

INSTRUCTIONAL EQUIPMENT REQUEST

Internal Use

RECEIVED

2016-2017

IE #: Fall 35

Total \$: 85,034.00

OCT 20 2016

VP ACADEMIC SERVICES
LAS POSITAS COLLEGE

Requester Name: Scott Miner

Division Name: CATSS

SECTION 1: SUMMARY INFORMATION

Brief Title of the Request:

Robotic Educational Welding Cell

Equipment Location Building: 800

Room: 810

SECTION 2: EQUIPMENT DESCRIPTION

The equipment is: A Replacement An Upgrade New Equipment/Technology

Describe the specific equipment requested and how it will be used to replace, upgrade or provide new technology to LPC from what is currently in place:

This equipment is desired so as to stay abreast of the current trends in industry. Automation is the process of mechanizing a manual process. This Robotic Welding Cell will allow the students to set up and operate a real welding robot. Using the teach commands, students will teach the robot the work they did manually, then put it into production like welding simulations. We currently have semi-automatic welding equipment and mechanized straight line tractor welding/cutting equipment. The welding robot works in a 3D space, not a straight line per our existing equipment. Increasingly, we are getting requests for students that have skills operating robotic or CNC equipment for entry level work. Many current High School students are coming to LPC with prior robotics. This equipment will also allow Engineering Technology students to prepare for automation in the workplace. The robot can also be programmed without the welder operational and become a robotic training tool only, with the welding be an added benefit to these students.

If applicable, describe the legal requirement, mandate, or safety concern for purchase of this equipment, making specific reference to the legal requirement or regulation:

N/A

SECTION 3: LPC MISSION STATEMENT AND LPC PLANNING PRIORITIES

LPC MISSION STATEMENT:

LPC is an inclusive learning-centered institution providing educational opportunities and support for completion of students' transfer, degree, basic skills, career-technical, and retraining goals.

LPC PLANNING PRIORITIES:

- ❖ Establish regular and ongoing processes to implement best practices to meet ACCJC standards.
- ❖ Provide necessary institutional support for curriculum development and maintenance.
- ❖ Develop processes to facilitate ongoing meaningful assessment of SLOs and integrate assessment of SLOs into college processes.
- ❖ Expand tutoring services to meet demand and support student success in Basic Skills, CTE, and Transfer courses.

Specify how the equipment supports *LPC's Mission Statement and Planning Priorities:*

Mission - Used to support students in the area of Career Technical Education, transfer, degree and retraining goals.

Priorities - Replacement of the existing equipment provides the necessary institutional support to maintain curriculum. Meaningful course and program level SLO's can be performed using the robot. . The practice of the students in conjunction with coaching from others represents the CTE version of tutoring.

SECTION 4: EDUCATIONAL ITEMS – PROGRAM REVIEW

Specify the educational programs this equipment supports:

Welding Technology/ Engineering Technology

If this equipment is included in your Program Review, please include the exact wording. If equipment is not included, explain why:

"World Class Welding Instruction - Continuous Improvement"

"Increase the use of automation in the welding lab"

"One area of constant concern and need is to make sure that the equipment we use in all of our CTE programs are safe to use and similar to that in our respective trade, so that students are prepared for the proper workplace environment"

SECTION 5: TEACHING AND LEARNING

Describe in detail the impact this equipment will have on teaching:

This machine will allow teaching of current equipment used in industry, along with advanced features, will help prepare the students for current and future careers. The controls on the robotic welding cell is simple and easy to teach a student to operate. We currently have no equipment that is capable of teaching robotics. Automation is a current trend in our industry.

Describe in detail the impact this equipment will have on learning:

This machine will allow learning on current equipment used in industry. The controls are logical and easy for the students to understand. The new robotic welding cell will compliment other machines in the room. This robotic welding cell is the only tool we would have to teach the concepts of automation.

Each academic year, this equipment will impact: 25+ # of classes/sections 250+ # of students

SECTION 6: OUTCOMES (SLOs)

Using your documented SLOs, specify how the equipment will enable student learning outcomes to be achieved?

This equipment is used to teach robotics and we would need to complete COURSE level SLO's that would include something that currently does not exist.
This equipment could be used to complete all three of our PROGRAM level SLO's as well.

What are the consequences related to learning outcomes if request is not funded?

Students will continue to performing welding using manual and semiautomatic equipment. We would not be able to add SLO's in the area of automation.

SECTION 7: TOTAL COST OF OWNERSHIP (FINANCIAL & SUSTAINABILITY)

What is the potential life span of the requested equipment?

The equipment on this request should last from 10-20 years based on usage.

If new storage is needed, describe the storage, location, and costs: (Specific storage costs should be detailed in the "Part A: Initial Start-up Costs" section below.)

N/A

What will be required to maintain the equipment, such as regular servicing or upkeep? (Specific on-going costs should be detailed in the "Part B: On-Going Annual Operating Costs" sections below as applicable.)

Minor occasional maintenance , should operate trouble free for years

Explain how this equipment meets or exceeds basic sustainability efforts and/or provides renewable resources to the college:

The machine is made from materials that can be 100% recycled at the end of its usable lifespan. The old machine will be 100% recycled. All of the Steel, Aluminum and Stainless Steel that students use with this machine is recycled as well.

Part A: Initial Start-up Costs

<u>Item</u>	<u>Cost</u>	<u>Comments</u>
Equipment or Materials	77,200.00	
Taxes (9.5%)	7,334.00	
Shipping or Delivery Charge	500.00	estimate
Installation Costs *	0.00	Instructor & Technician installed
Miscellaneous Costs:		
Facilities Modifications		
Operator Training	0.00	Free Training Classes available from Lincoln
Maintenance & Repair Training		
Other:		
Vendor Discount		
Grand Total:		85,034.00

Part B: On-Going Annual Operating Costs

<u>Item</u>	<u>Cost</u>	<u>Comments</u>
Annual Service or Maintenance	0.00	
Estimated Parts Replacement Per Year	100.00	
Outside Standardization or Calibration Costs	0.00	
Storage Costs	0.00	
New Supply Costs	0.00	
Miscellaneous Costs:	20.00	
Maintenance & Repair Labor		
Other:		
Annual Operating Costs:		120.00

Indicate the source of funding for on-going annual operating costs:

Department Supply Budget

Part C: Incremental Labor Costs

OPERATOR:

Indicate the key operator: Students & Instructors

Is this in their current scope of duties? Complete Educational Goals

Indicate cost to train key operator (include in Initial Start-up Costs above): 0

Indicate amount of time per month key operator will use equipment: 100+ Hours

MAINTENANCE & REPAIRS:

Indicate the person performing maintenance and repairs: Welding/Auto Department Technician

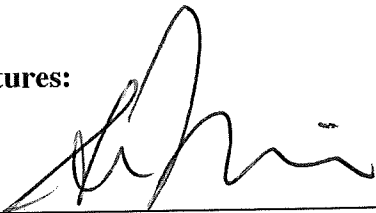
Is this in their current scope of duties? Yes

Indicate cost to train for maintenance and repairs: 0

Indicate amount of time per month maintenance will be required: less than 15 minutes

SECTION 8: APPROVALS

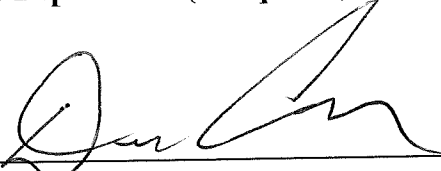
Funded requesters will be expected to respond to a brief RAC feedback survey by a requested deadline.
Requests for computer-related equipment and printers must be reviewed by the LPC IT Department.

Signatures: 

Requester

10/17/14

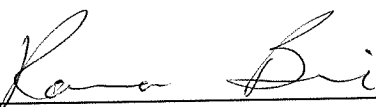
Date

IT Department (if required)


Dean/Manager

Date
10/20/16

Date



Vice President

10/24/16

Date



10.17.2016

SYSTEM FIRM PROPOSAL
Education Cell 2.0

PREPARED BY:

Sarah Evans

22221 Saint Clair Avenue - Cleveland, OH - 44117

Phone: 216-383-2617 - Fax:

PREPARED FOR:

Las Positas Community College

Quick Reference: WCB86

Dear Scott Miner,

Lincoln Automation is pleased to provide you with this Training Systems proposal.

One of Lincoln Electric's many core competencies is providing complete welding and training systems to our customers as well as assistance and support. These unique systems improve quality, lower costs, and help customers enhance their working environments. Through design, integration, world-class customer service, and unparalleled welding expertise, we are the industry leader in automated arc welding and tooling solutions. We have served industries as diverse as automotive, aerospace, transportation, ship building, petrochemical and heavy industry.

Lincoln Automation would like to thank you for the opportunity to submit a proposal for your facility. We look forward to working with you and your company on this application.

If you have any questions, please feel free to contact us at any time.

We look forward to hearing from you.

Kindest Regards,

Sarah Evans
216-383-2617
sarah_evans@lincolnelectric.com

1 Overview

Lincoln Electric Company Overview

Lincoln Electric is the world leader in the design, development and manufacture of arc welding products, robotic arc welding systems, plasma and oxyfuel cutting equipment, Robotic Training and Virtual Welding Systems and we have a leading global position in the brazing and soldering alloys market. Our enduring passion for the development and application of our technologies allows us to create complete solutions that make our customers more productive and successful. We aim to distinguish ourselves through an unwavering commitment to our customers with a relentless drive to maximize added value for every solution we deliver.

About Lincoln Electric Training Products

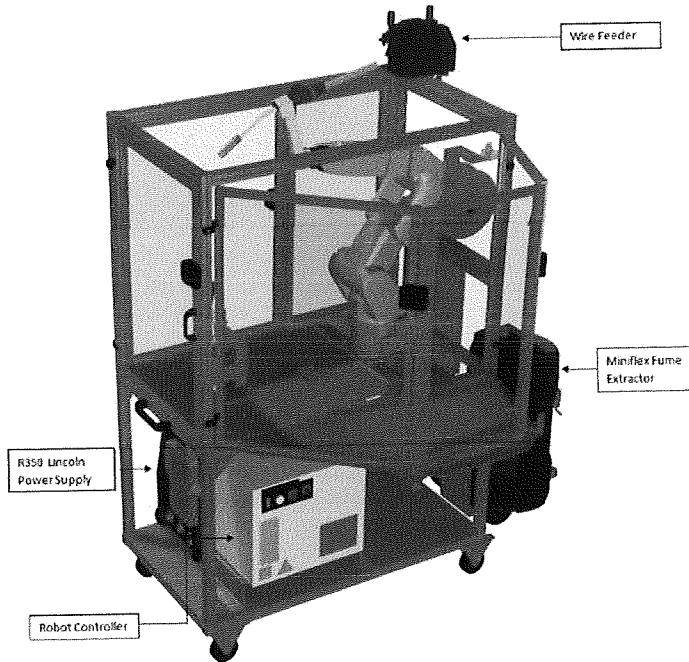
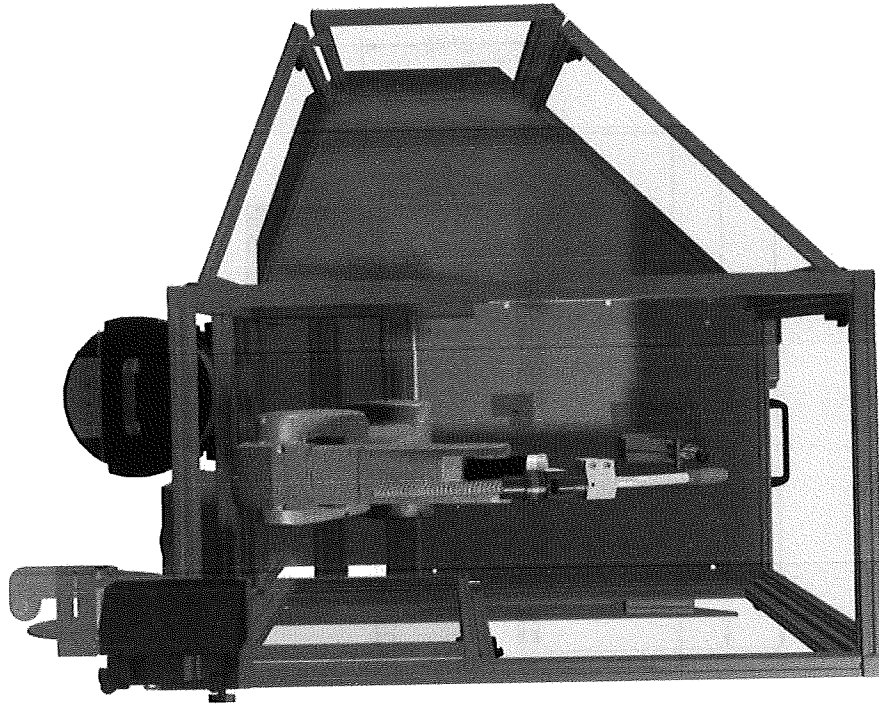
VRTEX® virtual reality arc welding training simulators take welding training to a new level. These computer based training systems are educational tools designed to supplement and enhance traditional welding training. They allow students to practice their welding technique in a simulated and immersive environment. The VRTEX systems promote the efficient transfer of quality welding skills and body positioning to the welding booth while reducing material waste associated with traditional welding training. The combination of realistic puddle, arc welding sound, and real time feedback tied to the welder's movement provides an exciting, hands-on training experience. The RealWeld® welding trainer teaches multiple welding processes and positions, and prompts the user with audio coaching, in both arc-on and arc-off modes, to help develop and maintain proper technique and positioning. The vertical design maintains a small footprint that makes the system ideal for any weld booth providing the optimal training experience. The instant feedback provides data that can assist in student evaluation and progression.

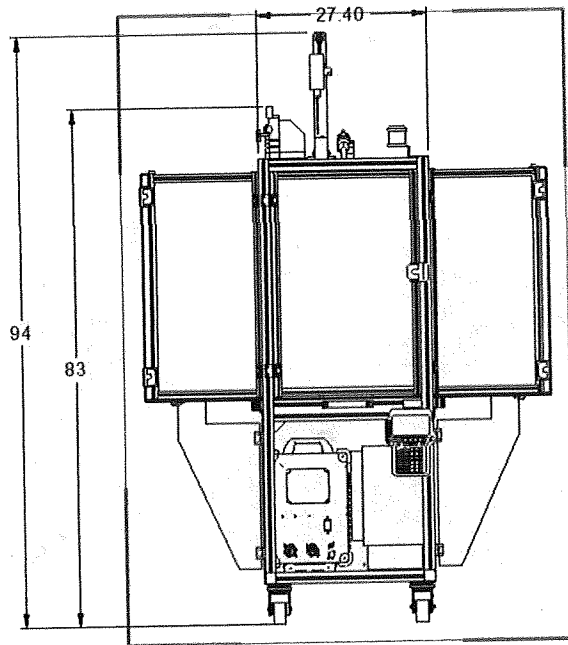
Our VRTEX® simulators are a best-in-class, advanced level virtual welding training system. They are designed to provide a full featured, expandable platform in an easy to use and engaging welding training tool. It is ideal for basic to advanced welding training as a testing, recruitment and engagement tool for welding education and industry for preparation and advanced level evaluation for instructors. We offer a free 2 day VRTEX® training class in Cleveland, OH, every month in which all customers are welcome to attend. The schedule and registration is available on www.VRTEX.com under the Events Section.

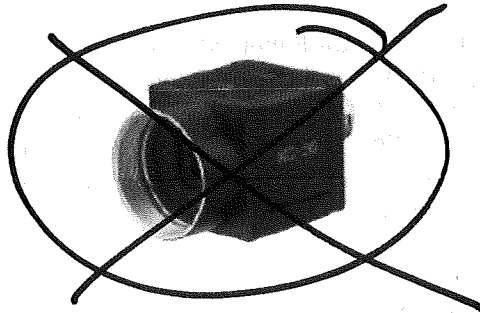
Our RealWeld® arc-on/arc-off welding system is a basic to advanced level welding training system. RealWeld is designed to provide consistent guidance and the most real-life experience possible when learning the welding technique and positioning. We offer a free 1 day RealWeld® training class in Cleveland, OH, in which all customers are welcome to attend. The schedule and registration information is available at www.lincolnelectric.com/realweld-registration.

2 System Concept









Quantity	Price	Subtotal
1	USD 85,000.00	USD 85,000.00

Education Cell Intermediate

AD2437-2 Robotic Education Cell, Gen 2.0, Intermediate:

- ROBOTIC SYSTEM:
 - Specifications:
 - Height: 81.23 inches
 - Length: 64.82 inches
 - Width: 66 inches (sides expanded), 32 inches (sides folded)
 - Weight: 870 lbs
 - Work surface area: 2,000 sq.in.
 - Robotic system input voltage: 230V
 - Standard/welding voltage, 120V Optional/Robot operation and programming
- POWER SOURCE & FEEDER:
 - Power Wave® R350 and AutoDrive® 4R100
 - Input Voltage:
 - 208/230/380-415/460/575/1/3/50/60
 - Input Current @ Rated Output:
 - 3 Ph/40% Duty Cycle: 39/35/19/17/14 A
 - 1 Ph/40% Duty Cycle: 60/67/NA/NA/NA A
 - Output Range: 5 - 350 Amps
 - Rated Output:
 - GMAW: 350A/31.5V/40%
 - GMAW: 300A/29V/100%
- ROBOT:
 - FANUC ARC Mate® 50iD/7L
 - Six Axis Mechanical Unit
 - 7 kg Maximum Payload
 - 0.892m Reach
 - FANUC Robotics ARC Mate controller
 - 8-Axis Control Board
 - 6 Channel Servo Amplifier
 - Dual Check Safety

- RIA compliant Operator Panel with T1-Auto Mode Switch, Cycle Start, E-stop Buttons and ON-OFF switch
- Memory Card PCMCIA Slot on Operator Panel
- Fixed Digital I/O Port with 28 digital inputs, (source type)
- FANUC Robotics LR ARCTool® Software - compliant with RIA R15.06 Safety Requirements

- SAFETY/WELD CELL CONTROLS
- CSA/UL certification ready system.
- PLEASE NOTE:
 - Obtaining CSA/UL certification is the responsibility of the customer
- Fully integrated ANSI/RIA 15.06-2012 compliant operator safety devices including a door safety switch
- RIA compliant robotic controller operator panel, robotic software and pendant
- Quantity 2, hand shields (personal protection equipment) supplied with robotic system
- COMPLETE SYSTEM DOCUMENTATION
- Hard Copy binder
- Electronic manuals and tools include operations manuals, maintenance guides, spare parts lists, calibration numbers and serial numbers, print and supplier references and specifications.
- TRAINING PRODUCTS:
- Robotic 3-in-1 welding fixture
- Education Cell Project Based Lessons - Book 1
- Education Cell Project Based Lessons - Book 2
- Miniflex® Fume Extraction
- Lettering Program (preset program creating letters)
- 120V option
- Cert training program, 25 seat Weldpro
- Additional Instructor Cert training program

The 120V option allows operation of ONLY the robot through a standard 120V wall outlet

- 230V single phase is required to run BOTH the robot and the welder
- This option is designed to assist the instructor in performing programming using only the robot in a classroom setting.

Quantity	Price	Subtotal
1	USD 77,200.00	USD 77,200.00

5 Terms and Conditions

5.1 Payment Terms

For VRTEX, RealWeld and Robotic Education Cell products, prices are based on net 30 days with pre-approved credit in place, no cash discounts allowed. The Lincoln Electric Company may change this method of payment in its sole discretion. UCC Filing may be required.

5.2 Standard Terms And Conditions

Single Source Statement:

Lincoln Electric is the only authorized sales channel available for purchase of VRTEX, RealWeld and the Robotic Education Cell. Any attempt by any third party to sell you this product should be considered potentially fraudulent and can be reported to the Lincoln Electric Company.

Delivery:

Estimated shipping date is 4 weeks based on current build schedule activity. Actual shipping timeline may vary, and is to be determined based on production schedule at the time an order is received and confirmed. The above prices are in effect for nine (9) months from date of quotation.

Terms/Conditions and Transfer of Title:

Unless explicitly specified in the proposal, shipping is included in the invoiced price.

Title to the shipment to the Buyer at the time the carrier accepts the shipment.

Prices do NOT include state and local taxes.

UCC Filing may be required.

On Site assistance:

Prices do not include system installation or onsite training unless otherwise stated. Lincoln Automation can provide additional on-site customer training, and installation assistance at an additional cost.

For RealWeld products, pricing includes 1 day of operations training in Cleveland, Ohio. Travel and living expenses are not included. The training schedule and online registration can be found at www.lincolnelectric.com/realweld-registration.

Training for Advanced Trainers:

For VRTEX products, pricing includes 2 days of basic operation training in Cleveland, Ohio. Travel and living expenses are not included. The training schedule and online registration can be found at www.vrtex.com under the Events section.

For the robotic educational system, pricing includes three to five days of basic operations training for three people in Cleveland, Ohio. Travel and living expenses are not included. Training registration is available through calling 888-935-3878.

The three basic seats that come with the purchase of a robotic cell are non-transferable and cannot be exchanged for any other training programs. The three seats will expire within two years of the date of purchase.

Cancellations are accepted prior to one week before a pre-scheduled training session. Company cancellations within one week of a pre-scheduled training session forfeit one training slot. No-show students forfeit all remaining company training slots.

The Lincoln Electric Company strictly prohibits smoking on company premises, including the Automation facilities, and in the parking lot.

End-User Warranty Period*

LECO will assume parts expense of correcting defects during the full warranty period. All warranty periods start from the date of purchase to the original end-user or from the date of manufacture if the original invoice cannot be provided, and are as follows:

- 3 Years

- All welding machines, wire feeders and plasma cutting machines unless listed below

- 1 Year

- All VRTEX and RealWeld Training Products, including replacement parts

- All water coolers (internal or external)

- Arc welding, cutting, and material handling robots, robotic controllers, and related options

- All Environmental Systems equipment, including portable units, central units and accessories. (Does not include consumable items listed under 30 day warranty.)

- All welding and cutting accessories including wire feed modules, undercarriages, field installed options that are sold separately, unattached options, welding supplies, standard accessory sets, replacement parts, and Magnum products. (Does not include expendable parts and guns/torches listed under 90 and 30 day warranty)

- All Replacement Parts

- 90 Days

- All robotic MIG, TIG, and PAC Torches/cable assemblies

- 30 Days

- All consumable items that may be used with the environmental systems described above. This includes hoses, filters, belts and hose adapters.

- Expendable Parts -LECO is not responsible for replacement of any expendable part required due to normal wear.

*Equipment manufactured for LECO is subject to the warranty period of the original manufacturer (for example: Sick Products -1 year).

Conditions of Warranty - To obtain warranty coverage:

The End User must contact LECO about any defect claimed under LECO's warranty prior to correction. Determination of warranty on equipment will be made by LECO or LECO's Authorized Service Facility.

Warranty Repair:

If LECO or LECO's Authorized Service Facility confirms the existence of a defect covered by this warranty, the defect will be corrected by repair or replacement at LECO's option. At LECO's request, the Integrator or end-user must return to LECO or LECO's Authorized Service Facility any "Goods" claimed defective under LECO's warranty.

Warranty/Service Freight Costs:

For equipment, the end-user customer is responsible for shipment both to and from LECO's Authorized Service Facility. LECO will bear the cost of any required return shipment from LECO's Authorized Service Facility to LECO.

For full terms and conditions please visit:

www.lincolnelectric.com/automation-terms

