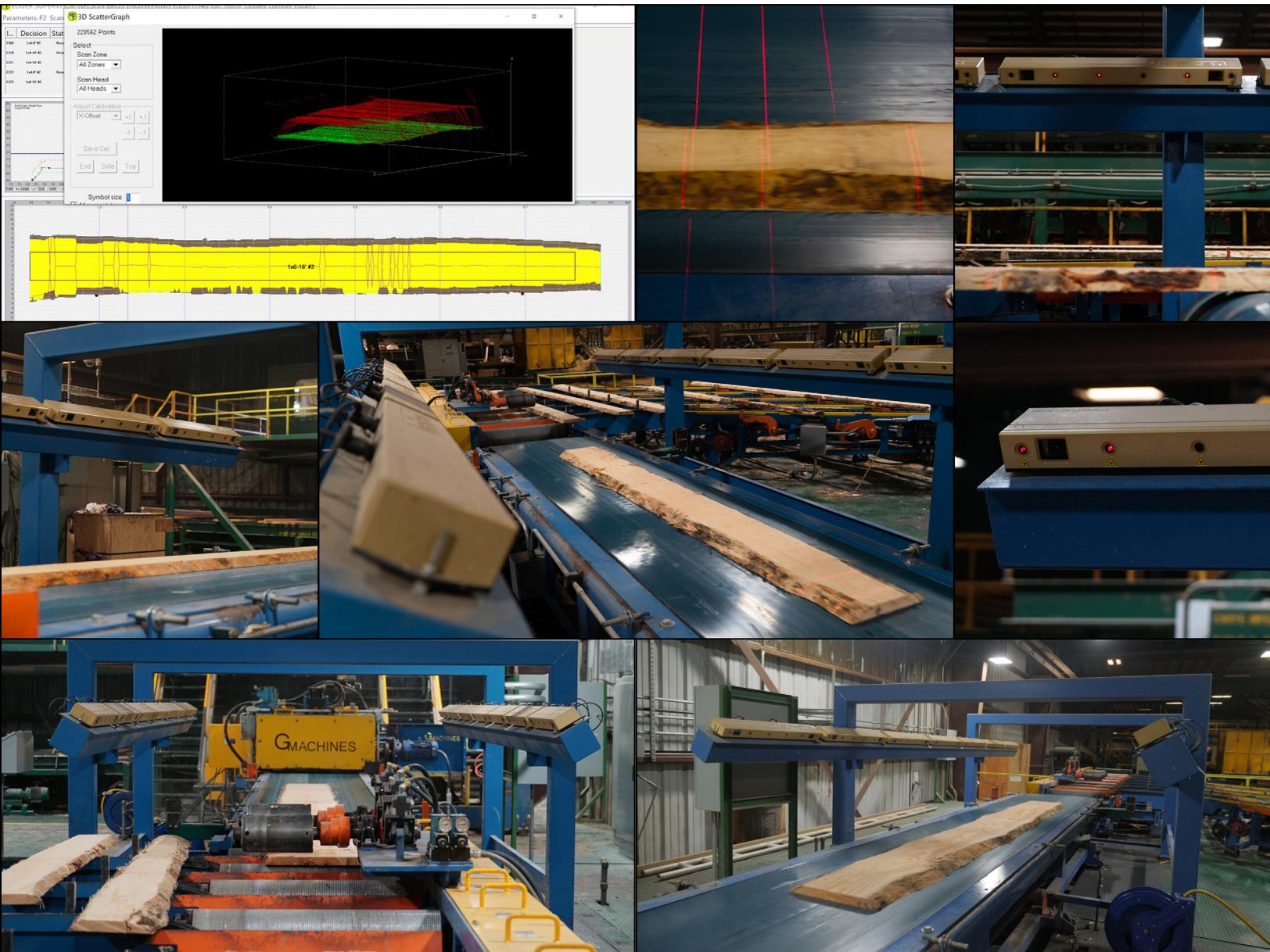




# Secondary Breakdown Board Edger Optimizer

The Board Edger Optimizer scans and evaluates a flitch for an optimal board solution that is passed to an edger machine.



The board edger optimizer gathers 3D scan data from the scanners. The optimizer supports lineal, transverse, and snapshot scanner orientations. The optimizer uses the scan data to create a 3D model of the flitch. The optimizer searches for the best solution within the scanned flitch, while conforming to wane limiting and dollar-price parameters set by the customer. This means that the optimizer evaluates the characteristics of individual pieces, trading off

between maximizing the volume of the board(s) which will allow more wane as compared to a higher value with lower wane.

The optimizer supports a wide variety of edger configurations, such as multiple saw edgers, lineal scan edgers with wiggle boxes, and edgers with top heads. The optimizer is customized to account for each sawmill's product mix and mill configuration.

## Optimizing System Features

### General Features

The optimizer offers both hardwood and softwood edger solutions.

- Number of boards, different angles, and offsets within the flitch are the key parameters we optimize in a flitch.
- The optimizing process evaluates the board's physical external geometry including Bow, Crook, as well as the variety of allowable wane, such as Compound Wane, Saddle Wane, and Wane equivalency.
- All NBE optimizers have tools for saving scan data, replaying saved files and assessing optimization decisions.
- The optimizer screen dashboard contains production statistics and current solution statistics.
- The supervisor computer enables the user to review past piece solutions.

### User Interface of Solution Screen

Visually shows the user the piece that was scanned and the solution that has been computed. The table included with solutions for each scanned piece, allowing the operator to review current and recent solutions.

### Historical Solution Analysis

We save the recent scanned pieces in the history for your review to be able to evaluate your system performance.

### Windows-based system

The Optimizer software runs on a standard Desktop PC on a Standard Windows Operating System and is fully customized to each sawmill application:

- Each system features 2 identical computers: an Optimization Computer, and a Supervisor Computer.
- Optimizer Computer is devoted full time to dollar-driven, real-time optimization.
- Supervisor Computer provides Windows-based simulations and solution parameter editing.
- Supervisor Computer serves as a "built-in" spare to the Optimizer Computer.
- The Supervisor Computer is not required for production.

### Technical Specifications

- Multiboard logic (Up to 8 edged pieces)
- Cut in Two logic (trim + reman logic for any edged piece)
- Partial Manufacture (e.g. 3 board logic on 3 saw edger)
- Planed grading (Assess wane rules at minimum sizes)
- Appearance grade option (Assess wane rules at actual sizes)

- Dimension, hardwood and board rules
- Infinite resolution for cut offsets
- 25 assessments of board taper
- Fast algorithm (important for time limited systems)
- Timed Optimization (time limit for lineal systems)
- 16 thickness classifications
- 16 width classifications
- 20 length classifications
- 20 grade classifications
- 400 product classifications
- 16 species or category classifications
- Real-time graphic plots of each solution
- Interactive cross-section profile plots
- Automatic save and retrieve of last 100 board
- Selected or automatic save of boards to archive
- Selected or automatic replay of boards in archive
- History log of parameter changes, calibrations, etc.
- Automatic or requested shift reports
- Networked Supervisor Computer (hot spare for optimizer)
- Multiple Monitor Computers allowed on network
- Random width logic (for shop or hardwood)
- Remote Internet Access
- Multiple optimizer Supervisors

## How Board Edger Optimizer helped others

Robert has optimized quite a bit of systems for our mill. In 2010, Robert did our 2" scanner. That was a transverse geometric scanner and it did very good for us. Robert has always been responsive anytime we call him during hours or after hours. Cecil Company optimized all three of our edgers at the mill: two 4" gang edgers and one 2" board edger. I worked with Robert very closely through the years with edger issues. The installation of the new board edger went very well. We are currently getting ready to start on another project with Robert. I've been working with Robert for the past 11 years now.

When it comes to scanning, we're looking for our vendors to help us to make sure the project comes off on time, so the mill starts when it's supposed to. We get what we were guaranteed from the equipment. That did happen when working with Robert. As we operate the machinery through the years, anytime anything is down for us, he makes time for us; gets us back on track.

We believe that with the scanners that we have run, there has been a good return on investment. I would definitely recommend anyone looking to startup sawmill equipment to work with Robert.

**Chris Hubbard | Plant Manager at Trinity River Lumber Company**