

HS733LE Sensor Handheld Leading Edge

Overview

The HS733LE sensor is used to inspect the leading edge of blades or vanes used in aircraft and power system engines. 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 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 0.150” 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 HS733LE sensor. The range is expressed in terms of the maximum blade thickness at the maximum setback distance.

Blade Thickness	Maximum Setback
0.050”	0.250”
0.010”	0.225”
0.150”	0.200”



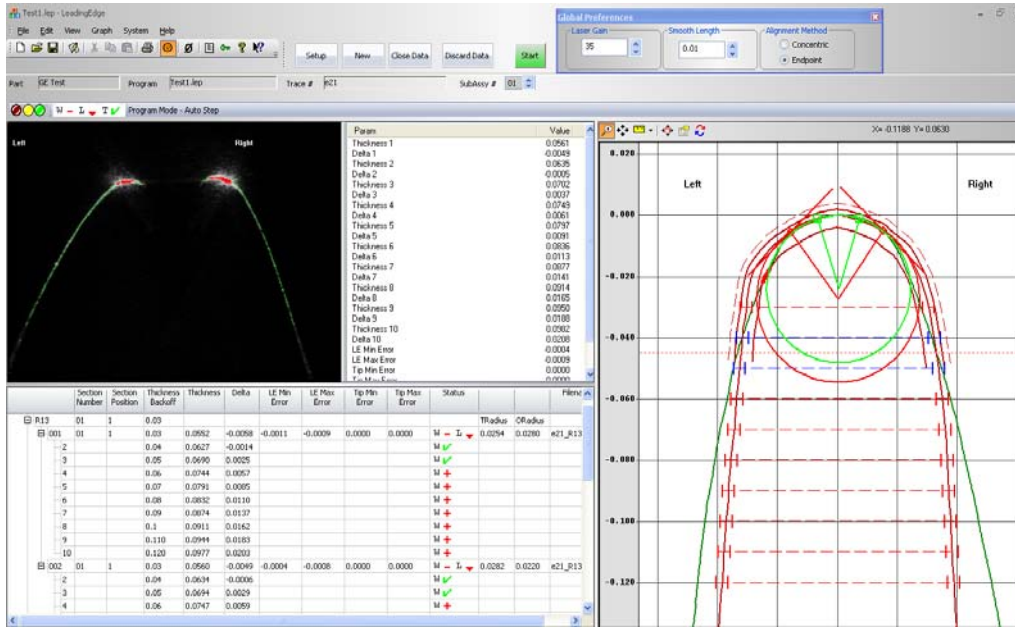
Resolution – With a 0.150” field-of-view (FOV), the HS733LE has a scanning resolution of 0.0004”, and a measurement accuracy to within 0.0005” (12µm) on the blade thickness.

Connectivity – The hand-held sensor is connected to a computer, laptop or tablet pc with a cable to a USB 2.0 port providing 500mA. No other hardware or external power source is required.

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 laptop or computer used with the sensor. Measurements are recorded when the trigger is released. Out-of-spec conditions are flagged with color symbols.

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 above plot window.



Sensor Specifications

Type	USB 2.0, Windows XP, Vista
Size	7.5" (l) x 4.5" (h) x 1.75" (w) (1.25" width at tip)
Weight	12 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: Horizontal Scanning Resolution	0.150" (6mm): 0.0004" (10µm)
Shock Protection	Cast urethane housing
Environment	0° – 70° C



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