



INVITATION FOR BIDS
OFFICE OF PROCUREMENT & CONTRACTS

1. INSTRUCTIONS FOR BIDDERS

- a. Sealed bids will be received in the Office of Procurement & Contracts, Mississippi State University, for the purchase of the items listed herein.
- b. All bids must be received in the Office of Procurement & Contracts on or before the bid opening time and date listed herein. Delivery of bids must be during normal working hours, 8:00 a.m. to 5:00 p.m. CST, except on weekends and holidays when no delivery is possible.
- c. Bidders shall submit their bids either electronically or in a sealed envelope. To submit electronically, follow the instructions below. Bids CANNOT be emailed.
 - i. Sealed bids should include the bid number on the face of the envelope as well as the bidders' name and address. Bids should be sent to: 245 Barr Avenue, 610 McArthur Hall, Mississippi State, MS 39762.
 - ii. At this time we only accept non-ITS bids electronically. For electronic submission of bids, go to: portal.magic.ms.gov and use the RFX number on the next page as your reference number.
- d. All questions regarding this bid should be directed to the Office of Procurement & Contracts at 662-325-2550.

2. TERMS AND CONDITIONS

- a. All bids should be bid "FOB Destination"
- b. Bidders must comply with all rules, regulations, and statutes relating to purchasing in the State of Mississippi, in addition to the requirements on this form. General Bid Terms and Conditions can be found here:
https://www.procurement.msstate.edu/procurement/bids/Bid_General_Terms_May_2019_V2.pdf
- c. Any contract resulting from this Invitation for Bid shall be in substantial compliance with Mississippi State University's Standard Contract Addendum:
<https://www.procurement.msstate.edu/contracts/standardaddendum.pdf>

Bid Number/RFX Number: 23-20/RFX# 3160005689

Opening Date: March 7,2023 at 2:00 p.m.

Description: Laser Projector

Vendor Name: _____

Vendor Address: _____

Telephone Number: _____

Days the Offer is Firm: _____

Authorized Signature: _____

Name: _____

Title: _____

Item	Quantity	Description	Unit Price	Total Price
1	1	Laser Projector		

1.0 Scope

This requirements description covers a laser projection system for guidance of composite materials layup. The laser projector system is comprised of two (2) laser projector heads, a computer control system, laser tool targets, and all wiring and equipment needed to connect the control system to the projector heads. The laser projector shall be designed to project composite ply perimeters onto a tool surface based on 3D CAD nominal data in a controlled environment. Layup schedules shall be uploaded to the control software and be capable of being operated by shop Operations technicians.

2.0 Applicable Documents

Industry Specifications, Standards and Handbooks

IEC 60825 Safety of Laser Products - Part 1: Equipment classification and requirements
International Electrotechnical Commission

ANSI Z136 American National Standard for Safe Use of Lasers American National Standards Institute

Abbreviations, Acronyms and Terms used in this document are in accordance with ASME Y14.38M, Abbreviations and Acronyms.

3.0 Requirements

3.1 Quotation Requirements

The Supplier shall notify Mississippi State University via email or direct contact of any concerns, objections, and/or comments they have relative to this specification. The Supplier shall provide mechanical and electrical prints of a similar machine produced by the Supplier, if possible. These documents will remain property of the Supplier.

This specification will not cover all the design details or unique features of the equipment; therefore, the Suppliers quotation shall fully describe his proposed equipment and shall provide the following information:

- A complete equipment specification, with notes on special or optional features, equipment drawings or photographs, proposed control system details, proposed operator panel layout, and any other data that permits a full technical evaluation.
- The quotation shall contain a total price for the equipment as required to meet this specification, with any exceptions noted. Each requested option shall be priced separately.

3.2 General Requirements

An overall responsibility shall be accepted by the Supplier for the design, manufacture, performance, and reliability of the equipment as defined in this specification. This responsibility shall provide for service during the warranty period.

The laser projection system is intended to be used in a workforce development classroom training environment that simulates an aerospace industry controlled contaminant area (CCA). The system shall be designed and manufactured to facilitate the stacking of composite plies in accordance with the 3D CAD nominal geometry of the end-item hardware with respect to the mold tool definition. The projection unit shall minimally consist of a maximum of two (2) projector head units, a control PC or other human-machine interface (HMI), software needed to operate the projectors, all cabling and peripheral equipment needed to connect the projector to the controller, projector targets, projector mounting hardware, and a calibration standard. Laser system shall have capability to meet all applicable requirements of IEC 60825 and/or ANSI Z136.

3.3 Projection Envelope

The nominal projection area is 25.0 feet x 25.0 feet square. The unit shall be capable of projecting shapes within 0.050 inch positional tolerance using no more than two (2) projector head units within that volume. Maximum projection height is 12.0 feet.

3.4 System Capabilities

The system must be capable of importing tool ball locations to define the relative location of the projection with respect to the mold tool. The software shall be capable of importing 3D ply shape projections from Siemens Fibersim, Dassault CATIA CPD, Collins HYPERX or similar CAD software. Typically these exports are text based files in a format specific for laser projector OEM software systems.

The system must be capable of rescanning targets within a user-specified interval to ensure the location integrity of the mold tool with respect to the laser projector. It is desired that an auto-align feature be present in the software system that has the capability to locate the tool without manual intervention from the operator.

The system must be able to project text, orientation lines, and ply rosette data onto the ply projection area.

The software should be able to minimize projector flickering across complex mold geometries either automatically or on-demand.

The system shall be capable of projecting up to eight (8) simultaneous individual projections.

The system should be capable of mounting to both classroom ceiling structural support and to laser projector stands. Laser projector stands are not required as part of the quotation.

The system should be supplied with fifty (50) zero degree tool targets with 0.250 inch shank.

A calibration standard shall be quoted as an option.

3.5 Guarantee and Warranty

The Supplier shall warrant all equipment in this specification to be free of defects in material and workmanship, and be in conformity with the requirements of this SOW for a minimum of 1 year, (12 months), from the date of final acceptance at the Purchaser's facility. If the equipment fails to meet any portion of this warranty, then the Supplier shall repair or replace the equipment in whole or in part. Quote as an option the price of a 2 year, (24 month), warranty. If, within the warranty period, the services of the Supplier are required, the Supplier shall supply, at its cost and expense, supply services and parts as are necessary to return the machine to its warranted condition in the shortest possible time.

If, within the guarantee period, the services of the Supplier are required, services shall be supplied as necessary to return the machine to its specified condition in the shortest time possible. The Supplier shall incur all expenses associated with such services.

3.6 Documentation

All documentation shall be forwarded to the Purchaser upon shipment of the equipment to the Purchaser's plant. All documentation shall be in English.

3.7 Delivery and Training

Quotation should include all shipping costs to Mississippi State University Advanced Composites Institute in Starkville, Mississippi (39759).

Quote training as an option, and notate whether training is performed on-site at the ACI or virtually via Teams, WebEx, Skype, etc.

Installation will be performed by Mississippi State University.