



Product Suite

- + AI-Driven Large-Field Inspection
- + 3D Laser Projection
- + Mobile Process Control





Aligned Vision laser projection systems **directly communicate design intent to the** **manufacturing floor**

Our inspection systems automatically verify as-planned and as-built components match.

Join virtual design and engineering data with real production, helping you:

- + Reduce operating costs.
- + Optimize manufacturing quality and speed.
- + Automatically verify and document that your products meet customer requirements.
- + Feed closed-loop continuous improvements across your operations.



Aligned Vision systems operate as digital point solutions with immediate out-of-the-box standalone benefits, and as Industry 4.0 building blocks for tomorrow's digital factory.

Our customers enjoy

- + Lowest cost, highest-performance laser and vision systems.
- + Greatest savings in operating costs, including minimized scrap and rework.
- + Accelerated quality manufacturing.
- + Full scalability and extensibility into today's manufacturing digitalization platforms.

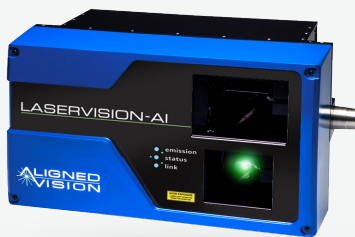


The industry's leading product suite for

- + Projection
- + Inspection
- + Process control

LaserVision-AI

Projection range: 3' – 50' / 1m–15m



LaserGuide²

Projection range: 3' – 50' / 1m–15m



microLaserGuide

Projection range: 3' – 25' / 1m – 8m



BuildGuide

Step-by-step fabrication guidance



LASERVISION-AI

3D Projection and Automatic Inspection System.

Integrating machine vision with proven industrial laser projection, **LaserVision-AI** brings large-field 3D automatic inspection to your shop floor.

Automatically verify ANY visible attribute with **AI-enabled**, large field inspection (6 - 25m²) and laser guidance.

PROVEN PROGRAMS

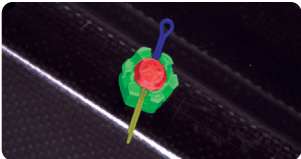
LaserVision-AI: Boeing -777X (2017), Sikorsky Blackhawk (2019)



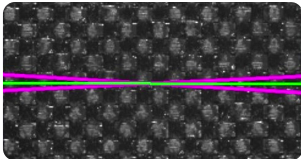
Boosting Quality and Speed

Provides robust, automatic inspections that cannot be performed by smart cameras, metrology or human inspectors.

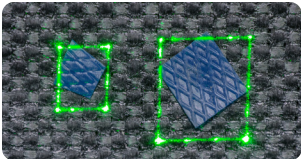
Minimizes idle time	+ Automatically performs an inspection when the electronic work instructions call for it.		
Eliminates inspector wait time	+ Conducts inspections in seconds with no operator intervention.		
Markedly reduces rework and scrap	+ Verifies attributes in real time and flags FOD, misaligned materials, missing fasteners or other flaws for immediate correction.		
Feeds deep learning and closed-loop process improvements	+ Quantifies uncertainty. + Enables tighter allowables and less overdesign.		
Automatically inspects any	+ FOD + Component presence/ location	+ Scratches + Cracks + Porosity	+ Fiber orientation + Wrinkles



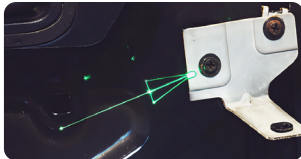
Bolt component recognized in 3m x 3m field



Fiber orientation



Aimed vision detected and laser pinpointed FOD



Laser feedback



Compare Inspection Options and Capabilities

			OTHER VENDORS		
					
		LASERVISION-AI	HUMAN	CAMERA/ARRAY	PTZ
IMAGING	+ Large-Field Resolution	Gigapixels	Qualitative	Lower	Lower
	+ Field Size	Up to 15 x 15 m	Limited by Human Access	Inverse of Resolution	Inverse of Resolution
	+ Image Quality	High	Vision Dependent	Lower	Lower
	+ Calibration to Model	Fully Referenced to Model	Minimal	Not Standard	Not Standard
	+ Calibration to WIP	Fully Automatic	Minimal	Not Standard	Not Standard
DATA SYSTEM	+ Control Data Interface	Yes, since 2017	No	Yes	Not Standard
	+ Enterprise Data Interface	Yes	No	Not Standard	Not Standard
	+ FAA/DOD Certification Documentation	Yes, since 2017	No	No	No
IMPLEMENTATION	+ Proven Aerospace Applications	Yes, since 2017	Legacy	No	No
	+ Documented Six Sigma Reliability	Yes	No	No	No
	+ Turnkey Solution	Yes	No	Partial	Partial
	+ Integration Ready	Yes	No	Not Standard	Not Standard
	+ Pinpoint Flaws on 3D WIP	Yes	Subjective	Not Standard	Not Standard

ScanBoost

Next- Level Projection Clarity

Aligned Vision's latest projector enhancement, ScanBoost, reduces visible flicker and delivers sharper, more stable laser lines for exceptional clarity in high-speed, precision-driven environments.

By boosting galvo refresh rates **up to 2.5×**, ScanBoost accelerates projection cycles and helps operators work more efficiently and comfortably.

Reduced flicker

+ Smoother, more consistent lines minimize visual fatigue

Up to 2.5× faster scanning

+ Accelerated projection keeps builds moving

Seamless compatibility

+ Ready for LaserGuide² and LaserVision-AI systems with proper firmware and calibration

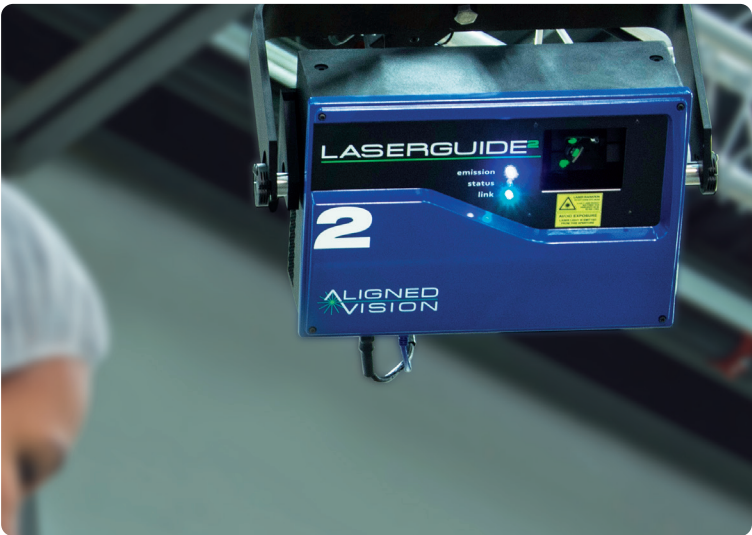


LASERGUIDE²

3D Industrial Laser Projection System has never been as cost efficient, accurate, reliable and versatile as it is today with LaserGuide².

With any LaserGuide system, you will:

- + Save money by meeting your needs with the fewest projectors, controllers and setup activities
- + Reduce setup time with a full suite of functions that align projectors automatically
- + Keep up to 4 teams adding value by projecting 4 jobs per projector with our fully flexible multitasking feature requirements
- + Keep operators working on fabrication – instead of projectors – with our industry-leading reliability



**The only company with
a projector for every application**

LaserGuide ²	Industry’s foremost standard system.
	Best-in-class range and functionality.
	Designed for projection range of 3 to 25 ft.
LaserGuide ² Long Throw (LT)	Same outstanding features as LaserGuide ² .
	Designed for projection range of 3 to 40 ft.
LaserGuide ² Long Throw Extended (LTE)	Same outstanding features as LaserGuide ² .
	Designed for projection range of 3 to 50 ft.
	Proven Boeing-qualified projection at 50 ft every time.
microLaserGuide	Only 8 lb in an 8½” x 4” x 5½” housing.
	Greatest accuracy in an ultra-portable package.
	Easy handling, mounting and relocating by a single operator.

PROVEN PROGRAMS

LaserGuide: Eurofighter Typhoon (1990), Boeing 777 (1990), Sikorsky Blackhawk (1991), Falcon 9 (2010).
microLaserGuide: F1 McLaren (2000), F-22 (2003) Virginia Class Submarine (2007).



Smart Mobile Devices

Eliminate step-away time for every operator.

Keep your team at the tool, adding value. Familiar smart mobile devices replace paper work instructions and travelers with electronic work instructions and travelers with electronic buyoffs – all at the tool.



Lowering Operating Costs

Fewer errors. Faster builds. Leaner operations.

Aligned Vision puts control in the operator's hands. With intuitive mobile devices replacing bulky stations, every step flows faster, errors drop, and operations scale with ease.

Provides full control of the fabrication steps

- + Full support of electronic work instructions with color graphics
- + Operator advances through steps via “Next” button on device
- + “Next” button automatically initiates LaserVision-AI inspections (when called for in the electronic work instructions)

Replaces tedious interaction with control computer

- + Support of multiple jobs and up to 8 mobile devices on a single computer
- + Real cycle time reductions generated

Auxiliary Components

- + Targets: Repairable, NIST traceable certification
- + Stands: Portable, stock, custom
- + Wireless label printers
- + Barcode readers
- + LED matrix billboards
- + Certification tools

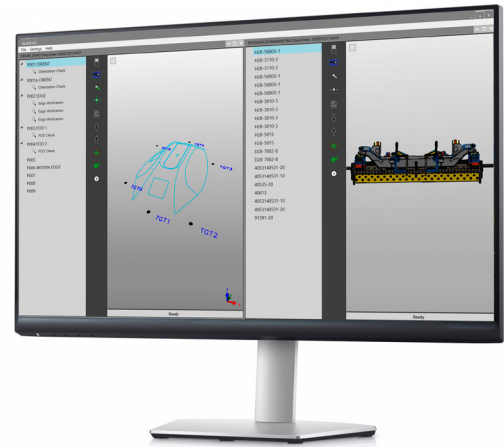


ALIGN 4.0

Control Software Solution

Align 4.0 is an open-platform system that helps accelerate operator value-added tasks and enables Industry 4.0 connectivity for 3D laser projection and automatic inspection processes.

Only one control computer is needed to run up to 8 jobs simultaneously, minimizing equipment and maintenance costs as well as shop floor footprint, and making file management easy.



With Align 4.0 you will:

- + Support full control of each fabrication job both at the controller and on smart mobile devices.
- + Support **AutoAlign** to automatically locate targets for any projector, and **SystemAlign** to automatically register all projectors when the first is registered.
- + Make operators more efficient by giving them **3D CAD** images, **3D ply** viewer window and other improvements.
- + Improve Industry 4.0 connectivity with:
 - Support of master **CSV**
 - Multiple file formats
 - Full integration both upstream and downstream of projection/inspection operations
 - Plug-and-play **PLC** interface

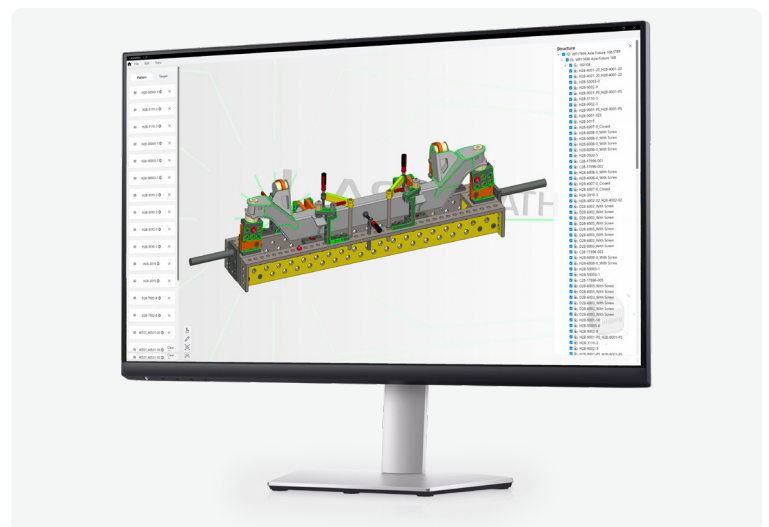
LASERPATH

Data Generation Software

- + Generate production files directly from CAD models
- + Simple and easy to use. No special CAD or engineering skills required
- + Real-time display directly from CAD model
- + No annual fees, lowest cost data generation solution available

PROVEN PROGRAMS

Fully flexible multitasking software: F-22 (1995); C-17 (1998)



BUILDGUIDE

Process-Control Suite

Put your product work instructions in the palm of your operator's hand.

BuildGuide process control suite provides step-by-step guidance to your operator electronically via familiar mobile devices, smartphone or tablet.



Reducing costs and raising quality and speed, BuildGuide:

Ensures that parts are built as designed

- + Complete graphic work instructions and ply book pages on each operator's mobile device instructions call for it
- + Non-projected steps included in instructions
- + Debulk management on device ensures correct sequence, vacuum pressure and duration



Tracks all work steps and build progress electronically

- + User logins, work orders, part selection and ply confirmation
- + Electronic buyoffs from each operator and inspector



Generates a complete electronic report of each build

- + Process parameters (e.g. debulk vacuum and duration)
- + Process sequence/timing
- + Buyoffs



PROVEN PROGRAMS

Fully flexible multitasking software: F-22 (1995); C-17 (1998)



SDK (SOFTWARE DEVELOPMENT KIT)

Aligned Vision systems are ready for digitalization and automation of the shop floor.

Our **SDK** is proven on production floors to enable integration with automated manufacturing systems, including automated fiber placement (**AFP**) and automated tape laying (**ATL**).

SDK includes

- + Automatic maintenance of common coordinate system
- + Complete SDK: API, DLL, manual, sample code
- + Instant display of any defect location, tow, course, boundary, lap or gap

PROVEN PROGRAMS: SDK: 787 (2012), 777-X (2017)



KITGUIDE

Nest Sorting

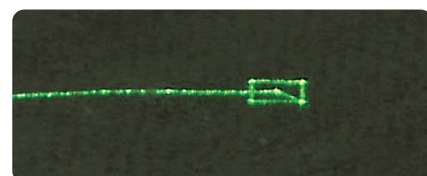
Reducing operating costs considerably, **KitGuide** uses accurate laser pinpointing to identify the next component to be unloaded from a cutting table during kitting procedures.

PROVEN PROGRAMS: KitGuide: H-60 (1997), V-22 (2006)



Increasing kitting efficiency, KitGuide:

- + Speeds sorting and eliminates kitting errors:
 - Eliminates ply maps and label-based sorting
 - Supports simultaneous unloading from both sides of table
- + Simultaneously guides unloading for up to 4 kits
- + Generates barcode labels with optional wireless printers
- + Compatible with all nesting and cutter software



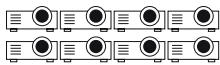
Lowest Cost Laser System

		OTHER LASER SYSTEMS
Annual Software & Hardware Fees	ELIMINATED No annual software & hardware support fees.	Pay more every year for life of system.
Step-Away Time	NO STEP-AWAY TIME AV full function remote controls for every operator eliminates step-away time.	Waste cycle time and money on every ply laid up with the system.
Operating Costs	Automatic work instructions and data entry.	Waste time with ply books and entering data by hand.
Software	MULTITASKING YOU WILL USE Eliminates seats of software.	Requires software seat for every job.
Hardware	Eliminates extra control computers.	Requires control hardware for every job.
Projectors	MULTITASKING YOU WILL USE Fewer projectors needs. Reconfigure projectors for each application easily with simple, flexible system.	Deficient multitasking requires more projectors Waste time and talent on each application reconfiguring inflexible projector system.

Results of a detailed cost analysis show that Aligned Vision offers the lowest cost laser systems on the market today.

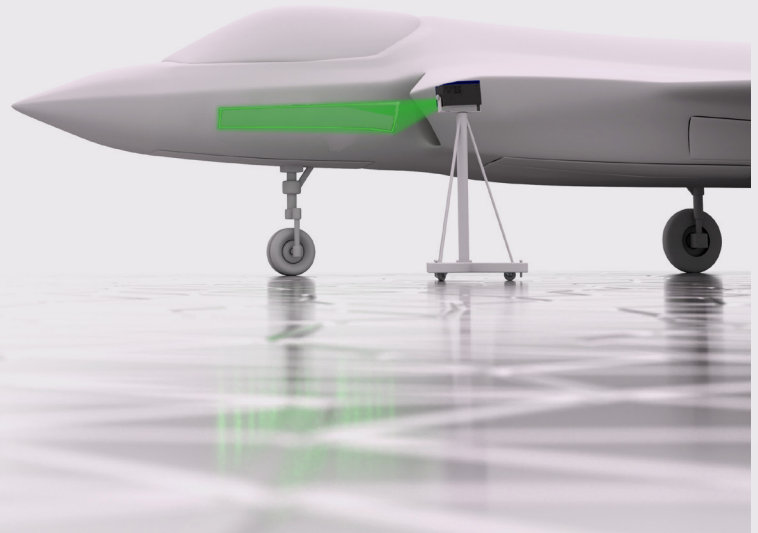
A low projector price doesn't mean much if you have to pay additional upfront and annual costs.

Consider, for example, what it takes to perform six jobs simultaneously.

	Others	
Projectors	8 x 	6 x 
Controllers	6 x 	1 x 
Software Seats	6 x 	1 x 
Full Function Remotes		

Experience Superior Customer Service

- + No annual fees
- + Immediate technical support
- + Unlimited free phone/email support
- + Artificial Intelligence-enabled rapid application development
- + Quick service turnaround: 2-3 days
- + Lowest cost cal/cert and overhaul
- + Loaner units provided during servicing
- + Field-replaceable laser and galvos
- + Backed by a 2 year warranty



Trusted by

