tablet PC via a USB 2.0 cable. No other hardware or external power source is required.

OPERATING FEATURES

MEASUREMENT RANGE

The unique design of the optics enables the sensor with a nominal 0.250" field-of-view (FOV) to scan a range of small to medium size blades. Thickness measurements are made at specified distances back from the leading edge of the blade, called the setback distances. The table below shows the range of blade sizes that can be measured using the HS730LE-B sensor. The range is expressed in terms of the maximum blade thickness at the maximum setback distance.

Blade Thickness	Maximum Setback
0.070"	0.400"
0.150"	0.350"
0.200"	0.300"
0.250"	0.250"

RESOLUTION

With a 0.250" field-of-view (FOV), the HS730LE-B has a scanning resolution of 0.0004", and measurement accuracy to within 0.0005" (12µm).

BLUE LASER TECHNOLOGY

When measuring on nickel alloy, composite, stainless steel, titanium or ceramic blades, the reduced wavelength of the blue laser offers precise tracing of the blade profile. The blue laser generates a minimal laser point on the surface (approximately 0.002") and therefore offers stable, highly accurate and more consistent results on measuring objects that are normally considered as critical.

FEEDBACK

Scanning is as simple as positioning the sensor on the edge of the blade and pulling the sensor trigger. Raw video and the plotted profile are displayed in real-time on the computer used with the sensor. Measurements are recorded when the trigger is released. Out-of-spec conditions are flagged with color symbols.

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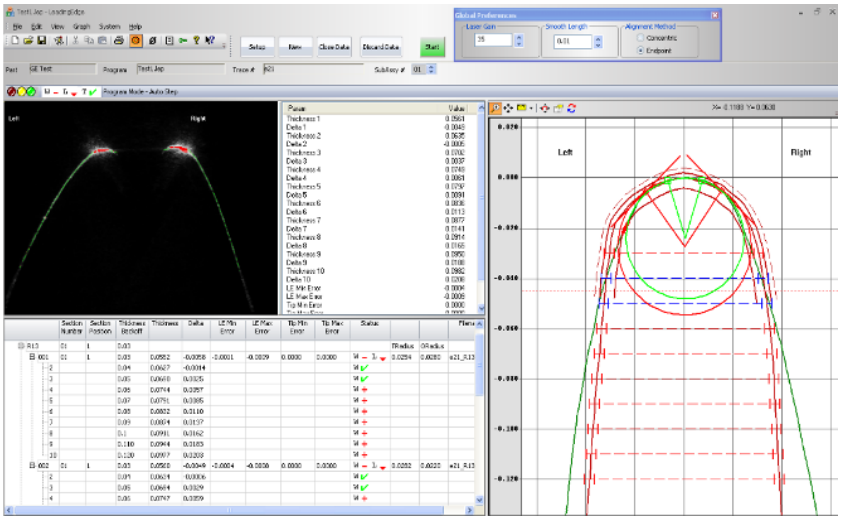
MEASUREMENTS

Blade Thickness	Blade thickness measured at specified distances (setback) from the leading edge. Thickness can be measured at up to 10 locations on the blade.
Profile Deviation	Profile of actual blade deviating outside a specified tolerance band around the blade's design nominal, specified using customer engineering drawings as templates.
Edge Radius	Radius fit to the edge can be calculated automatically with each scan or with on-screen tools.



Programs – Separate programs can be developed for different blades, specifying different profile nominals and templates and different setback distances for thickness measurements.

Documentation – Data displayed in the table can be saved. The blade profile can be saved automatically for each scan, as well as an image of the plotted profile with measurement lines as shown in the plot window.

SENSOR SPECIFICATIONS

Type	USB – Handheld
Size	1.8" (w) x 3.1" (h) x 9.4" (l)
Weight	15 oz.
User Interface	3 LED's, 2 tactile buttons, finger trigger
Cable Length	USB 2.0A to Mini 5-Pin USB, 6' straight cable
FOV Options / Horizontal Scanning Resolution / Depth Accuracy	0.250" (6mm) / 0.0004" (10µm) / ± 0.0005" (12µm)
Shock Protection	Cast urethane housing
Environment	0° – 70° C

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