

INVITATION TO BID

Bid Invitation Number: 111-2013

Date of Issue: 09/3/13

Sealed bids will be received in the office of the Division of Central Purchasing, 200 East Main Street, Lexington, Kentucky, until **2:00 PM**, prevailing local time on **09/17/2013**. Bids must be received by the above-mentioned date and time. Mailed bids should be sent to:

Division of Central Purchasing
200 East Main Street, Room 338
Lexington, KY 40507, (859) 258-3320

The Lexington-Fayette Urban County Government assumes no responsibility for bids that are not addressed and delivered as indicated above. Bids that are not delivered to the Division of Central Purchasing by the stated time and date will be rejected.

All bids must have the company name and address, bid invitation number, and the commodity/service on the outside of the envelope.

Bids are to include all shipping costs to the point of delivery located at: See Specifications

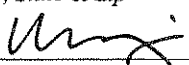
Bid Security Required: ___ Yes X No Performance Bond Required: ___ Yes X No
Cashier Check, Certified Check, Bid Bond (Personal checks and company checks will not be acceptable).

Commodity/Service
Traffic Signal and Control Equipment
See specifications

<p style="text-align: center;"><u>Check One:</u></p> <p><input type="checkbox"/> Bid Specifications Met</p> <p><input checked="" type="checkbox"/> Exceptions to Bid Specifications. <i>Exceptions shall be itemized and attached to bid proposal submitted.</i></p>	<p style="text-align: center;"><u>Proposed Delivery:</u></p> <p><u>60</u> days after acceptance of bid.</p>
<p style="text-align: center;"><u>Procurement Card Usage</u></p> <p><input type="checkbox"/> Yes The Lexington-Fayette Urban County Government will be using Procurement Cards to purchase goods and services and also to make payments. Will you accept Procurement Cards?</p> <p><input checked="" type="checkbox"/> No</p>	

Submitted by: Traffic Control Products
Firm 4565 Glenbrook Road
Address
Willoughby, Ohio 44094
City, State & Zip

Bid must be signed:
(original signature)


Signature of Authorized Company Representative – Title
Kenn Durgin
Representative's Name (Typed or printed)

(440) 951-8929 (440) 951-8203
Area Code - Phone – Extension Fax #

Sales@traffcon.com
E-Mail Address

The Affidavit in this bid must be completed before your firm can be considered for award of this contract.

AFFIDAVIT

Comes the Affiant, Kevin Durgin, and after being first duly sworn under penalty of perjury as follows:

1. His name is Kevin Durgin and he is the individual submitting the bid or is the authorized representative of Traffic Control Products Inc., the entity submitting the bid (hereinafter referred to as "Bidder").

2. Bidder will pay all taxes and fees, which are owed to the Lexington-Fayette Urban County Government at the time the bid is submitted, prior to award of the contract and will maintain a "current" status in regard to those taxes and fees during the life of the contract.

3. Bidder will obtain a Lexington-Fayette Urban County Government business license, if applicable, prior to award of the contract.

4. Bidder has authorized the Division of Central Purchasing to verify the above-mentioned information with the Division of Revenue and to disclose to the Urban County Council that taxes and/or fees are delinquent or that a business license has not been obtained.

5. Bidder has not knowingly violated any provision of the campaign finance laws of the Commonwealth of Kentucky within the past five (5) years and the award of a contract to the Bidder will not violate any provision of the campaign finance laws of the Commonwealth.

6. Bidder has not knowingly violated any provision of Chapter 25 of the Lexington-Fayette Urban County Government Code of Ordinances, known as "Ethics Act."

7. Bidder acknowledges that "knowingly" for purposes of this Affidavit means, with respect to conduct or to circumstances described by a statute or ordinance defining an offense, that a person is aware or should have been aware that his conduct is of that nature or that the circumstance exists.

Further, Affiant sayeth naught.

[Signature]

STATE OF Ohio

COUNTY OF Lake

The foregoing instrument was subscribed, sworn to and acknowledged before me by Kevin Durgin on this the 16th day of September, 2013.

My Commission expires: **MARY L. OLACK**
Notary Public, State of Ohio
My Commission Expires March 7, 2017

Mary L. Olack
NOTARY PUBLIC, STATE AT LARGE

Please refer to Section II. Bid Conditions, Item "U" prior to completing this form.

I. GREEN PROCUREMENT

A. ENERGY

The Lexington-Fayette Urban County Government is committed to protecting our environment and being fiscally responsible to our citizens.

The Lexington-Fayette Urban County Government mandates the use of Energy Star compliant products if they are available in the marketplace (go to www.Energystar.gov). If these products are available, but not submitted in your pricing, your bid will be rejected as non-compliant.

ENERGY STAR is a government program that offers businesses and consumers energy-efficient solutions, making it easy to save money while protecting the environment for future generations.

Key Benefits

These products use 25 to 50% less energy
Reduced energy costs without compromising quality or performance
Reduced air pollution because fewer fossil fuels are burned
Significant return on investment
Extended product life and decreased maintenance

B. GREEN SEAL CERTIFIED PRODUCTS

The Lexington-Fayette Urban County Government is also committed to using other environmentally friendly products that do not negatively impact our environment. Green Seal is a non-profit organization devoted to environmental standard setting, product certification, and public education.

Go to www.Greenseal.org to find available certified products. These products will have a reduced impact on the environment and on human health. The products to be used must be pre-approved by the LFUCG prior to commencement of any work in any LFUCG facility. If a Green Seal product is not available, the LFUCG must provide a signed waiver to use an alternate product. Please provide information on the Green Seal products being used with your bid response.

C. GREEN COMMUNITY

The Lexington-Fayette Urban County Government (LFUCG) serves as a principal, along with the University of Kentucky and Fayette County Public Schools, in the Bluegrass Partnership for a Green Community. The Purchasing Team component of the Partnership collaborates on economy of scale purchasing that promotes and enhances environmental initiatives. Specifically, when applicable, each principal is interested in obtaining best value products and/or services which promote environment initiatives via solicitations and awards from the other principals.

If your company is the successful bidder on this Invitation For Bid, do you agree to extend the same product/service pricing to the other principals of the Bluegrass Partnership for a Green Community (i.e. University of Kentucky and Fayette County Schools) if requested?

Yes No

II. Bid Conditions

- A. No bid may be withdrawn for a period of sixty (60) days after the date and time set for opening.
- B. No bid may be altered after the date and time set for opening. In the case of obvious errors, the Division of Central Purchasing may permit the withdrawal of a bid. The decision as to whether a bid may be withdrawn shall be that of the Division of Central Purchasing.
- C. Acceptance of this proposal shall be enactment of an Ordinance by the Urban County Council.
- D. The bidder agrees that the Urban County Government reserves the right to reject any and all bids for either fiscal or technical reasons, and to award each part of the bid separately or all parts to one vendor.
- E. Minor exceptions may not eliminate the bidder. The decision as to whether any exception is minor shall be entirely that of the head of the requisitioning Department or Division and the Director of the Division of Central Purchasing. The Urban County Government may waive technicalities and informalities where such waiver would best serve the interests of the Urban County Government.
- F. Manufacturer's catalogue numbers, trade names, etc., where shown herein are for descriptive purposes and are to guide the bidder in interpreting the standard of quality, design, and performance desired, and shall not be construed to exclude proposals based on furnishing other types of materials and/or services. However, any substitution or departure proposed by the bidder must be clearly noted and described; otherwise, it will be assumed that the bidder intends to supply items specifically mentioned in this Invitation for Bids.
- G. The Urban County Government may require demonstrations of the materials proposed herein prior to acceptance of this proposal.
- H. Bids must be submitted on this form and must be signed by the bidder or his authorized representative. Unsigned bids will not be considered.
- I. Bids must be submitted prior to the date and time indicated for opening. Bids submitted after this time will not be considered.
- J. All bids mailed must be marked on the face of the envelope:

“Bid on #111-2013 Traffic Signal and Control Equipment”

and addressed to: Division of Central Purchasing
 200 East Main Street, Room 338
 Lexington, Kentucky 40507

The Lexington-Fayette Urban County Government assumes no responsibility for bids that are not addressed and delivered as indicated above. Bids that are not delivered to the Division of Central Purchasing by the stated time and date will be rejected.

- K. Bidder is requested to show both unit prices and lot prices. In the event of error, the unit price shall prevail.
- L. A Certified / Cashier's Check or Bid Bond in the amount of XX percent of the bid price must be attached hereto. This check must be made payable to the Lexington-Fayette Urban County Government, and will be returned when the material and/or services specified herein have been delivered in accordance with specifications. In the event of failure to perform within the time period set forth in this bid, it is agreed the certified / cashier's check may be cashed and the funds retained by the Lexington-Fayette Urban County Government as liquidated damages. Checks of unsuccessful

bidders will be returned when the bid has been awarded.

- M. The delivery dates specified by bidder may be a factor in the determination of the successful bidder.
- N. Tabulations of bids received may be mailed to bidders. Bidders requesting tabulations must enclose a stamped, self-addressed envelope with the bid.
- O. The Lexington-Fayette Urban County Government is exempt from Kentucky Sales Tax and Federal Excise Tax on materials purchased from this bid invitation. Materials purchased by the bidder for construction projects are not tax exempt and are the sole responsibility of the bidder.
- P. All material furnished hereunder must be in full compliance with OSHA regulations.
- Q. If more than one bid is offered by one party, or by any person or persons representing a party, all such bids shall be rejected.
- R. Signature on the face of this bid by the Bidder or his authorized representative shall be construed as acceptance of and compliance with all terms and conditions contained herein.
- S. The Entity (regardless of whether construction contractor, non-construction contractor or supplier) agrees to provide equal opportunity in employment for all qualified persons, to prohibit discrimination in employment because of race, color, creed, national origin, sex or age, and to promote equal employment through a positive, continuing program from itself and each of its sub-contracting agents. This program of equal employment opportunity shall apply to every aspect of its employment policies and practices.
- T. The Kentucky Equal Employment Opportunity Act of 1978 (KRS 45.560-45.640) requires that any county, city, town, school district, water district, hospital district, or other political subdivision of the state shall include in directly or indirectly publicly funded contracts for supplies, materials, services, or equipment hereinafter entered into the following provisions:

During the performance of this contract, the contractor agrees as follows:

- (1) The contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, age or national origin;*
- (2) The contractor will state in all solicitations or advertisements for employees placed by or on behalf of the contractors that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, age or national origin;*
- (3) The contractor will post notices in conspicuous places, available to employees and applicants for employment, setting forth the provisions of the non-discrimination clauses required by this section; and*
- (4) The contractor will send a notice to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding advising the labor union or workers' representative of the contractor's commitments under the nondiscrimination clauses.*

The Act further provides:

KRS 45.610. Hiring minorities - Information required

- (1) For the length of the contract, each contractor shall hire minorities from other sources within the drawing area, should the union with which he has collective bargaining agreements be unwilling to supply sufficient minorities to satisfy the agreed upon goals and timetable.*

- (2) *Each contractor shall, for the length of the contract, furnish such information as required by KRS 45.560 to KRS 45.640 and by such rules, regulations and orders issued pursuant thereto and will permit access to all books and records pertaining to his employment practices and work sites by the contracting agency and the department for purposes of investigation to ascertain compliance with KRS 45.560 to 45.640 and such rules, regulations and orders issued pursuant thereto.*

KRS 45.620. Action against contractor - Hiring of minority contractor or subcontractor

- (1) *If any contractor is found by the department to have engaged in an unlawful practice under this chapter during the course of performing under a contract or subcontract covered under KRS 45.560 to 45.640, the department shall so certify to the contracting agency and such certification shall be binding upon the contracting agency unless it is reversed in the course of judicial review.*
- (2) *If the contractor is found to have committed an unlawful practice under KRS 45.560 to 45.640, the contracting agency may cancel or terminate the contract, conditioned upon a program for future compliance approved by the contracting agency and the department. The contracting agency may declare such a contractor ineligible to bid on further contracts with that agency until such time as the contractor complies in full with the requirements of KRS 45.560 to 45.640.*
- (3) *The equal employment provisions of KRS 45.560 to 45.640 may be met in part by a contractor by subcontracting to a minority contractor or subcontractor. For the provisions of KRS 45.560 to 45.640, a minority contractor or subcontractor shall mean a business that is owned and controlled by one or more persons disadvantaged by racial or ethnic circumstances.*

KRS 45.630 Termination of existing employee not required, when

Any provision of KRS 45.560 to 45.640 notwithstanding, no contractor shall be required to terminate an existing employee upon proof that that employee was employed prior to the date of the contract.

KRS 45.640 Minimum skills

Nothing in KRS 45.560 to 45.640 shall require a contractor to hire anyone who fails to demonstrate the minimum skills required to perform a particular job.

It is recommended that all of the provisions above quoted to be included as special conditions in each contract. In the case of a contract exceeding \$250,000, the contractor is required to furnish evidence that his work-force in Kentucky is representative of the available work-force in the area from which he draws employees, or to supply an Affirmative Action plan which will achieve such representation during the life of the contract.

- U. Any party, firm or individual submitting a proposal pursuant to this invitation must be in compliance with the requirements of the Lexington-Fayette Urban County Government regarding taxes and fees before they can be considered for award of this invitation and must maintain a "current" status with regard to those taxes and fees throughout the term of the contract. The contractor must be in compliance with Chapter 13 from the Code of Ordinances of the Lexington-Fayette Urban County Government. The contractor must be in compliance with Ordinance 35-2000 pursuant to contractor registration with the Division of Building Inspection. If applicable, said business must have a Fayette County business license.

Pursuant to KRS 45A.343 and KRS 45A.345, the contractor shall

- (1) *Reveal any final determination of a violation by the contractor within the previous five year period pursuant to KRS Chapters 136 (corporation and utility taxes), 139 (sales and use taxes), 141 (income taxes), 337 (wages and hours), 338 (occupational safety and health of employees), 341 (unemployment and compensation) and 342 (labor and human rights) that apply to the contractor; and*
- (2) *Be in continuous compliance with the above-mentioned KRS provisions that apply to the contractor for the duration of the contract.*

A contractor's failure to reveal the above or to comply with such provisions for the duration of the contract shall be grounds for cancellation of the contract and disqualification of the contractor from eligibility for future contracts for a period of two (2) years.

- V. Vendors who respond to this invitation have the right to file a notice of contention associated with the bid process or to file a notice of appeal of the recommendation made by the Director of Central Purchasing resulting from this invitation.

Notice of contention with the bid process must be filed within 3 business days of the bid/proposal opening by (1) sending a written notice, including sufficient documentation to support contention, to the Director of the Division of Central Purchasing or (2) submitting a written request for a meeting with the Director of Central Purchasing to explain his/her contention with the bid process. After consulting with the Commissioner of Finance the Chief Administrative Officer and reviewing the documentation and/or hearing the vendor, the Director of Central Purchasing shall promptly respond in writing findings as to the compliance with bid processes. If, based on this review, a bid process irregularity is deemed to have occurred the Director of Central Purchasing will consult with the Commissioner of Finance, the Chief Administrative Officer and the Department of Law as to the appropriate remedy.

Notice of appeal of a bid recommendation must be filed within 3 business days of the bid recommendation by (1) sending a written notice, including sufficient documentation to support appeal, to the Director, Division of Central Purchasing or (2) submitting a written request for a meeting with the Director of Central Purchasing to explain his appeal. After reviewing the documentation and/or hearing the vendor and consulting with the Commissioner of Finance and the Chief Administrative Officer, the Director of Central Purchasing shall in writing, affirm or withdraw the recommendation.

III. Procurement Contract Bid Conditions

- A. The terms of this agreement shall be for 1 year(s) from the date of acceptance of this contract by the Lexington-Fayette Urban County Government. This agreement may be extended for an additional 1 year renewal upon the written agreement of the bidder and the Lexington-Fayette Urban County Government. Said agreement must be in writing and must be executed prior to the expiration of the current agreement.

- B. Price Changes (Space Checked Applies)
 - (XXX) 1. Prices quoted in response to the Invitation shall be firm prices for the first 90 days of the Procurement Contract. After the first 90 days, prices may be subject to revision and such changes shall be based on general industry changes. Revision may be either increases or decreases and may be requested by either party. There will be no more than one (1) price adjustment per quarter. Requests for price changes shall be received in writing at least twenty (20) days prior to the effective date and are subject to written acceptance before becoming effective. Proof of the validity of a request for revision shall be responsibility of the requesting party. The Lexington-Fayette Urban County Government shall receive the benefit of any decline that the seller shall offer his other accounts.

 - () 2. No provision for price change is made herein. Prices are to be firm for the term of this contract.

 - () 3. Procurement Level Contract

- C. If any contract item is not available from the vendor, the Lexington-Fayette Urban County Government, at its option, may permit the item to be back-ordered or may procure the item on the open market.

- D. All invoices must bear reference to the Lexington-Fayette Urban County Government Purchasing document numbers which are being billed.

- E. This contract may be canceled by either party thirty (30) days after delivery by canceling party of written notice of intent to cancel to the other contracting party.

- F. This contract may be canceled by the Lexington-Fayette Urban County Government if it is determined that the Bidder has failed to perform under the terms of this agreement, such cancellation to be effective upon receipt of written notice of cancellation by the Bidder.

- G. No substitutions for articles specified herein may be made without prior approval of the Division of Central Purchasing.

EQUAL OPPORTUNITY AGREEMENT

The Law

- Title VII of the Civil Rights Act of 1964 (amended 1972) states that it is unlawful for an employer to discriminate in employment because of race, color, religion, sex, age (40-70 years) or national origin.
- Executive Order No. 11246 on Nondiscrimination under Federal contract prohibits employment discrimination by contractor and sub-contractor doing business with the Federal Government or recipients of Federal funds. This order was later amended by Executive Order No. 11375 to prohibit discrimination on the basis of sex.
- Section 503 of the Rehabilitation Act of 1973 states:

The Contractor will not discriminate against any employee or applicant for employment because of physical or mental handicap.

- Section 2012 of the Vietnam Era Veterans Readjustment Act of 1973 requires Affirmative Action on behalf of disabled veterans and veterans of the Vietnam Era by contractors having Federal contracts.
- Section 206(A) of Executive Order 12086, Consolidation of Contract Compliance Functions for Equal Employment Opportunity, states:

The Secretary of Labor may investigate the employment practices of any Government contractor or sub-contractor to determine whether or not the contractual provisions specified in Section 202 of this order have been violated.

The Lexington-Fayette Urban County Government practices Equal Opportunity in recruiting, hiring and promoting. It is the Government's intent to affirmatively provide employment opportunities for those individuals who have previously not been allowed to enter into the mainstream of society. Because of its importance to the local Government, this policy carries the full endorsement of the Mayor, Commissioners, Directors and all supervisory personnel. In following this commitment to Equal Employment Opportunity and because the Government is the benefactor of the Federal funds, it is both against the Urban County Government policy and illegal for the Government to let contracts to companies which knowingly or unknowingly practice discrimination in their employment practices. Violation of the above mentioned ordinances may cause a contract to be canceled and the contractors may be declared ineligible for future consideration.

Please sign this statement in the appropriate space acknowledging that you have read and understand the provisions contained herein. Return this document as part of your application packet.

Bidders

I/We agree to comply with the Civil Rights Laws listed above that govern employment rights of minorities, women, Vietnam veterans, handicapped and aged persons.



Signature

Traffic Control Products, Inc.

Name of Business

GENERAL PROVISIONS OF BID CONTRACT

By signing the below, bidder acknowledges that it understands and agrees with the following provisions related to its bid response and the provision of any goods or services to LFUCG upon selection by LFUCG pursuant to the bid request:

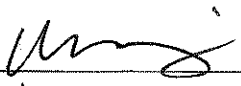
1. Bidder shall comply with all Federal, State & Local regulations concerning this type of service or good.
2. Failure to submit ALL forms and information required by LFUCG may be grounds for disqualification.
3. Addenda: All addenda, if any, must be considered by the bidder in making its response, and such addenda shall be made a part of the requirements of the bid contract. Before submitting a bid response, it is incumbent upon bidder to be informed as to whether any addenda have been issued, and the failure of the bidder to cover any such addenda may result in disqualification of that response.
4. Bid Reservations: LFUCG reserves the right to reject any or all bid responses, to award in whole or part, and to waive minor immaterial defects in proposals. LFUCG may consider any alternative proposal that meets its basic needs.
5. Liability: LFUCG is not responsible for any cost incurred by bidder in the preparation of its response.
6. Changes/Alterations: Bidder may change or withdraw a proposal at any time prior to the opening; however, no oral modifications will be allowed. Only letters, or other formal written requests for modifications or corrections of a previously submitted proposal which is addressed in the same manner as the bid response, and received by LFUCG prior to the scheduled closing time for receipt of bids, will be accepted. The bid response when opened, will then be corrected in accordance with such written request(s), provided that the written request is contained in a sealed envelope which is plainly marked "modifications of bid response".
7. Clarification of Submittal: LFUCG reserves the right to obtain clarification of any point in a bid or to obtain additional information from any bidder.
8. Bribery Clause: By his/her signature on its response, bidder certifies that no employee of his/hers, any affiliate or subcontractor, has bribed or attempted to bribe an officer or employee of the LFUCG.
9. Additional Information: While not necessary, the bidder may include any product brochures, software documentation, sample reports, or other documentation that may assist LFUCG in better understanding and evaluating the bid response. Additional documentation shall not serve as a substitute for other documentation which is required by the LFUCG to be submitted with the bid response.
10. Ambiguity, Conflict or other Errors: If a bidder discovers any ambiguity, conflict, discrepancy, omission or other error in the bid request of LFUCG, it shall immediately notify LFUCG of such error in writing and request modification or clarification of the document if allowable by the LFUCG.
11. Agreement to Bid Terms: In submitting its bid response, the bidder agrees that it has carefully examined the specifications and all provisions relating to LFUCG's bid request, including but not limited to the bid contract. By submission of its bid response, bidder states that it

understands the meaning, intent and requirements of LFUCG's bid request and agrees to the same. The successful bidder shall warrant that it is familiar with and understands all provisions herein and shall warrant that it can comply with them. No additional compensation to bidder shall be authorized for services, expenses, or goods reasonably covered under these provisions that the bidder omits from its bid response.

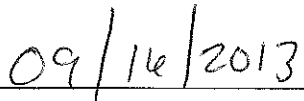
12. Cancellation: LFUCG may unilaterally terminate the bid contract with the selected bidder(s) at any time, with or without cause, by providing at least thirty (30) days advance written notice unless a different advance written notice period is negotiated prior to contract approval. Payment for services or goods received prior to termination shall be made by the LFUCG provided these goods or services were provided in a manner acceptable to the LFUCG. Payment for those goods and services shall not be unreasonably withheld.
13. Assignment of Contract: The selected bidder(s) shall not assign or subcontract any portion of the bid contract with LFUCG without the express written consent of LFUCG. Any purported assignment or subcontract in violation hereof shall be void. It is expressly acknowledged that LFUCG shall never be required or obligated to consent to any request for assignment or subcontract; and further that such refusal to consent can be for any or no reason, fully within the sole discretion of LFUCG.
14. No Waiver: No failure or delay by LFUCG in exercising any right, remedy, power or privilege hereunder, nor any single or partial exercise thereof, nor the exercise of any other right, remedy, power or privilege shall operate as a waiver hereof or thereof. No failure or delay by LFUCG in exercising any right, remedy, power or privilege under or in respect of this bid proposal or bid contract shall affect the rights, remedies, powers or privileges of LFUCG hereunder or shall operate as a waiver thereof.
15. Authority to do Business: Each bidder must be authorized to do business under the laws of the Commonwealth of Kentucky and must be in good standing and have full legal capacity to provide the goods or services specified in the bid proposal. Each bidder must have all necessary right and lawful authority to submit the bid response and enter into the bid contract for the full term hereof including any necessary corporate or other action authorizing the bidder to submit the bid response and enter into this bid contract. If requested, the bidder will provide LFUCG with a copy of a corporate resolution authorizing this action and/or a letter from an attorney confirming that the proposer is authorized to do business in the Commonwealth of Kentucky. All bid responses must be signed by a duly authorized officer, agent or employee of the bidder.
16. Governing Law: This bid request and bid contract shall be governed by and construed in accordance with the laws of the Commonwealth of Kentucky. In the event of any proceedings regarding this matter, the bidder agrees that the venue shall be the Fayette County Circuit Court or the U.S. District Court for the Eastern District of Kentucky, Lexington Division and that the bidder expressly consents to personal jurisdiction and venue in such Court for the limited and sole purpose of proceedings relating to these matters or any rights or obligations arising thereunder.
17. Ability to Meet Obligations: Bidder affirmatively states that there are no actions, suits or proceedings of any kind pending against bidder or, to the knowledge of the bidder, threatened against the bidder before or by any court, governmental body or agency or other tribunal or authority which would, if adversely determined, have a materially adverse effect on the authority or ability of bidder to perform its obligations under this bid response or bid contract, or which question the legality, validity or enforceability hereof or thereof.
18. Bidder understands and agrees that its employees, agents, or subcontractors are not

employees of LFUCG for any purpose whatsoever. Bidder is an independent contractor at all times related to the bid response or bid contract.

19. If any term or provision of this bid contract shall be found to be illegal or unenforceable, the remainder of the contract shall remain in full force and such term or provision shall be deemed stricken.



Signature



Date

TRAFFIC SIGNAL AND CONTROL EQUIPMENT

We propose to deliver to the Lexington-Fayette Urban County Government, Division of Traffic Engineering loading dock at 1515 Old Frankfort Pike, Lexington, Kentucky, 40504, the following traffic signal and control equipment conforming to all specifications used by the Commonwealth of Kentucky, Division of Traffic, for like purpose within 60 days of receipt of purchase authorization:

Pricing for the following shall be good for 365 days from acceptance of bid.

Special Requirements:

- All vehicle signals shall have a 5 position terminal strip mounted in the yellow section for signal and field wire connections.
Note: This means there will be a total of 2 terminal strips in a 5-section signal.
- Each pedestrian signal shall have a terminal strip large enough to accommodate signal and field wire connections.
- All LED's in traffic Signals and Pedestrian Signals outlined in contract shall comply with Kentucky Department of Transportation specifications (attached) and current ITE/MUTCD specifications
- All pedestrian signal housings, pedestal poles, pedestal bases, pedestrian signal upper/lower mounting arm assemblies, pedestrian push buttons, pedestrian push button boxes and signal entrance heads shall be powder coated black, equivalent to Pelco Products Inc. #P33 specifications.

TRAFFIC SIGNAL CONTROLLER EQUIPMENT

1. 2070L Complete with everything - Base Mount Cabinet #332:

Note: 2070L traffic signal controller equipment shall meet specification/requirements outlined by Econolite Control Products Inc. in their user's guide (Oasis Controller user's guide – OASIS 170ATC/2070 – Version 3.00.94, 16 August 2005 – OPEXEC Software Version 3.00.94) The bidder shall further certify that the equipment which he proposes to furnish is not equipment which has been rejected by any other governmental agency.)

2070L controller, completely operational with 1B CPU Module, 2A C1 Field I/O Module, 3B LCD Display Module, 4A Power Supply, 7A Async Serial Communications Module, Econolite Oasis Software.

Must be able to operate with the Lexington, Kentucky communication system.

Traffic control cabinet # 332 or equivalent, natural unpainted aluminum, and 170 terminal facility completely wired and complete with:

- 01) Rack
- 02) Input file
- 03) Output file
- 04) Power supply PDA2 (SHA 1210 to be mounted external to power supply)
- 05) Relay panel
- 06) Relays
- 07) Surge protection
- 08) Main circuit breakers, Auxiliary circuit breakers and Alternate circuit breakers
- 09) Terminal blocks for signal field connections, loops and push buttons.
- 10) Fan
- 11) Light - Mounted in Rear
- 12) Light - Mounted in Front
- 13) GFI outlet
- 14) Programmable flash (red or yellow) for each phase
- 15) Locks and keys Corbin #2
- 16) Lifting eyes shall be removable
- 17) Interchangeability of isolation relay and logic relay shall not be possible.
- 18) Manual pushbutton with 6 foot cord, operated from an auto/manual switch located in the police panel.
- 19) Load switches
- 20) Conflict Monitor, EDI 2018 Kclip
- 21) 2070L controller, completely operational with 1B CPU Module, 2A C1 Field I/O Module, 3B LCD Display Module, 4A Power Supply, 7A Async Serial Communications Module, Econolite Oasis Software.
- 22) *Surge protection for all input/output circuits (See Note 1 or 2)
- 23) *Plug-in surge protection for the phone line (See Note 1 or 2)
- 24) *Surge protection for each loop circuit (See Note 1 or 2)
- 25) Additional ground connection
- 26) 242 DC Isolators for inputs
- 27) (8) 222-C Vehicle Detector Amplifiers
- 28) (1) Ruggedcom switch, Model #RS900G-HI-P-2SC10-XX (No Substitutes)

Note 1 (#332 Traffic Control Cabinet or Equivalent):

Surge Protection Panel for 170 Controller Cabinet, 8-Phase

- Panel shall be predrilled to fit neatly into Cabinet.
- Panel shall be prewired with Male and Female (MS type), Quick Disconnect Connectors with Male connector physically mounted to panel.
- Female connector shall have a 6-foot wire soldered to each pin used in the connector.
- Each wire shall be labeled in respect to the connector.
- Each panel shall come with a schematic showing where each wire is terminated.
- The following surge protection shall be prewired and mounted to panel:
 - (36) Load Switch Outputs
 - (8) Pedestrian Push Buttons
 - (1) Communication Unit (equivalent to EDCO PCB642C-008B with Base and C2 Harness for Comm. Phone Lines (not wired through connectors).
 - (1) Additional Ground
- The following surge protection shall be provided, but not wired to panel:
 - (16) Vehicle Detector Inputs (equivalent to EDCO, SRA-6LCB).
 - (Surge protection panel to be equivalent to Path Master ZPAN-7002)

Note 2 (#332 Traffic Control Cabinet or Equivalent):

Surge Protection Panel for 170 Controller Cabinet, with Lane Use Control

- Panel shall be predrilled to fit neatly into Cabinet.
- Panel shall be prewired with Male and Female (MS type), Quick Disconnect Connectors with Male connector physically mounted to panel.
- Female connector shall have a 6-foot wire soldered to each pin used in the connector.
- Each wire shall be labeled in respect to the connector.
- Each panel shall come with a schematic showing where each wire is terminated.
- The following surge protection shall be prewired and mounted to panel:
 - (48) Load Switch Outputs
 - (8) Pedestrian Push Buttons
 - (4) Lane Use Control Interconnect Lines
 - (1) Communication Unit (equivalent to EDCO PCB642C-008B with Base and C2 Harness for Comm. Phone Lines (not wired through connectors).
 - (1) Additional Ground
- The following surge protection shall be provided, but not wired to panel:
 - (16) Vehicle Detector Inputs (equivalent to EDCO, SRA-6LCB).
 - (Surge protection panel to be equivalent to Path Master ZPAN-7003)

In addition to these specifications, all specifications of the Commonwealth of Kentucky, Department of Highways shall apply.

CABINETS

Note: Cabinet fan unit and vents shall be mounted under rain shield. Cabinets shall be of natural unpainted aluminum with standard Corbin #2 locks on the doors. Cabinets must have channels for mounting terminal facilities on the rear and sides.

Channel mounting

F cabinet: rear, 5" center
K cabinet: rear, 18 3/4" center, sides, 8 1/2" center
M cabinet: rear, 18 3/4" center, sides, 8 1/2" center
P-38 cabinet: rear, 18 3/4" center, sides, 8 1/2" center
R Cabinet: rear, 18 3/4" center, sides, (4 channels) 6 1/2", 3", 8 1/2" center

2. Surge Protection Panel for 170 Controller Cabinet, 8-Phase

- Panel shall be predrilled to fit neatly into Cabinet.
- Panel shall be prewired with Male and Female (MS type), Quick Disconnect Connectors with Male connector physically mounted to panel.
- Female connector shall have a 6-foot wire soldered to each pin used in the connector.
- Each wire shall be labeled in respect to the connector.
- Each panel shall come with a schematic showing where each wire is terminated.
- The following surge protection shall be prewired and mounted to panel:
 - (36) Load Switch Outputs
 - (8) Pedestrian Push Buttons
 - (1) Communication Unit (equivalent to EDCO PCB642C-008B with Base and C2 Harness for Comm. Phone Lines (not wired through connectors).
 - (1) Additional Ground
- The following surge protection shall be provided, but not wired to panel:
 - (16) Vehicle Detector Inputs (equivalent to EDCO, SRA-6LCB).
 - (Surge protection panel to be equivalent to Path Master ZPAN-7002)

3. **Surge Protection Panel for 170 Controller Cabinet, with Lane Use Control**
 - Panel shall be predrilled to fit neatly into Cabinet.
 - Panel shall be prewired with Male and Female (MS type), Quick Disconnect Connectors with Male connector physically mounted to panel.
 - Female connector shall have a 6-foot wire soldered to each pin used in the connector.
 - Each wire shall be labeled in respect to the connector.
 - Each panel shall come with a schematic showing where each wire is terminated.
 - The following surge protection shall be prewired and mounted to panel:
 - (48) Load Switch Outputs
 - (8) Pedestrian Push Buttons
 - (4) Lane Use Control Interconnect Lines
 - (1) Communication Unit (equivalent to EDCO PCB642C-008B with Base and C2 Harness for Comm. Phone Lines (not wired through connectors).
 - (1) Additional Ground
 - The following surge protection shall be provided, but not wired to panel:
 - (16) Vehicle Detector Inputs (equivalent to EDCO, SRA-6LCB).
 - (Surge protection panel to be equivalent to Path Master ZPAN-7003)
4. **2070L w/OASIS Software Complete with everything - Base Mount Cabinet #332 with Lane Use Control:**
2070L with Lane Use Control wiring, software and hardware replacement. This includes all items in #1 above with an additional output file, conflict monitor, etc. for Lane Use Control. (Equivalent to what is being supplied by Traffic Control Products at present).
5. **2070L w/OASIS Software Complete with everything - Pole Mount Cabinet #336S:** This item is equivalent to #1 above except that the traffic control cabinet should be a Pole Mount type #336S.
6. **Traffic Control Cabinet #1:** Same as in #1 above excluding the 2070L Controller
7. **Traffic Control Cabinet #2:** Same as in #1 above excluding the 2070L controller, software, conflict monitor, load switches, and vehicle detectors.
8. **Traffic Control Cabinet #3:** Same as in #4 above excluding the 2070 controller, software, conflict monitor, load switches, and vehicle detectors.
9. **Traffic Control Cabinet - Pole Mount # 336S:** Same as in #1 above with the exceptions that the cabinet is a Pole Mount #336S or equivalent and excluding the 2070 Controller.
10. **170 Base Mount Rack/Terminal Facility:** Completely wired without cabinet
11. **170 Base Mount Rack/Terminal Facility for Lane Use Control:** Completely wired without cabinet
12. **170 Pole Mount (336S) Rack/Terminal Facility:** Completely wired without cabinet
13. **Base mount cabinet #1:** Three (3) shelves, mounting hardware for shelves, police panel, air filter and holes drilled for fan. Minimum inside dimensions:
77" H x 35" W x 25" D, Corbin #2 Lock with (2) Keys
14. **Base mount cabinet #2:** Two (2) shelves, mounting hardware for shelves, police panel, air filter and holes drilled for fan. Minimum inside dimensions:
54" H x 35" W x 25" D, Corbin #2 Lock with (2) Keys

15. **Base mount cabinet #3:** Two (2) shelves, mounting hardware for shelves, police panel, air filter and holes drilled for fan. Minimum inside dimensions: 45" H x 30" W x 16" D, Corbin #2 Lock with (2) Keys
16. **Pole mount cabinet #1:** Two (2) shelves, mounting hardware for shelves, police panel, air filter and holes drilled for fan, pole mount hardware. Minimum inside dimensions: 50" H x 24" W x 16" D, Corbin #2 Lock with (2) Keys
17. **Pole Mount Traffic Cabinet #2:** Natural aluminum, with vent, complete with Corbin #2 lock, 19-inch standard equipment rack system, 15-amp breaker, two (2) duplex receptacles and vent fan with thermostat installed (equivalent to Path Master Model "3B".)
18. **Flasher Cabinet #1:** Pole mount, Dimensions 14" x 10" x 7", back panel, pole mounting hardware, Corbin #2 Lock with (2) Keys.
19. **Flasher cabinet #2:** 14-inch x 11-inch x 11-inch, natural aluminum, complete with two vents, mounting hardware for pole mount application, back panel and police key lock installed (equivalent to Traffic Parts #TP#2703).
20. **Flasher cabinet with NEMA 3 flasher:** 20 amp circuit breaker, terminal strip and Surface mount surge protector, all installed and completely wired. Cabinet shall be an (F) cabinet with same specifications as #16, Corbin #2 Lock with (2) Keys.
21. **Time of Day Controller Cabinet:** Cabinet will include: Nema 3 Flasher, 20 amp circuit breaker, terminal strip, surge protector, Corbin #2 lock with 2 keys, and time clock (Time Clock: Paragon EC72 Equivalent), all installed and completely wired in cabinet. Cabinet shall be 14" x 10" x 12".
22. **Time Clock #1:** 2-Channel, equivalent to Paragon EC72 Series
23. **Time Clock #2:** (for Solar Powered School Flasher) ELTEC #NTC-17E, No Substitutes
24. **Time Clock #3:** (for Solar Powered School Flasher) RTC AP21 (DC input), No Substitutes.
25. **Conflict Monitor:** NEMA 12-channel, ENHANCED
26. **Conflict Monitor:** Model EDI 2010 ECL, ENHANCED
27. **Conflict Monitor, EDI 2018 Kclip**
28. **MonitorKey CMU Data Key Programming Tool:**
For EDI 2018 Kclip Conflict Monitor, no substitutes
29. **Inductive loop vehicle detector:** Model 222-C, two-channel (Maximum of (6) Transistors and (5) IC's on circuit board)
30. **Inductive loop vehicle detector:** Model 222-C, two-channel, Relay Fail Call Output, (Maximum of (6) Transistors and (5) IC's on circuit board)
31. **Inductive loop vehicle detector:** Dual channel programmable LCD with delay and extend, LCD display displays status and function of detector, loop frequency and inductance.
32. **Inductive loop analyzer:** Including a minimum 3-foot probe for locating a loop that has been paved over.

33. **DC isolator:** 242 with fuse (Units using a 5-ohm 10-Watt resistor or equal design will not be accepted).
34. **Switch pack:** Model 200 with indicators
35. **Flasher:** NEMA 3, alternate circuit, model 204
36. **Diagnostic software:** 170 enhanced conflict monitor test, mounted on a system memory module.
37. **Automated Conflict Monitor Tester:** The tester shall be capable of testing NEMA, NEMA +, 170 system 210 type monitors and plus features. The tester shall be capable of testing monitors of all manufacturers. The tester shall be capable of testing 3, 6, 12, 16, or 18 channel monitors and be supplied with all necessary harness and or connectors for such testing. The tester shall perform the following measures:
- -voltage self-test and timing self-test of the tester to ensure the accuracy of the test conditions and response measures.
 - -pre-test the conflict monitor for the presence of incorrect return voltages which could damage the monitor tester.

The tester shall alert the operator and halt the testing process, if these tests are not passed. The test modes shall provide for single and multiple pass testing, and halt for error testing. The available test groups shall include system/timing tests (including front panel indicator tests), conflict/voltage tests, green-green permissive tests, complete permissive tests, and extended tests.

The tester shall record a monitor's response to the following faults:

- Dark Failures
- Switch Failures
- Channel to Channel Failures
- System Faults (CVM, 24-volts, 24-volts l...)
- Thresholds-50/70V Red, 15/25V Green-Yellow-Walk, Pos./Neg. Halfwave 15/25V Gn-Yl-Wk.
- Permissive Card Test
- Power Outages
- Line Voltages (96-105)

The test results shall be generated in ASCII format with means to transfer to IBM-compatible DOS based PC where results can be stored to disk and/or printed. The test report shall include the date, time, operator ID, type of test, monitor serial number, detailed test results, all individual failures (if any) otherwise a statement indicating all tests were passed. When testing a "Plus" type monitor, the test report shall include a list showing which plus features were tested. The package shall include an operating manual describing all steps in the setup and operation of the tester and include details of operation and schematics manual.

PEDESTRIAN SIGNAL EQUIPMENT

Note: All pedestrian signal LED lens shall meet current ITE/MUTCD specifications and design requirements by Lexington-Fayette Urban County Government Division of Traffic Engineering and Kentucky Department of Transportation
All pedestrian signal housings shall be cast aluminum.

38. **Pedestrian Beeper:** Model APS-10 or equivalent Pedestrian Beeper.
39. **LED Countdown Pedestrian Signal w/Housing (ICC):** International legend, one-section, one-way complete w/o clamshell mounting hardware for pole mount, with top and bottom plugs removed, powder coated black.

40. **LED Countdown Pedestrian Signal Module:**
41. **LED Countdown Pedestrian Signal with Mounting Hardware Kit: International Legend** one-section, one-way, without clamshell mounting hardware, top and bottom plugs removed, two (2) 1&1/2 inch x 10 inch Nipples (equivalent to Pelco SE-0436-10), one (1) Tri-Bolt ELL (equivalent to Pelco SE-0514), one Tri-Stud TEE (equivalent to Pelco SE-0513), one (1) Tri-Bolt Hardware Kit with 5/16 inch, 18 gasket (equivalent to Pelco SE-5048), one (1) Tri-Stud Hardware Kit without 5/16 inch, 18 gasket (equivalent to Pelco SE-5035), one (1) Top Pole Plate (equivalent to Pelco SE-0381), one (1) Bottom Pole Plate (equivalent to Pelco SE-0382/SE-0382) has 1&1/2 inch threaded hole for conduit, powder coated black
42. **LED Countdown Pedestrian signal, 1-Way:** International legend, one-section, one-way, pedestal mount, square aluminum ped base with 4 inch threaded opening in top (with (3) 3/8" allen head stainless steel set screws) and access hole with cover on one side, 4 inch x 9 foot spun aluminum pedestal pole, threaded on one end, one-way post top pedestal pole bracket (set screw), (bracket to have tri-bolt studs for mounting signal), powder coated black
43. **LED Countdown Pedestrian signal, 2-way:** International legend, two-way, complete with: two (2) one-section ICC pedestrian signals, one (1) pedestrian signal two-way top bracket (equivalent to Path Master K2WB-6130B 2WPT black), one (1) pedestal pole two-way top bracket (equivalent to Path Master K2WP-6130B 2WPT black), removable plugs for top and bottom ports, one (1) square aluminum ped base with 4 inch threaded opening in top (with (3) 3/8" allen head stainless steel set screws) and access hole with cover on one side, one (1) 4 inch x 9 foot spun aluminum pedestal pole, threaded on one end, powder coated black
44. **Pedestal pole:** Spun aluminum, 4 inch x 9 foot, threaded on one end (equivalent to Path Master VPB-5100-09), powder coated black
45. **Pedestal base:** Square aluminum, 4 inch threaded opening in top (with (3) 3/8" allen head stainless steel set screws), access hole with cover on one side, powder coated black
46. **Pedestal Base w/reinforced collar:** Pedestal base square w/reinforced collar, aluminum, 4-inch threaded opening with (3) SS set screws, (4) 3/4-inch x 18-inch anchor bolts, powder coated black. Pelco #PB5335 with Pelco #P5325 collar, powder coated black
47. **Pedestal Pole, 10-foot, Painted Black:** Spun aluminum, 4 inch x 10 foot, threaded on one end, powder coated black
48. **Pedestal Base anchor bolts, 3/4-inch x 18-inch, set of four:**
49. **Pedestal Base anchor bolts, 3/4-inch x 26-inch, set of four:**
50. **Pedestrian signal top bracket:** Two-way (equivalent to Path Master K2WB-6130B 2WPT black)
51. **Pedestal pole (2-way) mounting brackets:** one (1) Two-way (equivalent to Path Master 2WP-6130B 2WPT black) and one (1) pedestrian signal two-way top bracket (equivalent to Path Master K2WB-6130B 2WPT black),
52. **Pedestal pole top bracket:** One-way (equivalent to Path Master PET-1201), black
53. **Pedestrian Push Button Box:** Black cast iron enclosure for pedestrian pushbutton, enclosure shall have 3/4-inch threaded opening for conduit attachment, black, no substitute.

54. **Pedestrian Push Button, Rees:** Rees 01371-912 Recessed Chrome Button, no substitute.
55. **Pedestrian Push Button, Bulldog:** Bulldog momentary, rectangular, black, must fit standard rectangular pedestrian push button box, Baldwin & Sours Part #RBDLMB, No Substitutes.
56. **Pedestrian Push Button with Box:** Bulldog Button (Baldwin & Sours #RBDLMB), no substitutes) with black rectangular cast iron enclosure for button, enclosure shall have 3/4-inch threaded opening for conduit attachment, no substitute.
57. **Pedestrian Push Button Assembly, 1-direction:** For (1) direction, to include: (1) Pedestrian signal base (Square aluminum, 4 inch threaded opening in top (with (3) 3/8" allen head stainless steel set screws), access hole with cover on one side, Path Master VPB-5300) (1) Pedestal Pole Cap, equivalent to Path Master VPB5401, Acorn Cap (2) Push Button for Walk Signal Signs (9"x 12") #R10-4B (Right Arrow and Left Arrow, (1) Pedestal Pole: Spun aluminum, 4"x 42", threaded on one end (1) Pedestrian Push button w/box: Baldwin & Sours #RBDLMB Button, black cast iron enclosure for button, powder coated black, no substitute
58. **Pedestrian Push Button Assembly, 2-direction:** For (2) directions, to include the same as number 53 with the following exceptions: (2) Push Button for Walk Signal Signs (9"x 12") R10-4B (Right arrow and Left Arrow), (2) Pedestrian Push buttons w/box: Baldwin & Sours #RBDLMB Button, black cast iron enclosure for button, powder coated black, no substitute.
59. **Pedestrian Push Button Sign with a Left Arrow:** R10-3B, (9" X 12"), engineer grade sheeting, complete on .080 aluminum blank and pre-drilled for installation.
60. **Pedestrian Push Button Sign with a Right Arrow:** R10-3B, (9" X 12"), engineer grade sheeting, complete on .080 aluminum blank and pre-drilled for installation.
61. **Pedestrian Push Button Sign with a Left Arrow:** R10-3e, (9" X 15"), engineer grade sheeting, complete on .080 aluminum blank and pre-drilled for installation.
62. **Pedestrian Push Button Sign with a Right Arrow:** R10-3e, (9" X 15"), engineer grade sheeting, complete on .080 aluminum blank and pre-drilled for installation.
63. **Pedestal Pole Cap:** Equivalent to Path Master VPB5401 (Acorn Cap), powder coated black
64. **Pedestrian Signal (Single) Mounting Hardware Kit:** To include: two (2) 1&1/2 inch x 10 inch Nipples (equivalent to Pelco SE-0436-10), one (1) Tri-Bolt ELL (equivalent to Pelco SE-0514), one (1) Tri-Stud TEE (equivalent to Pelco SE-0513), one (1) Tri-Bolt Hardware Kit with 5/16 inch, 18 gasket (equivalent to Pelco SE-5048), one (1) Tri-Stud Hardware Kit without 5/16 inch, 18 gasket (equivalent to Pelco SE-5035), one (1) Top Pole Plate (equivalent to Pelco SE-0381), one (1) Bottom Pole Plate (equivalent to Pelco SE-0382/SE-0382) has 1&1/2 inch threaded hole for conduit, powder coated black

VEHICLE SIGNAL EQUIPMENT

Note: All Vehicle signal LED lens shall meet current ITE/MUTCD specifications and design requirements by Lexington-Fayette Urban County Government, Division of Traffic Engineering and Kentucky Department on Transportation

65. **LED Vehicle signal, 12-12-12:** 12 inch, black, polycarbonate, three-section, red/yellow/green, two cutaway hoods, one tunnel hood, complete with hardware for span attachment: span clamp, balance adjuster, black tri-bolt entrance head, bottom plug. (Balance Adjuster shall be equivalent to Path Master VSE-3219)
66. **LED Vehicle signal with Back-plate, 12-12-12:** 12 inch, black, polycarbonate, three-section, red/yellow/green, two cutaway hoods, one tunnel hood, complete with hardware for span attachment: span clamp, balance adjuster, black tri-bolt entrance head, bottom plug. (Balance Adjuster shall be equivalent to Path Master VSE-3219), see attached back-plate specifications
67. **LED Left Turn Vehicle signal, 12-12-12:** 12 inch, black, polycarbonate, three-section, red/left turn yellow arrow/left turn green arrow, two cutaway hoods, one tunnel hood, complete with hardware for span attachment: span clamp, balance adjuster, black tri-bolt entrance head, bottom plug. (Balance Adjuster shall be equivalent to Path Master VSE-3219).
68. **LED Left Turn Vehicle signal, 12-12-12 with Back-plate:** 12 inch, black, polycarbonate, three-section, red/left turn yellow arrow/left turn green arrow, two cutaway hoods, one tunnel hood, complete with hardware for span attachment: span clamp, balance adjuster, black tri-bolt entrance head, bottom plug. (Balance Adjuster shall be equivalent to Path Master VSE-3219), see attached back-plate specifications
69. **LED 5-Section Vehicle signal:** 12 inch, black, polycarbonate, five section, cluster configuration, red/yellow/green, left turn yellow arrow/left turn green arrow, three cutaway hoods, two tunnel hoods, complete with hardware for span attachment: span clamp, balance adjuster, tri-bolt entrance head, tri-bolt two-face lower flat arm assembly, tri-bolt four-face upper bracket arm assembly with screw-in plugs, six position terminal strip with #8 screws mounted each yellow section. (Balance Adjuster shall be equivalent to Path Master VSE-3219)
70. **LED 5-Section Vehicle signal with Back-plate:** 12 inch, black, polycarbonate, five section, cluster configuration, red/yellow/green, left turn yellow arrow/left turn green arrow, three cutaway hoods, two tunnel hoods, complete with hardware for span attachment: span clamp, balance adjuster, tri-bolt entrance head, tri-bolt two-face lower flat arm assembly, tri-bolt four-face upper bracket arm assembly with screw-in plugs, six position terminal strip with #8 screws mounted each yellow section. (Balance Adjuster shall be equivalent to Path Master VSE-3219), see attached back-plate specifications
71. **LED 4-Section Vehicle signal:** 12 inch, black, polycarbonate, four-section, red/yellow/ green/left turn green arrow, three cutaway hoods, one tunnel hood, complete with hardware for span attachment: span clamp, balance adjuster, tri-bolt entrance head, bottom plug. (Balance Adjuster shall be equivalent to Path Master VSE-3219).
72. **LED 4-Section Vehicle signal with Back-plate:** 12 inch, black, polycarbonate, four-section, red/yellow/ green/left turn green arrow, three cutaway hoods, one tunnel hood, complete with hardware for span attachment: span clamp, balance adjuster, tri-bolt entrance head, bottom plug. (Balance Adjuster shall be equivalent to Path Master VSE-3219), see attached back-plate specifications
73. **LED 4-Section FYA Vehicle signal:** 12 inch, black, polycarbonate, four-section, Left Turn Red, Two (2) Left Turn Yellow, Left Turn Green two cutaway hoods, two tunnel hoods, complete with hardware for span attachment: span clamp, balance adjuster, tri-bolt entrance head, bottom plug. (Balance Adjuster shall be equivalent to Path Master VSE-3219).

74. **LED 4-Section FYA Vehicle signal with Back-plate:** 12 inch, black, polycarbonate, four-section, Left Turn Red, Two (2) Left Turn Yellow, Left Turn Green two cutaway hoods, two tunnel hoods, complete with hardware for span attachment: span clamp, balance adjuster, tri-bolt entrance head, bottom plug. (Balance Adjuster shall be equivalent to Path Master VSE-3219), see attached back-plate specifications
75. **Vehicle Signal Lens, LED Retrofit:** 12-inch, Green
76. **Vehicle Signal Lens, LED Retrofit:** 12-inch, Yellow
77. **Vehicle Signal Lens, LED Retrofit:** 12-inch, Red
78. **Vehicle Signal Lens, LED Retrofit:** 12-inch, Left Turn Green
79. **Vehicle Signal Lens, LED Retrofit:** 12-inch, Left Turn Yellow
80. **Vehicle Signal Lens, LED Retrofit:** 12-inch, Left Turn Red
81. **LED Signal section (Red):** 12 inch to include tunnel hood, red lens, black polycarbonate, complete with hardware for span attachment: span clamp, balance adjuster, black tri-bolt entrance head, bottom plug. (Balance Adjuster shall be equivalent to Path Master VSE-3219).
82. **LED Signal Section (Yellow):** 12 inch to include: tunnel hood, yellow lens, black polycarbonate, complete with hardware for span attachment: span clamp, balance adjuster, black tri-bolt entrance head, bottom plug. (Balance Adjuster shall be equivalent to Path Master VSE-3219).
83. **LED Signal Section (Green):** 12 inch to include: cutaway hood, green lens, black polycarbonate, complete with hardware for span attachment: span clamp, balance adjuster, black tri-bolt entrance head, bottom plug. (Balance Adjuster shall be equivalent to Path Master VSE-3219).
84. **Signal Back-plate #1:** (Louvered w/retro-reflective tape) for 12-12-12 inch traffic signal: See enclosed specifications.
85. **Signal Back-plate #2:** (Louvered w/retro-reflective tape) for 12-12-12-12 inch traffic signal: See enclosed specifications.
86. **Signal Back-plate #3:** (Louvered w/retro-reflective tape) for 12 inch 5-section traffic signal: See enclosed specifications.
87. **Dual Red Mounting Hardware, Span Wire Mount:**
Kit shall include two (2) Tri-Stud upper arm assemblies, 17-inch CTC, Black (Pelco #SE-5059), Two (2) Signal to signal mounting kits (Pelco #SE-3117-SS), One (1) Tri-Bolt Span Wire Assembly: (Path Master VSP-5035)
88. **Dual Red Mounting Hardware, Mast Arm Mount, Vertical:**
Kit shall include One (1) ASTRO-BRAC Assembly: #AB-0168-4-120-SS, Two (2) Signal to signal mounting kits (Pelco #SE-3117-SS)
89. **LED Dual Red Vehicle signal with Mtg. Hardware., Span Wire Mount:** 12 inch, black, polycarbonate, four-sections: red/red/yellow/green, three cutaway hoods, one tunnel hood, complete with two (2) Tri-Stud upper arm assemblies, 17-inch CTC, Black (Pelco #SE-5059), Two (2) Signal to signal mounting kits (Pelco #SE-3117-SS), One (1) Tri-Bolt Span Wire Assembly: (Path Master VSP-5035)

90. **LED Dual Red Vehicle signal with Mtg. Hardware., Span Wire Mount, with Back-plate:**
12 inch, black, polycarbonate, four-sections: red/red/yellow/green, three cutaway hoods, one tunnel hood, complete with two (2) Tri-Stud upper arm assemblies, 17-inch CTC, Black (Pelco #SE-5059), Two (2) Signal to signal mounting kits (Pelco #SE-3117-SS), One (1) Tri-Bolt Span Wire Assembly: (Path Master VSP-5035), see attached back-plate specifications
91. **LED Dual Red Vehicle signal with Mtg. Hardware., Mast Arm Mount:** 12 inch, black, polycarbonate, four-sections: red/red/yellow/green, three cutaway hoods, one tunnel hood, complete with One (1) ASTRO-BRAC Assembly: #AB-0168-4-120-SS, Two (2) Signal to signal mounting kits (Pelco #SE-3117-SS)
92. **LED Dual Red Vehicle signal with Mtg. Hardware., Mast Arm Mount, with Back-plate:**
12 inch, black, polycarbonate, four-sections: red/red/yellow/green, three cutaway hoods, one tunnel hood, complete with One (1) ASTRO-BRAC Assembly: #AB-0168-4-120-SS, Two (2) Signal to signal mounting kits (Pelco #SE-3117-SS), see attached back-plate specifications
93. **Tri-Stud slip fitter assembly, for 2-way signal:**
Pelco #SE-5008, No Substitutes (Pedestal Pole Mount)

LED LANE USE CONTROL EQUIPMENT

Note 1: All LED Lane Control Signals and LED Message Signs shall meet specification requirements by National Sign and Signal Company and MUTCD.

94. **LED Lane Use Control Signal, 18inch x 18-inch:**
18" x 18", 2-Way Lane Control Signal, complete with entrance head, mounting hardware and span wire attachments, complete unit painted black and ready to install.
Message 1: Red X
Message 2: Green Arrow
95. **LED Lane use control signal, 24-inch x 30-inch:**
24" x 30", 2-Way Lane Control Signal/Sign, complete with entrance head, mounting hardware and span wire attachments, complete unit painted black and ready to install.
Message 1: Red X
Message 2: Green Arrow
Message 3: White R3 Sign (w/o Only beneath Arrows)
96. **LED Lane use control signal, 30-inch x 36-inch, #1:**
(30" x 36" Display), 1-Way Lane Control, complete with entrance head, mounting hardware and span wire attachments, complete unit painted black and ready to install.
Message 1: R3-5A (Thru Arrow w/Only below Arrow)
Message 2: R3-6 (Thru and Left Turn Arrow Combination)
97. **LED Lane use control Message Sign, 33-inch x 39-inch:**
33" Wide x 39" Tall, 1-way (Outside Dimensions), complete with entrance head, mounting hardware and span wire attachments, complete unit painted black and ready to install.
Message: LANE ENDS MERGE RIGHT
98. **LED Lane use control Message Sign, 33-inch Wide x 33-inch:**
33" x 33" Tall (Outside Dimensions), complete with entrance head, mounting hardware and span wire attachments, complete unit painted black and ready to install.
Message: RIGHT LANE MUST TURN RIGHT

99. **LED Lane use control signal, 30-inch x 36-inch, #2:** (30" x 36" Display) 1-Way Lane Control, complete with entrance head, mounting hardware and span wire attachments, complete unit painted black and ready to install.
 Message 1: Left Turn Arrow/Thru Arrow/Right Turn Arrow Combination, w/Right Lane (legend) above display, see photograph).
 Message 2: R3-6 (Thru and Right Turn Arrow Combination, w/Right Lane (legend) above display, see photograph)
100. **LED Lane use control signal, 30-inch x 36-inch, #3** :
 (30" x 36" Display) 2-Way Lane Control, complete with entrance head, mounting hardware and span wire attachments, complete unit painted black and ready to install.
 Message 1: R3-5 (Side 1).
 Message 2: Red X (Side 2).
101. **LED Lane Use Control Signal/Sign (Nicholasville/Waller):**
 (30" x 30" Display) 2-message, 1-Way Lane Control, complete with entrance head, mounting hardware and span wire attachments, complete unit painted black and ready to install.
 Messages: See attached Photographs
102. **LED Lane Use Control Signal/Sign (Nicholasville/Rosemont):**
 (30" x 30" Display) 2-message, 1-Way Lane Control, complete with entrance head, mounting hardware and span wire attachments, complete unit painted black and ready to install.
 Messages: See attached Photographs

SIGNAL CABLE

103. **Loop Lead-In:** IMSA 20-2 with copper shield, 14 gauge, 19 strand, 2-pair (priced in lengths of 1000 feet), Delivered on a Wooden Reel.
104. **Loop Lead-In:** IMSA 20-2 with copper shield, 14 gauge, 19 strand, 4-pair (priced in lengths of 5,000 feet), Delivered on five (5) 1,000-foot Wooden Reels.
105. **Coaxial Cable (Spread Spectrum Radio):** Beldon #8267, 1,000-ft, on wooden reel.
106. **Signal Cable:** IMSA 20-1, 7 conductor, 14 gauge, 7 strand (500 ft. Wooden Reel)
107. **Signal Cable:** IMSA 20-1, 7 conductor, 14 gauge, 7 strand (1000 ft. Wooden Reel)
108. **Signal Cable:** IMSA 20-1, 16 conductor, 14 gauge, 7 strand (500 ft. Wooden Reel)
109. **Signal Cable:** IMSA 20-1, 16 conductor, 14 gauge, 7 strand (1000 ft. Wooden Reel)
110. **Messenger Cable:** 8M High Strength, 5/16" Galvanized, Class A, (500 ft. Wooden Reel) Coils will not be accepted.
111. **Messenger Cable:** 8M High Strength, 5/16" Galvanized, Class A, (1000 ft. Wooden Reel) coils will not be accepted.
112. **Messenger Cable:** 10M High Strength, 3/8" Galvanized, Class A, (500 ft. Wooden Reel) Coils will not be accepted.

- 113. **Messenger Cable:** 10M High Strength, 3/8" Galvanized, Class A, (1000 ft. Wooden Reel) Coils will not be accepted.
- 114. **#8 THHN Service Wire:**
- 115. **#6 Bare Ground**

MISCELLANEOUS EQUIPMENT

- 116. **Junction box:** Round, in-ground type (equivalent to Path Master PE-10)
- 117. **Traffic Bearing Junction Box w/Lid:**
Box: Quazite #PG1730BA12 (No Substitutes)
Lid: Quazite #PG1730HH0044 (No Substitutes)
- 118. **Signal Tether Clamp:** Tri-Stud, breakaway, 2-parts,
(equivalent to PELCO SE-5037 and SE-5038)
- 119. **Sign Tether Bracket:** Equivalent to PELCO SE-5046-19
- 120. **Sign Tether Bracket:** Equivalent to PELCO SE-5046-24
- 121. **Strand Vise:** 3/8 inch (Reliable 5152), no substitute.
- 122. **Strand Vise:** 5/16 inch (Reliable 5151), no substitute.
- 123. **Strand Vise:** 1/4 inch (Reliable 5150), no substitute.
- 124. **Strand Link:** 3/8 inch (Reliable 5002), no substitute.
- 125. **Strand Link:** 5/16 inch (Reliable 5001), no substitute.
- 126. **Strand Link:** 1/4 inch (Reliable 5000), no substitute.
- 127. **Reducing Strand Link:** 3/8 inch to 5/16 inch (Reliable #5022), no substitutes
- 128. **Construction and mounting hardware for four-way adjustable signal:**
Four-way top and bottom brackets, span wire hanger and balance adjuster, entrance head, Tri-Bolt Assembly, black, equivalent to Path Master KSIG-6354 CA
- 129. **Construction and mounting hardware for three-way adjustable signal:** Three-way top and bottom brackets, span wire hanger and balance adjuster, entrance head, Tri-Bolt Assembly, black
- 130. **Construction and mounting hardware for two-way adjustable signal:** Two-way top and bottom brackets, span wire hanger and balance adjuster, entrance head, Tri-Bolt Assembly, black, equivalent to Path Master KSIG-6352 CA
- 131. **Tri-Bolt Span Wire Assembly:** Signal entrance head, span wire clamp, balance adjuster, bottom plug, black, equivalent to Path Master VSP-5035

132. **School Sign Assembly:**
Hardware and signals gloss black, signal sections polycarbonate, to include:
- one (1) S5-1 24" x 48" standard highway sign, 3M Hi-Intensity sheeting (Speed Limit to be specified upon order)
 - two (2) 1.5 inch x 10 inch nipple (Pelco SE-0436-10 equivalent)
 - two (2) Tri-Stud Tee's (Pelco SE-0513 equivalent)
 - two (2) Pole Plates (Pelco SE-0382 equivalent)
 - two (2) 12 inch LED signal sections, cutaway hoods (as per signal specifications)
 - one (1) 1.5 inch x 42.5 inch nipple (Pelco SE-0436-42.5 equivalent)
 - two (2) signal closure kit (Pelco SE-3054 equivalent)
 - three (3) 1 7/8 inch nipple clamp (Path Master GRCLAMP equivalent)
133. **School Sign Assembly with Time of Day Controller/Cabinet:** Cabinet will include: Nema 3 Flasher, 20 amp circuit breaker, terminal strip, surge protector, Corbin #2 lock with 2 keys, and time clock (time clock will be Paragon EC72 equivalent), all installed and completely wired. Cabinet shall be 14" x 10" x 12". School sign assembly will include: one (1) S5-1 24" x 48" standard highway sign with 3M Hi-Intensity sheeting (Speed Limit to be specified upon order), two (2) 1.5 inch x 10 inch nipple (Pelco SE-0436-10 equivalent), two (2) Tri-Bolt Tee's (Pelco SE-0513 equivalent), two (2) Pole Plates (Pelco SE-0382 equivalent), two (2) 12-inch polycarbonate, black, signal sections with yellow LED lens and cutaway hoods, one (1) 1.5 inch x 42.5 inch nipple (Pelco SE-0436-42.5 equivalent), two (2) signal closure kit (Pelco SE-3054 equivalent), three (3) 1 7/8 inch nipple clamp (Path Master GRCLAMP equivalent). All hardware to be powder coated black.
134. **Aerial Cable Ties:** Panduit PLT 3H TL100 (No Substitute), per 1000.
135. **Cable Ring, 2-inch:** Std. Length, Copperweld, must fit 5/16-inch diameter messenger cable min. order = 500).
136. **Cable Ring, 3.5-inch:** Std. Length, Copperweld, must fit 5/16-inch diameter messenger cable.
137. **Signal Bracket, Mast Arm, Vertical Mount:** Astro-Brac #AS-0138-2-120, 37-inch Tube, 120-inch cable, Cluster Design
138. **Signal Bracket, Mast Arm, Vertical Mount:** Astro-Brac #AS-0125-3-120, 120-inch cable, for 12-12-12 Standard Signal.
139. **Sign Bracket, Mast Arm, Vertical Mount, 24:** Astro-Brac #AS-0142-24-120 cable
140. **Sign Bracket, Mast Arm, Vertical Mount, 30:** Astro-Brac #AS-0142-30-120 cable
141. **Signal Bkt., Mast Arm, Horizontal Mount:** Astro-Brac #AS-0125-3-120, for 12-12-12 Std. Signal.
142. **Signal Bracket, Mast Arm, Free Swinging Mount:** Astro-Brac #AB-3014-L, 120-inch Cable, Clevis Hanger opening must be 3/4-inch (no substitute)
143. **Power Supply, Solar Power:** 200-watt, 12-VDC
144. **Iteris Vantage Universal Camera Mounting Bracket**
for video detection cameras (no substitutes)
145. **Mast Arm Mounting Assembly for Video Detection Cameras:**
Assembly shall include One (1) PELCO #AB0175 (74-inch Tube) and One (1) complete PELCO #AS3009, Stellar Series Clamp Kit w/120-inch SS cable (No Substitute)

VIDEO DETECTION EQUIPMENT, Iteris (No Substitutes)

Successful Bidder shall:

- provide repair support for electronic repairs made by the L.F.U.C.G. after warranty period
- provide a two year repair warranty for equipment with no exceptions for lightning damage
- provide any/all short hook-up cables completely assembled with necessary connectors
- give L.F.U.C.G. the option of pole or span wire mounting hardware at same cost.

146. Video Detection System (8-Phase):

- System shall consist of all necessary equipment and components to fully detect an 8-phase intersection. Including 4 processor Modules, 4 extension modules, Four color cameras with strain pole mounting brackets, Four DEUTSCH Connectors made up with 6-ft. tail to connect to power, and PolyPhaser #IS-75BB+/-1.5 U/M surge suppression.
- This unit shall be capable of 100% operation, in all weather conditions, 24-hrs. per day
- All equipment shall be enclosed in a weatherproof housing.
- Unit shall not drift and only need to be set up once, unless a camera is relocated.
- Unit shall be designed so that all set up operations can be done from a Laptop computer.
- The Detection Device Processor input to the controller shall be designed to use the existing input file in the 170E (332 cabinet) and plug into a detection slot.
- Cameras shall have motorized Focus and Zoom control.

147. Video Detection System (4-Phase):

- System shall consist of all necessary equipment and components to fully detect a 4-phase intersection. Including 2 processor modules, 2 extension modules, 2-color cameras with strain pole mounting brackets, Two DEUTSCH Connectors made up with 6-ft. tail to connect to power and PolyPhaser #IS-75BB+/-1.5 U/M surge suppression.
- This unit shall be capable of 100% operation, in all weather conditions, 24-hrs. per day.
- All equipment shall be enclosed in a weatherproof housing.
- Unit shall not drift and only need to be set up once, unless a camera is relocated.
- Unit shall be designed so that all set up operations can be done from a Laptop computer.
- The Detection Device Processor input to the controller shall be designed to use the existing input file in the 170E (332 cabinet) and plug into a detection slot.
- Cameras shall have motorized Focus and Zoom control.

148. Video Detection System (2-Phase):

- System shall consist of all necessary equip. and components to fully detect 2-Phase's, including one 4 channel processor module and one extension module, one color Camera a with strain pole mounting bracket, One DEUTSCH Connector made up with 6-ft. tail to connect to power and PolyPhaser #IS-75BB+/-1.5 U/M surge suppression.
- This unit shall be capable of 100% operation, in all weather conditions, 24-hours per day.
- All equipment shall be enclosed in a weatherproof housing.
- Unit shall not drift and only need to be set up once, unless a camera is relocated.
- Unit shall be designed so that all set up operations can be done from a Laptop Computer.
- The Detection Device Processor input to the controller shall be designed to use the existing input file in the 170E (332 cabinet) and plug into a detection slot.
- Cameras shall have motorized Focus and Zoom control.

149. **Video Detection System (3-Phase):**
- System shall consist of all necessary equip. and components to fully detect 3-Phase's, including one 4 channel processor module, two extension modules, One color Camera a with strain pole mounting bracket, One DEUTSCH Connector made up with 6-ft. tail to connect to power and PolyPhaser #IS-75BB+/-1.5 U/M surge suppression.
 - This unit shall be capable of 100% operation, in all weather conditions, 24-hours per day.
 - All equipment shall be enclosed in a weatherproof housing.
 - Unit shall not drift and only need to be set up once, unless a camera is relocated.
 - Unit shall be designed so that all set up operations can be done from a Laptop Computer.
 - The Detection Device Processor input to the controller shall be designed to use the existing input file in the 170E (332 cabinet) and plug into a detection slot.
 - Cameras shall have motorized Focus and Zoom control.
150. **Video Detection Processor:** Equivalent to Iteris #493065001
151. **Iteris Vantage EdgeConnect Communications Module w/software:**
See specifications, "No substitutes will be accepted"
152. **Video Detection Extension Module:** Equivalent to Iteris #493065301, each extension module shall come with one 24-inch extension module cable completely assembled w/necessary connectors.
153. **Iteris LAM (Lens Adjustment Module):**
Includes: One (1) ADV-LAMVIEW vantage camera lens adjustment module w/display in case advanced LamModule & One (1) TLM-0841C Video security LCD color monitor (No Substitutes)
154. **Iteris Versa Cam Package, Complete (No Substitutes)**
155. **PolyPhaser Surge Suppression Unit:** Equivalent to PolyPhaser Part #IS-75BB+/-1.5 U/M
156. **Iteris Video Detection Color Camera.**
157. **Video Detection/Power Composite Cable, #1:**
Cable shall be 500-ft on a wooden reel, Equivalent to Baldwin & Sours #9-1545, no substitute
158. **Video Detection/Power Composite Cable, #2:**
Cable shall be 1,000-ft on a wooden reel, Equivalent to Baldwin & Sours #9-1545, no substitute
159. **Solar Powered School Speed Limit When Flashing Signal:**
Unit shall be a fully self contained system and come complete with:
- Two (2) 12-inch LED Yellow signals (Black polycarbonate housing) with mounting hardware.
 - School Speed Limit When Flashing Sign (Speed determined when order is placed), with mounting hardware.
 - One (1) Cabinet (Prewired) with surge protection, #2 Corbin lock and mounting hardware (cabinet shall be large enough to accommodate all necessary batteries and equipment).
 - One (1) Solid state clock, fully programmable for 7-day, 24-hours per day, with automatic daylight savings time built in.
 - One (1) 4-inch Spun aluminum pedestal pole (15-FOOT).
 - One (1) Aluminum pedestal Base (Equivalent to Path Master VPB-5300).
 - One (1) Solar Panel: Unbreakable triple junction technology, Shadow guard protection, vandal resistant, Hail Proof, Heat Tolerant and 10-year limited warranty.
 - Batteries: Batteries shall be spill proof, Maintenance Free, Long life deep-cycle, field proven (SVR) technology, capable of 8-hours of continuous operation on a single charge.

CONTROLS: Solid State, Meet MUTCD/ITE Specifications, Low Voltage Disconnect, Temperature Compensation, External Input Capability, Programmable Time Switch Capability, Communications Interface, Pager Activation Option.

- IS-12VDC 50A-NG Polyphaser, DC Battery Power Protector.

160. Solar Powered School Speed Limit When Flashing Signal (pole mount components and span wire mounted) signals and sign:

Unit shall be a fully self contained system and come complete with:

- Two (2) 12-inch LED Yellow signals (Black polycarbonate housing) with mounting hardware.
 - One (1) School Speed Limit When Flashing Sign (Speed limit shall be 25 mph),with mounting hardware.
 - One (1) Cabinet (Prewired) with surge protection, #2 Corbin lock and mounting hardware (cabinet shall be large enough to accommodate all necessary batteries and equipment).
 - One (1) Solid state clock, fully programmable for 7-day, 24-hours per day, with automatic daylight savings time built in.
 - All necessary materials to mount components to a wood pole.
 - All necessary materials to mount signals and sign to overhead span.
 - One (1) Solar Panel: Unbreakable triple junction technology, Shadow guard protection, vandal resistant, Hail Proof, Heat Tolerant and 10-year limited warranty.
 - Batteries: Batteries shall be spill proof, Maintenance Free, Long life deep-cycle, field proven (SVR) technology, capable of 8-hours of continuous operation on a single charge.
- CONTROLS:** Solid State, Meet MUTCD/ITE Specifications, Low Voltage Disconnect, Temperature Compensation, External Input Capability, Programmable Time Switch Capability, Communications Interface, Pager Activation Option.
- Capable of operating properly in a highly shaded area.
 - IS-12VDC 50A NG Polyphaser, DC Battery Power Protector

161. Solar Powered School Speed Limit When Flashing Signal (pole mount components and Mast Arm mounted) signals and sign:

Unit shall be a fully self contained system and come complete with:

- Two (2) 12-inch LED Yellow signals (Black polycarbonate housing) with mounting hardware.
 - One (1) School Speed Limit When Flashing Sign (Speed limit shall be 25 mph),with mounting hardware.
 - One (1) Cabinet (Prewired) with surge protection, #2 Corbin lock and mounting hardware (cabinet shall be large enough to accommodate all necessary batteries and equipment).
 - One (1) Solid state clock, fully programmable for 7-day, 24-hours per day, with automatic daylight savings time built in.
 - All necessary materials to mount components to a strain pole.
 - All necessary materials to mount signals and sign to overhead mast arm.
 - One (1) Solar Panel: Unbreakable triple junction technology, Shadow guard protection, vandal resistant, Hail Proof, Heat Tolerant and 10-year limited warranty.
 - Batteries: Batteries shall be spill proof, Maintenance Free, Long life deep-cycle, field proven (SVR) technology, capable of 8-hours of continuous operation on a single charge.
- CONTROLS:** Solid State, Meet MUTCD/ITE Specifications, Low Voltage Disconnect, Temperature Compensation, External Input Capability, Programmable Time Switch Capability, Communications Interface, Pager Activation Option.
- Capable of operating properly in a highly shaded area.
 - IS-12VDC 50A NG Polyphaser, DC Battery Power Protector

SPREAD SPECTRUM RADIO AND EQUIPMENT

162. Spread Spectrum Radio (Receiver/Transmitter): See specifications
163. YAGI Antenna w/mounting hardware: See specifications
164. OMNI Antenna w/mounting hardware: See specifications
165. Surge Arrestor: See specifications
166. Coaxial Cable (Spread Spectrum Radio): LMR-400 or equal, 500-ft on a wooden reel (no substitute)
167. Accessible Pedestrian Detection System (8-Directions):
See enclosed specifications. Each system shall be provided with any needed programming equipment, and all necessary components to be fully operational upon installation in the field. No special tools shall be required to perform installation. Each system shall be provided with an installation and operation manual.
168. Accessible Pedestrian Detection System (4-Directions):
See enclosed specifications. Each system shall be provided with any needed programming equipment, and all necessary components to be fully operational upon installation in the field. No special tools shall be required to perform installation. Each system shall be provided with an installation and operation manual.
169. Navigator Pole Unit Assembly: Pole unit assembly shall come complete with one (1) EN43BNO-B (with 9 x 15 instructional countdown sign and frame), one (1) PHCU4W Control Board, one (1) 25-ft interconnect cable
170. Navigator Pole Unit Configurator: ECONFIG, No substitutes
171. Astro Bracket:
Pelco #AS3009, Stellar Series Clamp Kit w/120-inch stainless steel cable (No Substitute)
172. Lock Key:
Corbin #2 (No Substitutes)
173. Police Panel Key:
Long Shank (No Substitutes)
174. Manual Operation Police Pushbuttons:
Completely made up with 12-foot type SVO coiled cord and ¼-inch stereo plug.
175. Adtran DSU III AR Digital Modem (New Unit):
Unit shall be "New", CSU/DSU Digital Modem-Stand Alone-Terminates into customer V.35 or DB25 EIA RS232 DTE Interface, AC Power (No substitutes will be accepted, complete specifications can be obtained from Adtran).
176. DB-25 to 14-Pin Amp Communications Interface (Completely Assembled):
DB25 Male to 14-Pin Amp Connector with 6-foot cord for Communications Interface C2 Port on type 170 traffic controller to spread spectrum radio or CSU/DSU, wired and complete (Equivalent to Traffic Control Products #34035).

177. **Patch Cord (Completely Assembled):**
Cat 5e patch cord, 7-foot, with molded RJ45 (snag proof ends).
178. **2070L Traffic Signal Controller:**
Completely operational with 1B CPU Module, 2A C1 Field I/O Module, 3B LCD Display Module, 4A Power Supply, 7A Async Serial Communications Module, Econolite Oasis Software.
179. **1B CPU Module, #1 (for 2070L Traffic Signal Controller):**
Completely operational.
180. **1B CPU Module, #2 (for 2070L Traffic Signal Controller):**
Completely operational with Econolite Oasis Software.
181. **2A C1 Field I/O Module (for 2070L Traffic Signal Controller):**
Completely operational
182. **3B LCD Display Module (for 2070L Traffic Signal Controller):**
Completely operational
183. **4A Power Supply (for 2070L Traffic Signal Controller):**
Completely operational
184. **7A Async Serial Communications Module (for 2070L Traffic Signal Controller):**
Completely operational
185. **2070-6D Fiber-Optic Module (Fiber Modem for 2070L Traffic Signal Controller):**
Completely operational
186. **Rack Modem for 2070L Controller:**
GDI Model FDM170-1-2-0, no substitutes
187. **Solar Powered Crosswalk Lights, Active Beacon:**
Equivalent to JSF Technologies #AB-2412, (See Specifications)
188. **Solar Powered 24-hour Flashing Beacon:**
Equivalent to JSF Technologies #FL1400-12, (See Specifications)
189. **LED Street Name Sign:**
See specifications
190. **Fiber Termination Cabinet, 332 Base Mount:**
Fiber termination cabinet, # 332 or equivalent, natural unpainted aluminum, completely wired and complete with:
01) Rack
02) Standard 120-volt service-line filter with terminals for securing service lines and grounding wires enclosed in metal housing.
03) 15-amp breaker with GFI outlet enclosed in metal housing.
04) Light – mounted in Rear with on/off switch
05) Light – mounted in Front with on/off switch
06) Locks and keys, Corbin #2
07) Lifting eyes (removable)
08) Additional ground connection

191. **Fiber Termination Cabinet, 336S Pole Mount:**
 Fiber termination cabinet, # 336S or equivalent, natural unpainted aluminum, completely wired and complete with:
 01) Rack
 02) Standard 120-volt service-line filter with terminals for securing service lines and grounding wires enclosed in metal housing.
 03) 15-amp breaker with GFI outlet enclosed in metal housing.
 04) Light – mounted in Rear with on/off switch
 05) Light – mounted in Front with on/off switch
 06) Locks and keys, Corbin #2
 07) Lifting eyes (removable)
 08) Additional ground connection
 09) Pole mounting brackets
192. **Tri-Stud Adaptor Kit:** Kit shall include one (1) Pelco #SE-0503 with (3) Threaded Studs and one (1) Pelco #SE-5048 Hardware Kit, Tri-Stud w/Gasket (No Substitutes)
193. **Free Swinging Sign Hanger:** 16-inch CTC, Pelco #SE-5117 (No Substitutes)

WAVETRONIX EQUIPMENT (No Substitutes)

Preassembled Backplates and Contact Closure Cards:

194. **WX-SS-BP-0006 SmartSensor Six Sensor Preassembled Backplate w/AC Power**
 Complete unit shall be mounted on Wavetronics 19-inch Rack and include the following components:
 WX-CLK-210 - 0.5 A Circuit Breaker
 WX-CLK-230 - 120 VAC Surge
 WX-CLK-204 - 24 VDC 4 A Power Supply
 WX-CLK-202 - 24 VDC 2 A Power Supply,
 WX-CLK-222 - Three - 2 Sensor Surge & Comm Modules
195. **WX-SS-BP-0004 SmartSensor Four Sensor Preassembled Backplate w/AC Power**
 Complete unit shall be mounted on Wavetronics 19-inch Rack and include the following components:
 WX-CLK-210 - 0.5 A Circuit Breaker
 WX-CLK-230 - 120 VAC Surge
 WX-CLK-204 - 24 VDC 4 A Power Supply
 WX-CLK-222 - Two - 2 Sensor Surge & Comm Modules
196. **WX-SS-BP-0002 SmartSensor Two Sensor Preassembled Backplate w/AC Power**
 Complete unit shall be mounted on Wavetronics 19-inch Rack and include the following components:
 WX-CLK-210 - 0.5 A Circuit Breaker
 WX-CLK-230 - 120 VAC Surge
 WX-CLK-202 - 24 VDC 2 A Power Supply
 WX-CLK-222 - One - 2 Sensor Surge & Comm Module
197. **WX-CLK-112 2 Channel Contact Closure Rack Card (Matrix or Advance)**
198. **WX-CLK-114 4 Channel Contact Closure Rack Card (Matrix or Advance)**

Click! Modules - Spare Parts:

- 199. WX-CLK-200 System Surge Protector (for 1 HD Sensor)
- 200. WX-CLK-202 24 VDC 2 A Power Supply (Power Supply for 1 or 2 sensors)
- 201. WX-CLK-204 24 VDC 4 A Power Supply (Power Supply for 3 or 4 sensors)
- 202. WX-CLK-210 Circuit Breaker 0.5 Amp
- 203. WX-CLK-210-02, Circuit Breaker 2.0 Amp
- 204. WX-CLK-222 Two Sensor Surge & Comm Module (Matrix & Advance)
- 205. WX-CLK-223 One Sensor Surge & Comm Module (Matrix or Advance)
- 206. WX-CLK-230 120 VAC Surge
- 207. WX-CLK-301 Serial to Ethernet converter
- 208. WX-CLK-304 RS 232 to RS 485 converter

Sensors, Mounting Brackets and Splice Boxes:

- 209. WX-SS-200V, SmartSensor Advance Sensor (SS200V)
- 210. WX-SS-225, SmartSensor Matrix Stop Bar Sensor (SS225)
- 211. WX-SS-125, SmartSensor HD Sensor, Dual Radar Side Fire Sensor (SS125)
- 212. WX-SS-611, Heavy Duty Sensor Mount - 6" - 2 axis aluminum bracket
- 213. WX-SS-710, In Line Terminal strip junction box

Sensor Pigtails and Bulk Cable: 8 pin connector

- 214. WX-SS-704-020, SmartSensor Power and Communication Cable w/ Connector - 20 feet
- 215. WX-SS-704-040, SmartSensor Power and Communication Cable w/ Connector - 40 feet
- 216. WX-SS-704-080, SmartSensor Power and Communication Cable w/ Connector - 80 feet
- 217. WX-SS-705-500, Bulk Cable Spool 500'

Sensor Pigtails and Bulk Cable: 26 pin connector

- 218. WX-SS-701-020, SmartSensor Power and Communication Cable w/ Connector - 20 feet
- 219. WX-SS-701-040, SmartSensor Power and Communication Cable w/ Connector - 40 feet

Click! Accessories:

- 220. WX-100-0064 Din Rail 9"
- 221. WX-100-0065 Din Rail 12"
- 222. WX-100-0277, T-Bus Connector (Gray, Power only)
- 223. WX-100-0281 RS-485/USB Mini-Converter
(Connects Laptop to Click!222 RS-485 Bridge Port)
- 224. WX-205-0000 T-Bus Connector (Green, Power & Comm)
- 225. WX-228-0020 T-Bus Left End Right Angle
- 226. WX-310-0014 RJ-11, White, 60 inch Patch Cord

BLUETOOTH TRAVEL TIME EQUIPMENT, BlueTOAD (No Substitutes)

- 227. EGMOD-0-00-04-025X, BlueTOAD Cellular IP/Ethernet Detector Card with 25' cable, no line amps
- 228. EGMOD-0-00-04-025A, BlueTOAD Cellular IP/Ethernet Detector Card with 25' cable, with line amps
- 229. EGMOD-0-00-04-050A, BlueTOAD Cellular IP/Ethernet Detector Card with 50' cable, with line amps
- 230. EGMOD-0-00-04-075A, BlueTOAD Cellular IP/Ethernet Detector Card with 75' cable, with line amps
- 231. EGMOD-0-00-04-100A, BlueTOAD Cellular IP/Ethernet Detector Card with 100' cable, with line amps
- 232. ECMOD-1-30-04-002X-0-0-0 BlueTOAD Self-Enclosed with 30 watt solar panel & cellular IP
- 233. MIMOD-2-00-06-000M-0-0-0 Mini-BlueTOAD non-real time detector
- 234. Post-processing for 1 year for 1 device
- 235. UPS Battery Backup System for Traffic Signal Controller Cabinet
Equipment shall consist of a UPS Battery Backup System that can be mounted in a 332 170 signal cabinet rack with existing traffic control equipment inside. The unit must produce a pure sine wave for proper flashing operation, no less than 850 watts output power, no less than a 2- 4 hour run time on fully charged batteries with all LED signal indications at the intersection, all AGM batteries included with initial purchase, 120v A.C. input and output, automatic bypass system that converts from utility company power to backup power and back. Battery mounting rack included.

236. **UPS Battery Backup System**
Equipment shall consist of a UPS Battery Backup System that can be mounted in a separate cabinet. The unit must produce a pure sine wave for proper flashing operation, no less than 850 watts output power, no less than a 2-4 hour run time with all LED signal indications at the intersection, all AGM batteries included with initial purchase, 120v A.C. input and output, automatic bypass system that converts from utility company power to backup power and back.
237. **Automatic Power Transfer Switch**
Device shall provide automatic power transfer from utility company provided A.C. to an isolated receptacle or terminal strip that allows the connection of a standalone A.C. power source such as a power inverter, generator or UPS system. The device must automatically switch back to the utility power when power is applied. Item must be compatible with all types and brands of equipment. The device must be able to be mounted in any orientation (vertical, horizontal, etc.).
238. **Microwave Intersector Presence Sensor MS SEDCO TC-CK-SBE**
239. **Microwave Intersector cabinet interface card MS SEDCO TCIB-4.2**
240. **Microwave Intersector install kit MS SEDCO**
241. **2070L Traffic Signal Controller without Software:**
Completely operational with 1B CPU Module, 2A C1 Field I/O Module, 3B LCD Display Module, 4A Power Supply, 7A Async Serial Communications Module.
242. **Surge Panel (Camera):** Emerson Network Power Model IPP-105, No Substitutes
243. **EN2 - EZ Communicator Navigator 2-wire Push Button Station:**
Part #EN23CN0B (No Substitute), 9" x 15" sign, MUTCD R10-3e Sign, No Braille on Face Plate, Custom Message, Black Front, Bi-Directional Arrow.
244. **2-wire Navigator Control Unit:** Part #CCU2EN (No Substitute)
245. **Navigator Programmer/Configurator 2-wire/4-wire:** Part #ECONFIG (No Substitute)
246. **LED Light Strip for Illuminated Street Name Sign:**
Southern MFG. part number: SOUH-LEDREBEENGINE-OPTIC (No Substitute)
247. **Power Supply 24-volt for Illuminated Street Name Sign:** Southern MFG. part number: SOUH-LEDPOWERSUPPLY-V41FO (No Substitute)
248. **Photocontrol for Illuminated Street Name Sign:** Southern MFG. part number: SOUH-PHOTOCELL-SWIVEL (No Substitutes)
249. **LED 4-section Dual Red Traffic Signal, Horizontal Mount w/Mtg Hrdwre & Backplate:**
12-inch, black, polycarbonate, Red/Red/Yellow/Green, three cutaway hoods, one tunnel hood, complete w/two (2) Pelco #SE-3043 span wire assemblies and two (2) Pelco SE-5000 Tri-Stud Upper Arm Assemblies, see enclosed backplate specifications.
250. **LED 4-section Dual Red Traffic Signal, Horizontal Mount w/Mtg. Hrdwre.:**
Same as bid item number 249 without backplate
251. **Ruggedcom Switch:** Model #RS900G-HI-P-2SC10-XX (No Substitutes)
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252. Rack Modem: GDI Model #FDM170-1-2-0 (No Substitutes)

SPREAD SPECTRUM RADIO, ANTENNA AND COAXIAL CABLE SPECIFICATIONS

Notes:

1. Each Radio shall come complete with a 6-foot connection cable with a DB-25 Male connector on one and a C2-170 male connector on the other end. When cable is connected it must enable communication between the radio and the 170 controller.
2. Each radio shall come with operational set up software being utilized by the Lexington-Fayette Urban County Government and one operations manual
3. Frequency Hopping Range: (8) selectable zones, each containing 128 frequencies for a total of 1019 frequencies.

OPERATION:

Half Duplex: (\pm 1.6 mhz TX/RX Split)

Simplex: (Peer to Peer)

Frequency Stability: \pm 0.00015% (1.5 PPM), -30 to +60C (-22 to +140F).

Systems Addresses: 1-65,000.

DATA CHARACTERISTICS:

Signalizing Standard: RS-232

Connector: DB-25 Female

Data Port Rates: 1200, 2400, 4800, 9600, 19200, BPS Asynchronous (can accept 38400 BPS).

Data Rate in the RF Channel: 22.5 KBPS.

Average and Typical Latency: <10MS Typical (Buffer Off Mode).

Byte Length: 10 or 11 Bits including start and stop and (OPT.) Parity.

Transparent Communications for all Asynchronous Protocols.

TRANSMITTER:

Power Output: 0.1 to 1-Watt (20-30 DBM \pm 1 DB).

Duty Cycle: Continuous

Output Impedance: 50-Ohms.

Spurious Emissions: -60 DBC.

Harmonic Emissions: -80 DBC.

Transmitter Keying: Data Activated.

Maximum SWR (No Damage): Infinite, All Phase Angle.

RECEIVER:

Type: Double Conversation Super Heterodyne.

Bit Error Rate: Less than 10⁻⁶ at -110 DBM.

Inter Modulation: 75 DB Minimum (EIA).

Desensitization: 65 DB.

Spurious: 70 DB Minimum.

PRIMARY POWER:

Voltage: 13.8 VDC Nominal (10.5-26.0 VDC Operating Range).
TX Supply Current: <400 MA.
RX Supply Current: <125 MA.
Sleep Mode: <30 MA.
Power Connector: 6-foot (1.8 M) Pigtail included.
Fuse: 1.5 AMP Pylorus.
Reverse Polarity Protection: Diode across primary power input.

ENVIRONMENTAL:

Humidity: 95% at 40C (104F); Non-Condensing
Temperature Range Full Performance: -30 to +60C (-22 to +140F)
Temperature Range Typical Performance: -30 to +170C (-40 to 158F).
Size: 2.0" x 5.625" x 9.25" (5.0 x 14.3 x 23.5CM).
Weight: 2.2 pounds (1 KG).
Case: Die Cast Aluminum.

DIAGNOSTICS:

SSI: Received signal strength averaged over (8) hops.
Main Supply Voltage: 13.8 input voltage.
Temperature: Internal Temperature.
Signal Quality: Signal to noise ratio.
Radio Status: Go/No-Go Indicator.
8 Zone Quality Level: Availability of Data in each Frequency Zone.
Radio Alarm and Status Indication: External Leads (PWR,SYNC,TXD,RXD).
Radios shall be MDS 9810 or approved equal.

YAGI ANTENNA:

Gain: 10DBD
Impedance: 50-ohms
VSWR: <1.5:1 Maximum (1.35:1 Typical).
Polarization: Horizontal or Vertical.
Front-To-Back-Ratio: >20 DB.
Maximum Input Power: 100-watts.
H-Plane Beam Width: 40-Degrees (Half-Power).
E-Plane Beam Width: 40-Degrees (Half-Power).
Termination: N Female.
Weight: 3-pounds.
Dimensions: 23 x 7 inches.
Equivalent Flat Plate Area: 0.31 SQ FT..
Wind Survival Rating: 150-MPH.
Mounting for Masts of 1.25 to 2.375 inches OD.
Antennas shall be SCALA TY-900 or approved equal.

OMNI ANTENNA:

Frequency Range: 890-960 MHZ (Broad Band).
Gain: 9 DBD
Impedance: 50-ohms.
VSWR: <1.5:1.
Polarization: Vertical.
Maximum Input Power: 500-watts.
H-Plane Beam Width: 6.5 Degrees (Half-Power).
Termination: N Female.
Weight: 15-pounds.
Height: 119.25 inches.
Radome Diameter: 2 inches.
Wind Survival Rating: 120-MPH
Equivalent Flat Plate Area: 1.31 SQ FT
Mounting: Upright on Masts of 1.2 to 2.5 inch OD
Antennas shall be SCALA OGB9-900 or approved equal.

SURGE ARRESTOR:

Surge: 50 KA IEC 801-5 8/20 Microsecond Wave Form 500 Joules.
Turn On: 600 VDC \pm 20%.
Turn-On Time: 2.5 Nanoseconds for 2 KV/Nanosecond.
Frequency Range: 125 MHZ to 1 GHZ.
VSWR: Less than equal to 1.1 to 1 over frequency range.
Insertion Loss: Less than or equal to 0.1 DB over frequency range.
Temperature Range: -55C to 125C.
The surge protector shall be polyphaser corporation's model #IS-50NX-C2 or approved equal.

CABLE:

Cable shall be pre-assembled with specified connectors. N connectors shall be silver plated weatherproof type.
Cable shall be Beldon 8267 or approved equal.

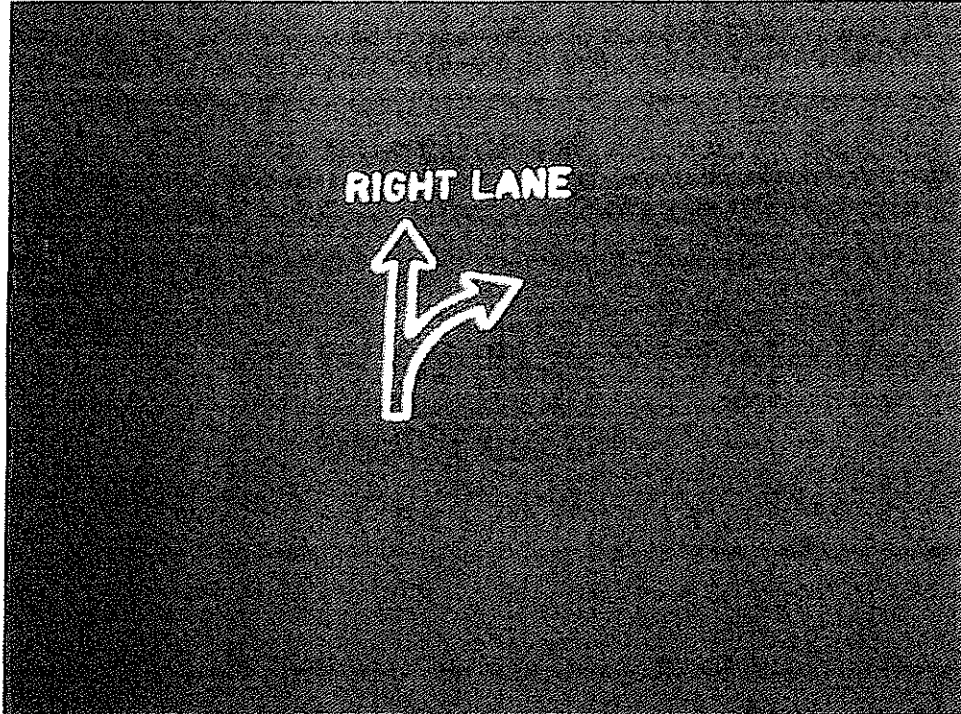
SPECIFICATIONS FOR Traffic Signal Back-Plates

- Back-plates shall be louvered, painted black on both sides, constructed of .050-inch Aluminum and have a yellow retro-reflective strip installed on the outer perimeter.
- Back-plates shall include a minimum of six (6) 12-14x3/4 inch stainless steel self drilling washer screws. The louvers shall be installed horizontally and as close to the signal face as possible so that a 2-inch wide fluorescent yellow tape can be installed around the outer perimeter, width of the back-plate shall be consistent around the entire signal
- Back-plates shall have a 2-inch wide fluorescent yellow retro-reflective tape installed around the outer perimeter of the face and project a solid rectangular appearance at night. Installed tape shall not cover any part of the louvers.
- Reflective tape shall comply with ASTM D4956-05, Type IX
- Back-plates shall have smooth radius corners.
- Back-plates shall have no more than 3-pieces for a 5-section cluster design signal.
- In addition to these specifications Back-plates shall meet ITE Caltrans specifications.
- When back-plates are ordered they shall be packaged by type and in one single box. Each box shall include a label of the type of back-plate enclosed. Screws shall be enclosed in a bag and taped to each back-plate before they are packaged in boxes for shipment

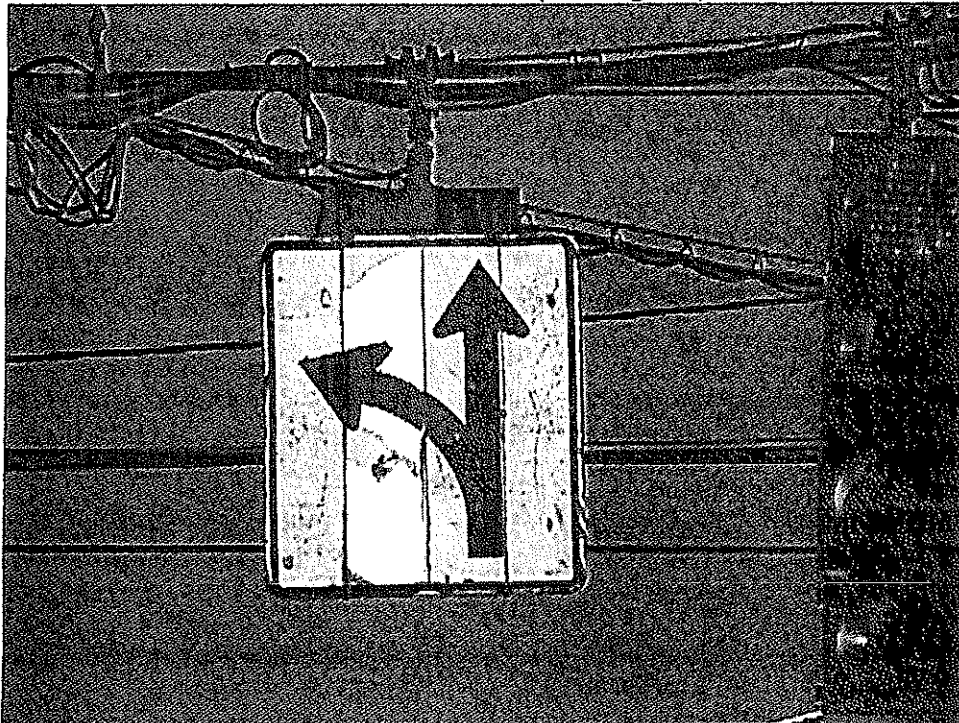
LED Lane Use Control Signal, 30-inch x 36-inch, #2 (Message #1)



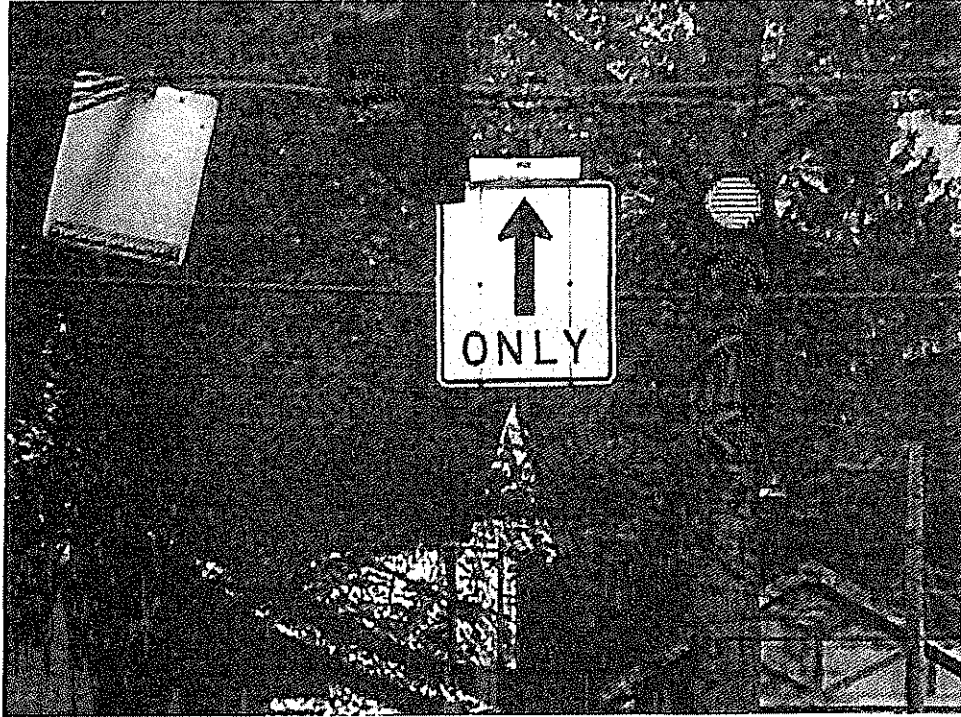
LED Lane Use Control Signal, 30-inch x 36-inch, #2 (Message #2)



Nicholasville/Waller (Message #1)



Nicholasville/Waller (Message #2)



Nicholasville/Rosemont (Message #1)



SPECIFICATIONS FOR ACCESSIBLE PEDESTRIAN SIGNALS AND PUSHBUTTONS

The system shall meet the requirements of the MUTCD 2003 edition. The system shall consist of two components. The first component is the controller unit to be installed in the pedestrian signal head. The second component is the pushbutton unit.

The control unit shall be designed to fit inside a 16" clam shell style pedestrian signal head. The unit shall be powered by the 120 Vac supplied to the walk and don't walk signals and shall provide power to the pushbutton unit. The unit shall have terminal blocks for connection of all wires. The unit shall provide a pulsed 15 Vdc to power the vibrator in the pushbutton unit, shall detect a walk/don't walk conflict, have an audio amplifier of 10 w rms into 8 ohms and have volume control for the locator tone and audible message. The volume shall adjust automatically up to a maximum volume of 89 db. Tones shall automatically adjust to be no more than 5 db above the ambient noise of the intersection. Measurement of the ambient noise shall be made using a microphone with a frequency range of 170 hz to 2.3 khz.

The pushbutton units shall be ADA compliant with a 2" button, vibro tactile and accept 12 to 24 v ac/dc imposed by connection of the pushbutton to the traffic signal controller cabinet detector input. The pushbutton shall have a raised silver arrow on a black background and be adjustable to allow aiming of the arrow to the right, left, up or down. The pushbutton shall vibrate during the walk interval and shall have a sunlight visible L.E.D. light that comes on when the button is pushed and remain lit until the beginning of the next walk interval. The pushbutton unit shall provide a locator tone with a duration of 0.15 seconds or less, shall repeat at 1 second intervals and shall automatically adjust to be no more than 5 db louder than ambient noise. A weatherproof speaker shall be mounted in the pushbutton unit to provide the audible message, the locator tone and a brief "tick" to confirm the button push. The pushbutton unit shall come equipped with the informational sign r10-3b from the Manual of Uniform Traffic Control Devices, 2003 Edition. The audible message shall be "walk sign" followed by the name of the street to be crossed. The pushbutton shall be highly vandal resistant. The frame shall be powder coated cast aluminum, the face plate powder coated aluminum and the arrow push button nickel plated powder coated aluminum.

The system shall be a Polara navigator APS or approved equal. Any bidder proposing an equal product must provide catalog cuts and/or brochures. A sample may be required.

System shall be provided with two complete voice programming kits to program the system to emit the following verbal messages:

"Walk Sign" followed by the street name. The pc and recording equipment are not to be provided.

SPECIFICATIONS FOR ACTIVE BEACON SOLAR-POWERED CROSSWALK LIGHTS

The entire assembly shall be painted black.

- Each unit shall be equipped with two (2) 12-inch polycarbonate signal sections with cutaway hoods.
- Each unit shall be supplied with 12-inch industry standard Amber LED's, 12V, 1.5A.
- LED light beam shall be 40-degree horizontal divergence.
- Each unit shall come preassembled and ready to install with no special tools required.
- Each unit shall be fabricated with set screws so it will slip onto and secure to a 4-inch (ID) spun aluminum post (Example: JSF Technologies model #AB-2412).
- Each unit shall be equipped with wireless technology enabling the ability to be activated via a pushbutton, and activate all other units at the installation location at the same time.
- Each unit shall be capable of maintaining standard operation in a dense environment and be capable of operating 30-days without solar charging.
- Each units battery pack shall have a 3 to 5-year service life warranty.
- Operating temperature of each unit shall be minus 40-degrees Fahrenheit to +165-degrees Fahrenheit.
- Each unit shall be equipped with nighttime dimming (Beacon moves through 6 stages of dimming as night falls).
- Each unit shall have smart software (During extended sunny periods, system supplies extra power to ensure effective visibility in daylight hours, during extended heavily overcast periods of snow cover , system dims lights and reduces strobe count to ensure beacon remains effective as long as possible).
- Each unit shall flash in compliance with the *Manual on Uniform Traffic Control Devices*
- Each LED face shall meet ITE specifications for Luminosity.
- Each unit shall withstand wind loads of 110-mph.
- Each unit shall be warranted for one (1) year against any failure due to component failure and shall be replaced by the vendor at no cost to the Lexington-Fayette Urban County Government.

SPECIFICATIONS FOR 24-HOUR FLASHING BEACON

The entire assembly shall be painted black.

- Each unit shall come preassembled and ready to install with no special tools required.
- Each unit shall be equipped with One (1) 12-inch polycarbonate signal section with cutaway hood.
- Each unit shall be supplied with 12-inch industry standard Red LED, 12V, 1.5A, 6W.
- LED light beam shall be 40-degree horizontal divergence.
- Each unit shall come preassembled and ready to install with no special tools required.
- Each unit shall be fabricated with set screws so it will slip onto and secure to a 4-inch (ID) spun aluminum post (Example: JSF Technologies model #FL-1400-12) .
- Each unit shall be capable of maintaining standard operation in a dense environment and be capable of operating 30-days without solar charging.
- Each units battery pack shall have a 3 to 5-year service life warranty.
- Operating temperature of each unit shall be minus 40-degrees Fahrenheit to +165-degrees Fahrenheit.
- Each unit shall be equipped with nighttime dimming (Beacon moves through 6 stages of dimming as night falls.
- Each unit shall have smart software (During extended sunny periods, system supplies extra power to ensure effective visibility in daylight hours, during extended heavily overcast periods of snow cover , system dims lights and reduces strobe count to ensure beacon remains effective as long as possible.
- Each unit shall flash in compliance with the *Manual on Uniform Traffic Control Devices*
- Each LED face shall meet ITE specifications for Luminosity.
- Each unit shall withstand wind loads of 110-mph.
- Each unit shall be warranted for one (1) year against any failure due to component and/or battery failure and shall be replaced by the vendor at no cost to the Lexington-Fayette Urban County Government.

Specifications for Internally Illuminated, Edge-Lit, LED Type Street Name Signs

Pricing:

- Signs shall be priced per 6-inch length, height of sign face shall be 18-inches.
- Sign Legend, Font and Length shall be specified by the Lexington-Fayette Urban County Government when an order is placed.
- All prices shall include all items outlined in the specifications and shall include all shipping and handling fees.
- Sign orders placed will not be less than 24-inches in length.

Material and Dimension Specs:

- The frame shall be made of high quality aluminum material with a black, powder coat finish and water-tight seal.
- The sign face shall be 18" x (24" to 96") (Length shall be determined when order is placed)
- Thickness of completed sign shall be 2 & 1/4" or less.
- Sign lens shall be made of translucent, white, high impact UV resistant polycarbonate or equivalent material capable of maintaining like new appearance for 5 or more years.
- The signs shall meet wind load requirements described in the "Standard Specifications for Structural Supports of Highway Signs, Luminaries, and Traffic Signals, latest edition," by AASHTO.
- All stainless steel hardware connecting sign to mast arm bracket shall have self locking nuts (nuts having locking bushings pre-manufactured into them).
- All signs shall be engineered for double sided messages with (Industry standard, street name green) diamond grade reflective sheeting, letter color shall be bright white etched and paint filled into the acrylic., when a single message sign is ordered the non used side of the sign shall have a blank cover installed blocking any/all light from being seen in the opposing direction.

Sign Housing:

- Sign frame/housing shall be formed and manufactured out of extruded aluminum alloy 6061 T6 with a minimum tensile strength of 20,000 ksi
- The sign frame/housing shall incorporate stainless steel fasteners throughout.
- Weep holes shall be located at strategic points in the bottom of the housing assembly to allow drainage of condensation.

Sign Panels:

- The entire surface of the sign panel shall be evenly illuminated so that the surface of a 1-ft. x 1-ft. section of the sign has a light output of a minimum 50-nits with a maximum degradation of 15-nits after 5-years.
- Sign panels shall be translucent made of high impact UV resistant plastic/acrylic material able to withstand 5-years of <400 nm UV light, all surfaces shall be free of blemishes in the plastics or coating that might impair the service or distract from the general appearance and color matching of the sign.

Mast Arm Mounting Hardware:

- Completed sign shall have two (2) mounting brackets permanently attached, evenly spaced (one on each end) on the top of the sign frame for mounting, permanently mounted brackets on sign frame shall be pre-drilled to accommodate supplied adjustable mounting brackets (outlined below).
- Each sign shall be supplied with two (2) adjustable brackets allowing a 6-inch vertical adjustment of the sign from either end.
- Each sign shall be supplied with two (2) Astro-Brac (Free Swinging) #AB-0106-L Brackets. (Bracket specifications: 42-inch bands, clevis hanger opening must be ¾-inch, no substitutes).
- Adjustable brackets shall have all other necessary brackets/hardware to connect to the Astro-Brac (Free Swinging) #AB-106-L Bracket.

Electrical Specs:

- All electrical components shall comply with NEC requirements and be UL Outdoor damp location rated.
- Input power shall be 120 VAC with a consumption rate of approx. 4 watts per square foot of sign face. Transformer and field wire connection point shall be integral to the sign housing with easy access for maintenance purposes.
- Field wire connections shall be accomplished by a solder-less connector (screw down lugs).
- Sign must be able to operate in temperature extremes from -40 deg F. to +165 deg F.
- LED light modules shall be capable of operating for at least 50,000 hours with no more than 30 % degradation.

Light Source:

- The LED light modules shall be composed of white LED's, these modules shall be sealed making the entire module waterproof.
- Modules shall operate at 700-mA constant current.
- Power consumption shall be 4-watts per foot with an operating temperature of -40 degree Centigrade to +55 degree Centigrade.
- Total light output of these modules shall be 150-lumens.
- Protected life shall be 50,000-hours with a 70% specified light output after 50,000-hours of continuous operation.

Signs must be made so that the lens face can be modified and/or replaced by L.F.U.C.G. staff.

Signs and components shall have a prorated warranty against defects for a period of no less than five years.

Approved Siamese Cable for Vantage Use (1 of 3)

Vantage Field Service Bulletin

Page 1 of 1

Vantage Product Support



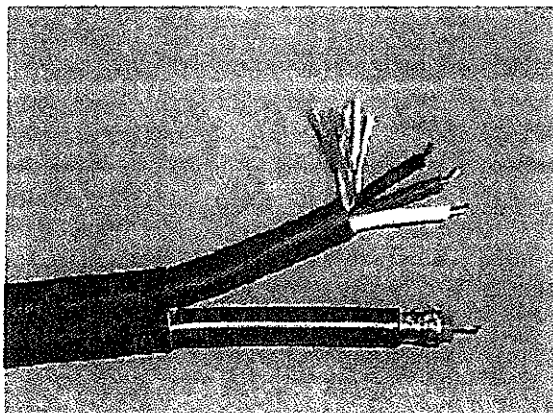
UPDATE to previous FSB
isotechFSB_3_04.pdf
March 2004

Subject: Additional Approved Siamese Cable for Vantage Use
Date: October 26, 2006
Re: To All Vantage Dealers

Because of continued interest in additional Iteris approved Siamese type video/power cables, and because of the potential problems that have been identified with the use of non-approved cables, a second Siamese cable has been approved for use.

The use of the Belden 8281 coaxial cable and a separate power cable that meets our specifications is still the standard, however, if a Siamese cable must be used the following cables are acceptable. The cables must be the manufacturers exact part numbers as listed, use of unapproved cables may negatively affect Vantage system performance and can result in the invalidation of Vantage product and performance warranties.

- ISOTEC I59PVCC-00
- Advanced Digital Cable 99163SFX



This is a picture of the ISOTEC Siamese cable. It is recommended that the outer cable jacket be cut away completely on the drip loop portion, to reduce strain on the camera BNC and Deutsch connectors. A suitable waterproofing compound should also be used to seal the "Y" junction where the video and power cable exit the outer jacket. This will help to prevent water from wicking down the cable and accumulating inside.

Questions? Call the Vantage Product Support Team at (888) 254-5487

Approved Siamese Cable for Vantage Use (Pg 2 of 3)



100% SWEEP TESTED 1MHz TO 1GHz
 75 Ω Precision Video Coaxial Cable/ Double Braided RG 59/U Type
 20 AWG SOLID BC

1st COMPONENT

AWG (Strand) Size/Type Nom. D.C.R.	Dielectric Type Nom. Od	Shield Type Coverage Nom. D.C.R.	Jacket Type & Thickness	Cable Color & Jacket OD	Nom. Cap. pF/ft. pF/m.	Vel. Of Prop.	Nom. Imp.
20 AWG Solid BC 10.2 Ω/M' 33.1 Ω/km	Solid Polyethylene .198"	98% TC X 2 1.1 Ω/M' 3.6 Ω/km	Polyethylene .035"	Black .304"	20.9 pF/ft 88.7 pF/m	67%	75Ω

ATTENUATION

Frequency MHz	Nom. Atten. (dB/100ft)	Nom. Atten. (dB/100m)	Frequency MHz	Nom. Atten. (dB/100ft)	Nom. Atten. (dB/100m)
1	0.14	0.46	135	2.58	8.46
3.58	0.47	1.54	143	2.62	8.59
5	0.54	1.77	180	2.79	9.15
7	0.62	2.03	270	4.36	14.30
10	0.68	2.23	360	4.98	16.33
67.5	2.02	6.63	540	6.68	21.91
71.05	2.10	6.89	720	7.82	25.65
100	2.50	8.20	1000	9.18	30.11

2nd COMPONENT

No. of Conductors	Conductor Size and Material	Insulation Type & Thickness	Color Code	Nom. Capacitance	Nom. Impedance	Jacket type & Thickness	Jacket O.D. & Color
3	16 AWG 19/29 BC	PVC .032"	Black, White, Green	18 pF/ft 62.3 pF/m	80%	PVC Pressure with tape & filters .040" +/- .003"	.340" +/- .005" Black

Isotec Product Number UL Style	Jacket Type & Thickness	Cable Color & Jacket OD	Copper Weight LBS/MFT	Shipping Weight LBS/MFT
159PVCC-00	PE .030" +/- .005"	BLACK .592" +/- .005"	59.85 LBS/MFT	168 LBS/MFT
UL: n/a CSA: n/a				



PRINT LEGEND: 159PVCC-00 TRAFFIC CONTROL CABLE 16-3C 600V/PRECISION VIDEO "DIR BUR" "SUN RES" MFG BY ISOTEC

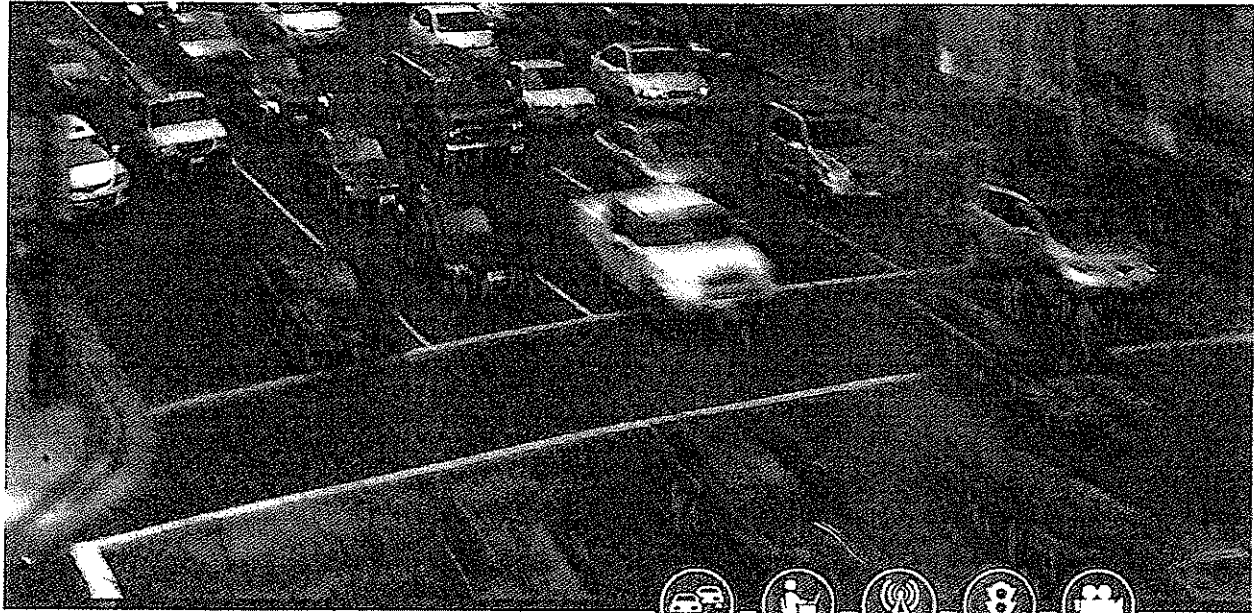
ACCEPTANCE OF ABOVE DESIGN: _____ DATE: _____

Shipping Tolerance: +/- 10%
 Length Tolerance: +/- 10%
 Random/Odd Length Tolerance: May ship up to 15% of order total on random/odd lengths.
 Isotec makes every effort to provide accurate specifications. Printing errors are subject to correction. Standard product specifications are subject to change without notice.
 Contact your Isotec sales person for current specifications.

Rev: 02/09/04

Approved Siamese Cable for Vantage Use (Pg 3 of 3)

Advanced Digital Cable, Inc.	Specification Sheet for: 75 Ohm Video Coax with 16 awg 3 conductors, fine stranded IMSA 20-1	Date: 5/27/03																
		Part Number: 99163SFX																
Drawn by: 	Customer Approval:	UL Type: None																
																		
Construction Details:																		
<p>This cable is a parallel construction of one low density polyethylene jacketed video coax and one flexible polyvinyl chloride jacketed three conductor 16 awg fine stranded cable under an oval black flexible polyvinyl chloride jacket.</p>																		
Physical Specifications		Electrical Specifications																
<u>75 Ohm Video Coax</u>		<u>Nominal Attenuation</u>																
Conductor:	70 awg solid bare copper .032"	<table border="1"> <thead> <tr> <th>MHz</th> <th>dB/100 feet</th> </tr> </thead> <tbody> <tr><td>10</td><td>.78</td></tr> <tr><td>50</td><td>1.70</td></tr> <tr><td>100</td><td>2.50</td></tr> <tr><td>200</td><td>3.70</td></tr> <tr><td>400</td><td>5.30</td></tr> <tr><td>700</td><td>7.40</td></tr> <tr><td>1000</td><td>9.20</td></tr> </tbody> </table>	MHz	dB/100 feet	10	.78	50	1.70	100	2.50	200	3.70	400	5.30	700	7.40	1000	9.20
MHz	dB/100 feet																	
10	.78																	
50	1.70																	
100	2.50																	
200	3.70																	
400	5.30																	
700	7.40																	
1000	9.20																	
Dielectric:	.084" wall of low density polyethylene to .200" nom.	Impedance: 75 Ohms																
Braid 1:	34 awg tinned copper with 98 % coverage.	Capacitance: 20.5 pF/feet																
Braid 2:	34 awg tinned copper with 98 % coverage.	Velocity of Prop.: 66%																
Jacket:	.030" wall black low density polyethylene to .304" nom.																	
<u>16 awg cable</u>																		
Conductor:	3 - 16 awg (26/30) bare copper .063" (for optimum flexibility of a rigid cable)																	
Insulation:	.030" wall polyvinyl chloride per the color code to .123" nominal.																	
Cabling:	Three 16 awg conductors cabled together under a clear polyester tape wrap in a 3" left hand lay to a nominal diameter of .270".																	
Jacket:	.030" wall flexible black polyvinyl chloride to .330" nom.																	
Overall																		
Jacket:	One video coax and one 16 awg three conductor cable pulled parallel under a .030" oval jacket of flexible black polyvinyl chloride to a nominal diameter of .395" x .700" (overall).	<table border="1"> <thead> <tr><th>Color Code</th></tr> </thead> <tbody> <tr><td>White</td></tr> <tr><td>Green</td></tr> <tr><td>Black</td></tr> </tbody> </table>	Color Code	White	Green	Black												
Color Code																		
White																		
Green																		
Black																		
Print:	Print in white ink: ADVANCED DIGITAL CABLE 16-3C W/PRECISION VIDEO SUN RES DTR BUR																	
Put Up:	Customer to specify.																	



VANTAGE EDGECONNECT™

Quad-view remote communications module

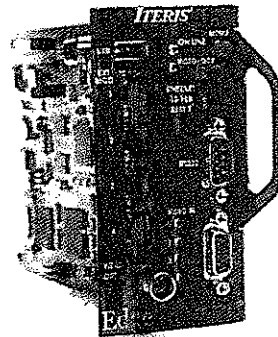
Ethernet connectivity with streaming video

Vantage EdgeConnect™ is a unique “technology first” product that enhances connectivity between systems in the field and a remote management system. Iteris’ EdgeConnect quad-view remote communications module provides both local and remote management of data and video over Ethernet — enabling system operators to manage their Vantage® video detection systems more efficiently and effectively by allowing the user to view real-time video and move data from the field to a central location.

Highly flexible for unique user experience

Vantage EdgeConnect’s advanced MPEG4/H.264 video compression ability minimizes bandwidth usage, and is scalable to fit the bandwidth available.

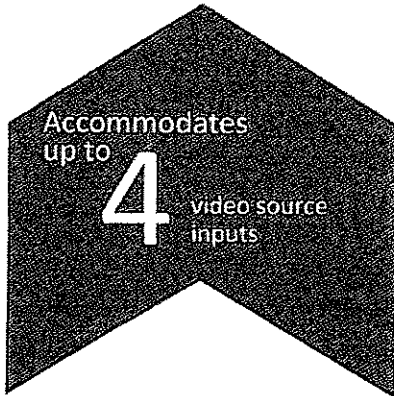
Data rates can be set as low as 32 kbps or as high as 7 Mbps. Variable video frame rates between 5 and 30 frames per second also allow the user to optimize the streaming video to fit their specific application.



Innovation for better mobility

ITERIS





VANTAGE EDGECONNECT™

Quad-view remote communications module

The EdgeConnect module provides the ability to view up to four camera feeds through a single IP connection, enabling the user to quickly review the operation of an entire intersection on one screen. The easy-to-use, browser-based user interface simplifies the management of video streams.



BENEFITS

- Quickly review the operation of an entire intersection on one screen
- MPEG4/H.264 video compression ability is scalable to fit the bandwidth available
- "Plug and play" operation enables use of existing detector rack, minimizing the need for reconfiguring the controller cabinet
- Simple-to-use interface reduces training time and improves productivity levels
- Ease of setup and remote access reduces time and cost of installation and maintenance of equipment
- Single quad view video stream or four independent single streams

SPECIFICATIONS

Connections	4 BNC connectors for video input (via DB15 spider cable)
	4 RJ45 Edge2 Extension Module interface
	1 RJ45 Ethernet connector
	1 EIA-232 local access port
	USB mouse port
	1 BNC composite video out connector
Mechanical	Size 7.0" long, 4.5" high, 2.3" wide (17.8 cm long, 11.4 cm high, 5.8 cm wide)
	Weight 0.64 lbs. (0.29 kg)
Environment	Temperature -35° F to +165° F (-37° C to +74° C)
	Humidity 0% to 95% non-condensing
	Vibration 0.5G, 3 axes, 5-30 Hz
	Shock 10G in all 3 axes
Electrical	12/24 VDC (500/260 mA) - 6.25 W max



www.iteris.com

Ed. 2012 (Rev)



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Innovation for better mobility

ITERIS

Kentucky Department of Transportation LED Specifications (Pg 1 of 4)

1/4

1000000124	Document Phase Final	Document Description LED Modules	
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Section 1—Specifications -

1.00—Specifications of Commodity and/or Service Requirements

Specification for Replacement Light Emitting Diode Modules for Vehicular and Pedestrian Signals

General

The purpose of this specification is to provide minimum design and performance requirements for the following light emitting diode (LED) modules (replacement) for use in vehicular and pedestrian traffic signal heads:

- Circular Signal – Red – 8" and 12"
- Circular Signal – Yellow – 8" and 12"
- Circular Signal – Green – 8" and 12"
- Arrow Signal – Red – 12"
- Arrow Signal – Yellow – 12"
- Arrow Signal – Green – 12"
- Pedestrian Signal – Countdown

Unless stipulated otherwise in this specification:

Vehicular, circular, signal modules shall comply with the Institute of Transportation Engineers (ITE) Vehicle Traffic Control Signal Heads: *Light Emitting Diode (LED) Circular Signal Supplement*, dated June 27, 2005;

Vehicular, arrow, signal modules shall comply with the ITE Vehicle Traffic Control Signal Heads: *Light Emitting Diode (LED) Vehicle Arrow Traffic Signal Supplement*, dated July 1, 2007; and

The walking person and hand icons portion of the pedestrian signal modules shall comply with the ITE *Pedestrian Traffic Control Signal Indications- Part 2: Light Emitting Diode (LED) Pedestrian Traffic Signal Modules*, dated March 19, 2004.

Physical and Mechanical Requirements

The lens of the module shall be integral to the unit with a smooth outer surface constructed of plastic or glass. The optical assembly shall diffuse the light output and provide uniform illumination across the entire surface of a circular lens and the required visible portions of arrow and pedestrian lenses. Individual LED's shall not be visible to the observer of indications displayed by vehicular traffic signal modules. If a polymeric lens is used, a surface coating or chemical surface treatment shall be used to provide front surface abrasion resistance.

In addition to the module identification requirements of the respective ITE documents, the following additional information shall be permanently identified on the backside of each module:

- Date of manufacture (month/year)
- Color (for vehicular modules)
- Type (circular or arrow)

The pedestrian signal module shall be designed to display the walking person icon and hand icon as

Kentucky Department of Transportation LED Specifications (Pg 2 of 4)

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1000000124	Document Phase Final	Document Description LED Modules	
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shown in the ITE specification and a numerical countdown display. The icons shall be designed so that the entire areas comprising the icons appear illuminated. The icons shall overlay one another adjacent to two 7-segment numerical digits, comprised of two rows of LED's. The module shall not have any external attachments or options that would allow disabling the countdown function. Contrary to the ITE specification, all pedestrian signal modules shall have a message bearing surface of 16" x 18" and a minimum icon size of 11" x 7" and minimum digit size of 9" x 6.5". The module shall be capable of detecting any increase or decrease of the pedestrian timing and re-programming itself should this be detected. The module shall be capable of recognizing preemption events and temporarily modifying the crossing cycle accordingly.

Electrical Requirements

All modules shall be operationally compatible with traffic signal controllers, cabinets and accessories manufactured to the California Department of Transportation (Caltrans) Traffic Signal Control Equipment Specifications, latest edition.

Quality Assurance, Quality Control and Testing

The manufacturer's quality management system shall be ISO 9001:2008 certified. The ISO certification shall be provided with the bid package. Manufacturer shall be ISO 9001:2008 certified or shall be rejected as non responsive.

All modules shall be Intertek certified and shall bear the ETL mark. The manufacturer shall have a license agreement with Intertek whereby an initial factory assessment and ongoing quality assurance testing every six months are performed. The certification and copy of license agreement shall be submitted with the bid proposal. The manufacturer shall supply the KYTC with all quality assurance testing results after they are performed throughout the contract period.

See this site for a list of Certified Products:

http://www.intertek.com/uploadedFiles/Intertek/Divisions/Commercial_and_Electrical/Media/PDFs/Electronics_and_Electric

Prior to award of the contract, the KYTC reserves the right to require delivery of sample modules for visual inspection and approval.

KYTC reserves the right to engage an independent testing laboratory to perform quality assurance testing on a minimum ten units randomly selected from all units furnished for any or all line items on the contract. Failure to meet the requirements of the specifications by two or more sample units representing any line item may result in all the units furnished for that line item being rejected, the contract may be declared null and void, and liquidated damages may be assessed for the total amount of the awarded contract. The KYTC will notify the vendor of this rejection by overnight mail or other adequate means.

Delivery

The time from receipt of delivery order until delivery of the modules shall be a maximum of 30 calendar days. All shipments not delivered within the specified 30 calendar days will be subject to liquidated damages at the rate of 1% of the total delivery order.

A complete list of serial numbers for each LED module shall be sent in Microsoft Excel format via email to Ted.Swansegar@ky.gov or may be sent on CD-ROM with each invoice.

Every individual container shall have the date of shipment clearly stamped on the outside of the container

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1000000124	Document Phase Final	Document Description LED Modules	
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so that the warehouse may utilize a "first-in-first-out" inventory process.

Warranty

A written warranty against defects in materials and/or workmanship shall be furnished. The warranty period will last 84 months and begin on the date the modules are received by KYTC. Modules that fail within the warranty period will be returned to the vendor and replacement modules shall be provided at no cost to KYTC.

Section 2—Terms and Conditions of the Master Agreement

2.00—Scope of the Contract

The KYTC Division of Purchases issues this Master Agreement for:

Replacement LED modules

2.01—Contract Components and Order of Precedence

The Commonwealth's acceptance of the offer indicated by the issuance of an Award by the KYTC Division of Purchases shall create a valid Master Agreement consisting of the following:

1. The written Master Agreement between the Parties;
2. Any Addenda to the Solicitation;
3. Any provisions of the Solicitation and all attachments thereto;
4. The Bidder's response to the Solicitation, and
5. The Kentucky Revised Statutes KRS 45A.

In the event of an inconsistency between provisions of the solicitation, the inconsistency shall be resolved by giving precedence in the following order: (a) the Specifications; (b) other provisions of the Solicitation, whether incorporated by reference or otherwise; (c) Contract or Master Agreement Terms and Conditions; (d) FAP 110-10-00 – General Conditions and Instructions for Solicitations and Contracts.

2.02—Initial Contract Period

The Master Agreement will be effective upon award and expire 7-31-10

2.03—Optional Renewal Period

This Master Agreement may be extended at the completion of the initial contract period for three (3) additional one-year periods. This extension must have the written approval of the vendor and the KYTC

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Division of Purchases. The Commonwealth of Kentucky reserves the right to renegotiate any terms and/or conditions as may be necessary to meet requirements for the extended period. The vendor will be advised of any proposed revisions prior to the renewal periods. In the event proposed revisions cannot be agreed upon, either party shall have the right to withdraw without prejudice from either exercising the option or continuing the contract in an extended period.

2.04—Divisions/Agencies to Be Served

This contract shall be for use by the following Divisions/Agencies of the Kentucky Transportation Cabinet:

Division of Traffic

No shipments or services are authorized until an official Delivery Order has been fully processed by an authorized agency.

2.05—Quantity Basis of Contract

This Master Agreement has no guarantee of any specific quantity, and the State is obligated only to buy that quantity which is needed by its agencies.

2.06—Exception to Required Use of Contract

The establishment of this Master Agreement is not intended to preclude the use of similar products when requested by the agency. The Commonwealth of Kentucky reserves the right to acquire large requirements through other competitive processes.

2.07—Basis of Price Revisions

PRICE ADJUSTMENTS: Unless otherwise specified, the prices established by the Master Agreement shall be firm for the contract period subject to the following:

A. **Price Increases:** A price increase will not be allowed during the first six (6) months of the contract. Only one price increase will be allowed during the contract period. The price increase must be based on industry wide price changes. The contract holder must request in writing a price increase at least thirty (30) days prior to the effective date, and shall provide firm proof that the price increase(s) is justified. The KYTC Division of Purchases may request additional information or justification. If the price increase is denied, the contract holder may withdraw from the contract without prejudice upon written notice and approval by the KYTC Division of Purchases. Notice of withdrawal must be provided a minimum of forty-five (45) days prior to the effective date.

B. **Price Decreases:** The contract price shall be reduced to reflect any industry wide price decreases. The contract holder is required to furnish the KYTC Division of Purchases with notice of any price decreases as soon as such decreases are available.

C. **Extended Contract Periods:** If the contract provides for an optional renewal period, a price adjustment

2013 Traffic Signal and Control Equipment Bid Tab

Bid Invitation #		
Num	Description	Amount
1	2070L Complete-#332 Base Mount Cabinet	NO BID
2	Surge Protection Panel, 8-Phase	500.00
3	Surge Protection Panel, Lane Use Control	730.00
4	2070L complete with Lane Use Control	NO BID
5	2070L complete w/everything - #336S Pole Mount Cabinet	NO BID
6	Traffic Control Cabinet #1 - Base Mount w/exclusions <i>Alternate Item</i>	7,600.00
7	Traffic Control Cabinet #2 - Base Mount w/exclusions <i>Alternate Item</i>	6,325.00
8	Traffic Control Cabinet #3 - Base Mount w/exclusions <i>Alternate Item</i>	6,660.00
9	Traffic Control Cabinet - #336S Pole Mt w/exclusions <i>Alternate Item</i>	6,850.00
10	170 Rack/Terminal facility	4,450.00
11	170 Rack/Terminal facility for Lane Use Control	5,770.00
12	170 Pole Mount (336S) Rack/Terminal facility	4,290.00
13	Base Mount Cabinet #1, 77" H x 35" W x 25" D	1,625.00
14	Base Mount Cabinet, #2, 54" H x 35" W x 25" D	1,250.00
15	Base Mount Cabinet #3, 45" H x 30" W x 16" D	1,100.00
16	Pole Mount Cabinet #1, 50" H x 24" W x 16" D	1,100.00
17	Pole Mount Cabinet #2	1,380.00
18	Flasher Cabinet #1, 14" x 10" x 7"	230.00
19	Flasher Cabinet #2, 14" x 11" x 11"	230.00
20	Flasher Cabinet with NEMA 3 Flasher	365.00
21	Time of Day Controller Cabinet	695.00
22	Time Clock #1, Paragon EC72 Series	NO BID
23	Time Clock #2, ELTEC #NTC-17E (No Substitute)	NO BID
24	Time Clock #3 (Solar Powered School Flasher), RTC AP21 (DC Input)	366.00
25	Conflict Monitor, NEMA 12-Channel enhanced	425.00
26	Conflict Monitor, EDI Model 2010 ECL, Enhanced	466.00
27	Conflict Monitor, EDI 2018 Kclip	661.00
28	MonitorKey CMU Data Key Programming Tool	339.00
29	Inductive Loop Vehicle Detector, Model 222-C	87.00
30	Inductive Loop Vehicle Detector, Model 222-C, Relay Fail Call Output	87.00
31	Inductive Loop Vehicle Dual Channel, LCD Display	159.00
32	Inductive Loop Analyzer	NO BID
33	242 DC Isolator	35.00
34	Switch pack model 200 with indicators	22.00

2013 Traffic Signal and Control Equipment Bid Tab

Num	Description	Amount
35	Flasher NEMA 3 alternate circuit model 204	22.00
36	Dianostic Software 170 enhanced conflict monitor test on a system memory module	No Bid
37	Automated Conflict Monitor Tester	15,500.00
38	Pedestrian Beeper	340.00
39	LED Countdown Pedestrian Signal w/Housing (ICC) <i>Alternate Item</i>	225.00
40	LED Countdown Pedestrian Signal Module	108.00
41	LED Countdown Pedestrian Signal w/Mounting Hardware Kit	291.00
42	LED Countdown Pedestrian Signal, 1-way, 9-foot Pedestal Pole	695.00
43	LED Countdown Pedestrian Signal, 2-way, 9-foot pedestal pole	957.00
44	Pedestal Pole 9-foot	220.00
45	Pedestal Base	156.00
46	Pedestal Base w/reinforced collar	225.00
47	Pedestal Pole, 10-foot, Painted Black	229.00
48	Pedestal base anchor bolts, 3/4-inch x 18-inch, set of 4	64.00
49	Pedestal base anchor bolts, 3/4-inch x 26-inch, set of 4	77.00
50	Pedestrian signal top bracket, 2-way	100.00
51	Pedestal pole (2-way) mounting brackets	141.00
52	Pedestal Signal Top Bracket, 1-way	42.00
53	Pedestrian Push Button Box	18.72
54	Pedestrian Push Button (Rees)	130.00
55	Pedestrian Push Button (Bulldog)	No Bid
56	Pedestrian Push Button w/box (Bulldog)	No Bid
57	Pedestrian push button assembly - 1-direction	No Bid
58	Pedestrian push button assembly - 2-direction	No Bid
59	Pedestrian push button sign w/Left Arrow, 9" x 12"	12.00
60	Pedestrian push button sign w/Right Arrow, 9" x 12"	12.00
61	Pedestrian push button sign with Left Arrow, R10-3e, 9" x 15"	14.50
62	Pedestrian push button sign with Right Arrow, R10-3e, 9" x 15"	14.50
63	Pedestal pole cap (Acorn)	19.00
64	Pedestrian signal (single) mounting hardware	75.00
65	LED Vehicle Signal (3-section)	275.00
66	LED Vehicle Signal (3-section) with Backplate	325.00
67	LED Vehicle Signal (Left Turn)	290.00
68	LED Vehicle Signal (Left Turn) with Backplate	335.00
69	LED Vehicle Signal (5-section)	520.00

2013 Traffic Signal and Control Equipment Bid Tab		
Num	Description	Amount
70	LED Vehicle Signal (5-section) with Backplate	605.00
71	LED Vehicle Signal (4-section)	345.00
72	LED Vehicle Signal (4-section) with Backplate	490.00
73	LED Vehicle Signal (4-section), Flashing Yellow Arrow	345.00
74	LED Vehicle Signal (4-section), Flashing Yellow Arrow with Backplate	495.00
75	Vehicle Signal Lens, LED Retrofit, Green	24.25
76	Vehicle Signal Lens, LED Retrofit, Yellow	26.00
77	Vehicle Signal Lens, LED Retrofit, Red	23.50
78	Vehicle Signal Lens, LED Retrofit, Left Turn Green	30.90
79	Vehicle Signal Lens, LED Retrofit, Left Turn Yellow	29.90
80	Vehicle Signal Lens, LED Retrofit, Left Turn Red	29.35
81	LED Signal Section, Red	150.00
82	LED Signal Section, Yellow	155.00
83	LED Signal Section, Green	150.00
84	Signal Back-Plate #1, (Louvered 12-12-12)	75.00
85	Signal Back-Plate #2, (Louvered 12-12-12-12)	165.00
86	Signal Back-Plate #3, (Louvered 5-section Cluster)	115.00
87	Dual Red Mounting Hardware, Span Wire Mount	185.00
88	Dual Red Mounting Hardware, Mast Arm Mount, Vertical	306.00
89	LED Dual Red Vehicle Signal w/Mtg. Hrdwre., Span Wire Mount	454.00
90	LED Dual Red Vehicle Signal w/Mtg. Hrdwre., Span Wire Mount, with Backplate	472.00
91	LED Dual Red Vehicle Signal w/Mtg. Hrdwre., Mast Arm Mount	449.00
92	LED Dual Red Vehicle Signal w/Mtg. Hrdwre., Mast Arm Mount, with Backplate	602.00
93	Tri-Stud Slip Fitter Assembly for 2-way Signal, pedestal pole mount	165.00
94	LED Lane Use Control Signal, 18-inch x 18-inch	4,527.00
95	LED Lane Use Control Signal, 24-inch x 30-inch	6,643.00
96	LED Lane Use Control Signal, 30-inch x 36-inch, #1	4,153.00
97	LED Lane Use Control Message Sign, 33-inch x 39-inch	4,406.00
98	LED Lane Use Control Message Sign, 33-inch x 33-inch	4,521.00
99	LED Lane Use Control Signal, 30-inch x 36-inch, #2	4,320.00
100	LED Lane Use Control Signal, 30-inch x 36-inch, #3	4,165.00
101	LED Lane Use Control Signal/Sign (Nich/Waller)	3,745.00
102	LED Lane Use Control Signal/Sign (Nich/Rosemont)	3,745.00
103	Loop Lead-in, 2-pair, 1,000-feet 10,000' Minimum Order Quantity	950.00
104	Loop Lead-in, 4-pair, 5,000-feet 10,000' Minimum Order Quantity	1,600.00

2013 Traffic Signal and Control Equipment Bid Tab

105	Coaxial Cable, Beldon 8267, 1,000-feet		1,600.00
106	Signal Cable, 7-conductor, 500-feet	5,000 Minimum Order Quantity	325.00
107	Signal Cable, 7-conductor, 1,000-feet	5,000 Minimum Order Quantity	625.00
108	Signal Cable, 16-conductor, 500-feet	5,000 Minimum Order Quantity	750.00
109	Signal Cable, 16-conductor, 1,000-feet	5,000 Minimum Order Quantity	1,450.00
Num	Description		Amount
110	Messenger Cable, 8M Galvanized, 500-feet		No BID
111	Messenger Cable, 8M Galvanized, 1,000-feet		No BID
112	Messenger Cable, 10M Galvanized, 500-feet		No BID
113	Messenger Cable, 10M Galvanized, 1,000-feet		No BID
114	#8 THHN Service Wire, 1,000-feet		No BID
115	#6 Bare (Solid) Wire, 1,000-feet		No BID
116	Junction Box, In-Ground, (Path Master PE-10)		No BID
117	Traffic Bearing Junction Box with Lid		No BID
118	Signal Tether Clamp, 2-parts (Pelco SE-5037 & SE-5038)		15.00
119	Sign Tether Bracket, Pelco SE-5046-19		55.00
120	Sign Tether Bracket, Pelco SE-5046-24		56.00
121	Strand Vise, 3/8", Reliable 5152, No Sustainutes		No BID
122	Strand Vise, 5/16", Reliable 5151, No Sustainutes		No BID
123	Strand Vise, 1/4", Reliable 5150, No Sustainutes		No BID
124	Strand Link, 3/8", Reliable 5002, No Substitutes		No BID
125	Strand Link, 5/16", Reliable 5001, No Substitutes		No BID
126	Strand Link, 1/4", Reliable 5000, No Substitutes		No BID
127	Reducing Strand Link, 3/8" to 5/16", Reliable 5022, No Substitutes		No BID
128	Construction & Mtg. Hdwre. for 4-way adj. signal		198.00
129	Construction & Mtg. Hdwre. for 3-way adj. signal		161.00
130	Construction & Mtg. Hdwre. for 2-way adj. signal		144.00
131	Tri-Bolt Span Wire Assembly		85.00
132	School Sign Assembly		600.00
133	School Sign Assembly with Time of Day Controller/Cabinet		1,350.00
134	Cable Tie, Panduit PLT 3H TL100, per 1,000, No Substitutes		No BID
135	Cable Ring, 2", Copperweld, Min. order = 500		No BID
136	Cable Ring, 3.5", Copperweld, Min. order = 100		No BID
137	Signal Bracket, Mast Arm, Vertical Mount, Cluster Design		235.00
138	Signal Bracket, Mast Arm, Vertical Mount, 12-12-12 Standard Signal		150.00
139	Sign Bracket, Mast Arm, Vertical Mount, 24		105.00

2013 Traffic Signal and Control Equipment Bid Tab

Num	Description	Amount
140	Sign Bracket, Mast Arm, Vertical Mount, 30	100.00
141	Signal Bracket, Mast Arm, Horizontal Mount, 12-12-12 Standard Signal	125.00
142	Signal Bracket, Mast Arm, Free Swinging Mount	105.00
143	Power Supply, Solar Power, 200-watt, 12-VDC	NO BID
144	Iteris Vantage Universal Camera Mounting Bracket	NO BID
145	Mast Arm Mounting Assembly for Video Detection Cameras	160.00
146	Video Detection System (8-Phase) Alternate Item	14,026.00
147	Video Detection System (4-Phase) Alternate Item	6,959.00
148	Video Detection System (2-Phase) Alternate Item	3,765.00
149	Video Detection System (3-Phase) Alternate Item	3,765.00
150	Video Detection Processor Alternate Item	3,450.00
151	Iteris Vantage eAccess Communications Module w/software Alternate Item	2,775.00
152	Video Detection Extension Module Alternate Item	490.00
153	Iteris LAM (Lens Adjustment Module) w/monitor	NO BID
154	Iteris Versa Cam Package, Complete (No Substitutes) Alternate Item	2,000.00
155	Polyphaser Surge Suppression Unit Alternate Item	75.00
156	Iteris Video Detection Color Camera Alternate Item	1,000.00
157	Video Detection/Power Composite Cable, #1	325.00
158	Video Detection/Power Composite Cable, #2	650.00
159	Solar Powered School Speed Limit When Flashing Signal	NO BID
160	Solar Powered School Speed Limit When Flashing Signal, (Pole mount components and span wire mounted signals)	NO BID
161	Solar Powered School Speed Limit When Flashing Signal, (Pole mount components and Mast Arm mounted signals)	NO BID
162	Spread Spectrum Radio (Receiver/Transmitter)	958.00
163	YAGI Antenna with Mounting Hardware	204.00
164	OMNI Antenna with Mounting Hardware	325.00
165	Surge Arrestor	66.00
166	Coaxial Cable (Spread Spectrum Radio), LMR-400, 500-feet	120.00
167	Accessible Pedestrian Detection System (8-directions)	5,000.00
168	Accessible Pedestrian Detection System (4-directions)	2,500.00
169	Navigator Pole Unit Assembly for Accessible Pedestrian Detection System	NO BID
170	Navigator Pole Unit Configurator for Accessible Pedestrian Detection System	NO BID
171	Astro Bracket, PELCO #AS3009	95.00
172	Key, Corbin #2, No Substitutes	2.00
173	Police Panel Key, Long Shank, No Substitutes	2.00

2013 Traffic Signal and Control Equipment Bid Tab		
Num	Description	Amount
174	Manual Operation Police Pushbutton	28.00
175	Adtran DSU III AR Digital Modem (New Unit)	500.00
176	DB-25 to 14-Pin Amp Communications Interface (Completely Assembled)	88.00
177	Patch Cord (Completely Assembled)	25.00
178	2070L Traffic Signal Controller	NO BID
179	1B CPU Module, #1 (for 2070L Controller)	499.00
180	1B CPU Module, #2 (for 2070L Controller)	NO BID
181	2A C1 Field I/O Module (for 2070L Controller)	450.00
182	3B LCD Display Module (for 2070L Controller)	250.00
183	4A Power Supply (for 2070L Controller)	525.00
184	7A Async Serial Communications Module (for 2070L Controller)	400.00
185	2070-6D Fiber-Optic Module (for 2070L Controller)	NO BID
186	Rack Modem for 2070L Controller	1,420.00
187	Solar Powered Crosswalk Lights, Active Beacon	NO BID
188	Solar Powered 24-hour Flashing Beacon	NO BID
189	LED Street Name Sign (See Specifications)	300.00
190	Fiber Termination Cabinet, 332 Base Mount	2,950.00
191	Fiber Termination Cabinet, 336 Pole Mount	2,250.00
192	Tri-Stud Adaptor Kit: One (1) Pelco #SE-0503 and One (1) Pelco #SE-5048	19.00
193	Free Swinging Sign Hanger: 16-Inch CTC, Pelco #SE-5117, No Substitutes	75.00
194	WX-SS-BP-0006 SmartSensor Six Sensor Preassembled Backplate w/AC Power	NO BID
195	WX-SS-BP-0004 SmartSensor Four Sensor Preassembled Backplate w/AC Power	NO BID
196	WX-SS-BP-0002 SmartSensor Two Sensor Preassembled Backplate w/AC Power	NO BID
197	WX-CLK-112, 2 Channel Contact Closure Rack Card (Matrix or Advance)	NO BID
198	WX-CLK-114, 4 Channel Contact Closure Rack Card (Matrix or Advance)	NO BID
199	WX-CLK-200, System Surge Protector (for 1 HD Sensor)	NO BID
200	WX-CLK-202, 24 VDC 2 A Power Supply (Power Supply for 1 or 2 sensors)	NO BID
201	WX-CLK-204, 24 VDC 4 A Power Supply (Power Supply for 3 or 4 sensors)	NO BID
202	WX-CLK-210, Circuit Breaker 0.5 Amp	NO BID
203	WX-CLK-210-02, Circuit Breaker 2.0 Amp	NO BID
204	WX-CLK-222, Two Sensor Surge & Comm Module (Matrix & Advance)	NO BID
205	WX-CLK-223, One Sensor Surge & Comm Module (Matrix or Advance)	NO BID
206	WX-CLK-230, 120 VAC Surge	NO BID
207	WX-CLK-301, Serial to Ethernet converter	NO BID
208	WX-CLK-304, RS 232 to RS 485 converter	NO BID

2013 Traffic Signal and Control Equipment Bid Tab		
Num	Description	Amount
209	WX-SS-200V, SmartSensor Advance Sensor (SS200V)	NO BID
210	WX-SS-225, SmartSensor Matrix Stop Bar Sensor (SS225)	NO BID
211	WX-SS-125, SmartSensor HD Sensor, Dual Radar Side Fire Sensor (SS125)	NO BID
212	WX-SS-611, Heavy Duty Sensor Mount - 6" - 2 axis aluminum bracket	NO BID
213	WX-SS-710, In Line Terminal strip junction box	NO BID
214	WX-SS-704-020, SmartSensor Power/Comm. Cable w/ Connector - 20 feet	NO BID
215	WX-SS-704-040, SmartSensor Power/Comm. Cable w/ Connector - 40 feet	NO BID
216	WX-SS-704-080, SmartSensor Power/Comm. Cable w/ Connector - 80 feet	NO BID
217	WX-SS-705-500, Bulk Cable Spool 500'	NO BID
218	WX-SS-701-020, SmartSensor Power/Comm. Cable w/ Connector - 20 feet	NO BID
219	WX-SS-701-040, SmartSensor Power/Comm. Cable w/ Connector - 40 feet	NO BID
220	WX-100-0064, Din Rail 9"	NO BID
221	WX-100-0065, Din Rail 12"	NO BID
222	WX-100-0277, T-Bus Connector (Gray, Power only)	NO BID
223	WX-100-0281, RS-485/USB Mini-Converter	NO BID
224	WX-205-0000, T-Bus Connector (Green, Power & Comm)	NO BID
225	WX-228-0020, T-Bus Left End Right Angle	NO BID
226	WX-310-0014, RJ-11, White, 60 inch Patch Cord	NO BID
227	EGMOD-0-00-04-025X, BlueTOAD, with 25' cable, (see specifications)	NO BID
228	EGMOD-0-00-04-025A, BlueTOAD, with 25' cable, (see specifications)	NO BID
229	EGMOD-0-00-04-050A, BlueTOAD, with 50' cable, (see specifications)	NO BID
230	EGMOD-0-00-04-075A, BlueTOAD, with 75' cable, (see specifications)	NO BID
231	EGMOD-0-00-04-100A, BlueTOAD, with 100' cable, (see specifications)	NO BID
232	ECMOD-1-30-04-002X-0-0-0, Blue TOAD (see specifications)	NO BID
233	MIMOD-2-00-06-000M-0-0-0, Mini-BlueTOAD non-real time detector	NO BID
234	Post-processing for 1 year for 1 device	NO BID
235	UPS Battery Backup System for Traffic Signal Controller Cabinet	NO BID
236	UPS Battery Backup System	3,900.00
237	Automatic Power Transfer Switch	469.00
238	Microwave Intersector Presence Sensor MS SEDCO TC-CK-SBE	NO BID
239	Microwave Intersector cabinet interface card MS SEDCO TCIB-4.2	NO BID
240	Microwave Intersector install kit MS SEDCO	NO BID
241	2070L Traffic Signal Controller without Software:	1850.00
242	Surge Panel (Camera): Emerson Network Power Model IPP-105, No Substitutes	NO BID
243	EN2 - EZ Communicator Navigator 2-wire Push Button Station	NO BID

2013 Traffic Signal and Control Equipment Bid Tab		
244	2-wire Navigator Control Unit	No BID
245	Navigator Programmer/Configurator 2-wire/4-wire	No BID
246	LED Light Strip for Illuminated Street Name Sign (Southern MFG.)	175.00
247	Power Supply for Illuminated Street Name Sign (Southern MFG.)	100.00
248	Photocontrol for Illuminated Street Name Sign (Southern MFG.)	65.00
249	LED Dual Red Vehicle Signal, Horizontal Mount w/Mtg. Hrdwre. and Backplate	655.00
250	LED Dual Red Vehicle Signal, Horizontal Mount w/Mtg. Hrdwre.	500.00
251	Ruggedcom Switch: Model #RS900G-HI-P-2SC10-XX (No Substitutes) <i>Alternate Item</i>	849.00
252	Rack Modem: GDI Model #FDM170-1-2-0 (No Substitutes)	1,420.00

2013 Traffic Signal and Control Equipment

Bid Invitation #111-2013 Bids 09-17-2013

Items Quoted Alternate to Specification:

Reference Items # 6-9: We are quoting the Control RocketLinx ES8510-XT Managed Industrial Ethernet Switch Brand equal to the Ruggedcom RS900 Ethernet switch. See attached Cut Sheet

Reference # 39: ICC Signals are no longer made. We are quoting McCain Signal Housings. See attached cut sheet.

Reference # 103 & 104: We have a minimum order quantity of 10,000' per order.

Reference # 106 - 109: We have a minimum order quantity of 5,000' per order.

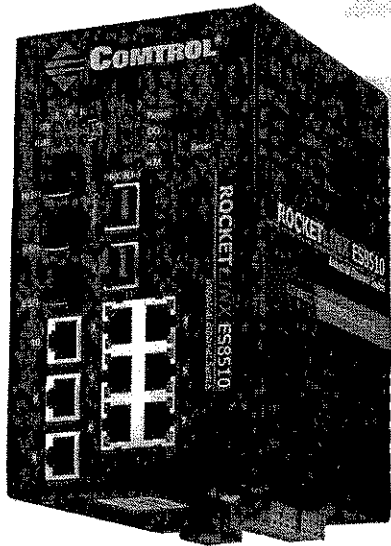
Reference # 146-152, 154-156: We are quoting Traffcon Camera, Processors, and Extension modules as equal to the Iteris. See attached Cut Sheets. *Trafficam in place of VersaCam*
Quoted Trafficam price is based off of one approach.

Reference # 251: We are quoting the Control RocketLinx ES8510-XT Managed Industrial Ethernet Switch Brand equal to the Ruggedcom RS900 Ethernet switch. See attached Cut Sheet



RocketLinx™ ES8510-XTE

Part Number: 32062-3



ETHERNET SWITCH

KEY FEATURES AND BENEFITS ::

- Seven 10/100BASE-TX ports and three RJ45/SFP combo (10/100BASE-TX, 100BASE-FX)
- Enhanced redundancy featuring multiple redundant ring technology (recovery time <5ms)
- Non-blocking switching, 8K MAC address table, 32 Gbps switch fabric
- VLAN, GVRP, QoS, IGMP snooping V1/V2/V3, rate control, port trunking, LACP, online multi-port mirroring
- Management via console CLI, Web, SNMP V1/V2c/V3, RMON, HTTPS, SSH and NetVision
- Advanced security feature supports IP security, port security, DHCP server, IP and MAC binding, IEEE 802.1x network access control
- Event notification by e-mail, SNMP trap, syslog, digital input and relay output
- Rigid aluminum IP31 housing, excellent heat dispersion, redundant power, DIN rail/wall mount installation
- -40° to +74°C operating temperature for extreme environments
- NEMA TS2 Compliant
- IPv6 support

PRODUCT DESCRIPTION ::

The RocketLinx ES8510-XTE is a managed Industrial Ethernet Switch, equipped with seven 10/100BASE-TX ports and three RJ45/SFP combo (10/100BASE-TX, 100BASE-FX) ports. The three combo ports offer flexibility for additional fiber connections by plugging in different types of SFP modules, which can support distances of 2KM in Multi-Mode or 120KM in Single-Mode. The combo ports make port combination even easier, such as eight RJ ports and two fiber ports, or nine RJ ports and one fiber port.

The RocketLinx ES8510-XTE is housed in a rugged aluminum enclosure that features an excellent heat dispersing mechanical design and wide operating temperature support. The embedded software supports full Layer 2 management features, multi-form ring redundancy, network control, monitoring, security and notification. The RocketLinx ES8510-XTE also provides a built-in watchdog timer, digital input and relay output to avoid undetected problems. With industry leading management features and rugged industrial design, the RocketLinx ES8510-XTE provides the perfect foundation for building your industrial Ethernet infrastructure.

Three RJ45/SFP Fast Ethernet Combo Ports for Flexible Network Planning

The RocketLinx ES8510-XTE is designed with three combo Fast Ethernet ports. Each combo port combines one Small Form-Factor Pluggable (SFP) socket for 100Mbps Multi-Mode or Single-Mode SFP transceiver, as well as one RJ45 copper port in 10Mbps full-duplex, 100Mbps half/full-duplex link mode. The switch will automatically detect the priority of cable connections for each combo port. Users are able to connect two 100Mbps SFP ports of the ES8510-XTE for Fast Ethernet fiber redundant ring topologies and the third combo port as a fiber uplink port.

100Mbps SFP

The RocketLinx ES8510-XTE SFP socket supports 100BASE-FX Single/Multi-Mode transceivers. The available distance of the 100BASE-FX ranges from 2KM Multi-Mode to 120KM with Single-Mode modules.



connect. communicate. control.

ROCKETLINX SPECIFICATIONS ::

HARDWARE

Network Interfaces	
10/100BASE-TX, 100BASE-FX	
Connector Types	RJ45, SFP
Enclosure	
IP31 grade aluminum metal case	
Installation Method	DIN rail, wall mount
LED Indicators	
Power 1, Power 2, Ring Master (R.M.), 10/100BASE-TX link/activity, 10/100BASE-TX Full-Duplex/collision, copper/SFP combo link activity, Digital Input 1&2, Digital Output 1&2	
Digital Input (DI)	Two Digital Inputs, 4-Pin screw terminal block
Digital Output	Two Digital Outputs (Dry Relay Output), 4-Pin screw terminal block
Serial Console Port	
One RJ45 RS-232 (TXD, RXD, Signal GND), Baud Rate: 9600bps	
Data Bits	8
Parity	None
Stop Bits	1
Flow Control	None
Dimensions	5.0" x 6.3" x 3.7" 12.7 x 16 x 9.4 cm
Product Weight	2.63 lb 1.19 kg

ETHERNET SPECIFICATIONS

Number of Ports	10
7 standard fast Ethernet and 3 combo RJ45/SFP fast Ethernet	
RJ45	
10/100BASE-TX, auto MDI/MDIX, auto negotiation (speed/duplex mode)	
SFP (Optional)	
100BASE-FX Fiber, auto MDI/MDIX, auto negotiation (speed/duplex mode)	
Cable Types	
Cat 3, Cat 4, Cat 5, Cat 5e (UTP or STP)	
Link Distances	
RJ45: 100 Meters	
SFP: depends on model: Single-Mode: 30KM, Multi-Mode: 2KM	
Port Alarm Relay	Yes
Standards	
IEEE 802.1AB: Link Layer Discovery Protocol (LLDP)	
IEEE 802.1D-2004: Rapid Spanning Tree Protocol (RSTP)	
IEEE802.1p: Class of Service	
IEEE 802.1Q: VLAN Tagging and GVRP	
IEEE 802.1s: Multiple Spanning Tree Protocol (MSTP)	
IEEE 802.1X: Port Based Network Access Control	
IEEE 802.3: 10BASE-T	
IEEE 802.3ab: 100BASE-TX	
IEEE 802.3ad: Link Aggregation Control Protocol (LACP)	
IEEE 802.3x: Flow Control and Back-Pressure	
IEEE 802.3z: Gigabit Ethernet Fiber	
Internet Protocol	
IPv4 and IPv6	

MANAGEMENT FEATURES

Configuration Management	
Out-Band Management: console port with Command Line Interface (CLI) - similar to Cisco CLI, in-band management: NetVision (Windows application), web interface (HTTP/HTTPS) or a Telnet/SSH console with CLI	
Embedded Watchdog	
Embedded hardware watchdog timer automatically resets system if switch system failure occurs	
System Upgrade/Backup	
TFTP/web interface for firmware upgrade and configuration backup/restore	
SNMP	
V1, V2c, V3 with SNMP trap function, up to four trap stations	
SNMP MIB	
MIB-II, Bridge MIB, VLAN MIB, IGMP MIB, Ethernet-like MIB, Control private MIB, and RMON	
Email Warning	
Automatic warning, up to four accounts by pre-defined events	
System Log	
Supports both local mode and server mode	
DHCP	
DHCP client, DHCP server with IP and MAC address binding and DHCP agent	

NETWORK PERFORMANCE

Back Pressure	
IEEE 802.3x: 10/100Mbps Half-Duplex Only	
Class of Service (CoS)	
IEEE 802.1p: 4 priority level (0-7), queue ID (0-3)	
Flow Control Pause Frame	

IEEE 802.3x: 10/100Mbps Full-Duplex

IGMP Snooping

V1/V2/V3 for multicast filtering and IGMP query V1/V2: supports unknown multicasting, processes forwarding policies: drop flooding and forward to router port, 256 IGMP multicast groups

IP Security

Assign authorized IP addresses to specific port, 10 max/port

Time Synchronization

Supports NTP protocol with daylight saving function, and localized time sync function

Port-Based Network Access Control

IEEE 802.1X: Supports user authentication by the RADIUS account, password and key for the RADIUS servers (primary and secondary)

Port Configuration

Port link speed, link mode, port status, enable/disable

Port Mirroring

Online traffic monitoring on multiple selected ports

Port Security

Assign authorized MAC addresses to specific port, 10 max/port

Port Trunk

IEEE 802.3ad LACP with timer and static port trunk; trunk member up to 8 ports and maximum 5 trunk groups

Private VLAN

Direct client ports in isolated/community VLAN to promiscuous port in primary VLAN

Rate Control

Ingress filtering for broadcast, multicast, unknown DA or all packets. Egress filtering for all packet types

Switch Technology

32Gbps switch fabric, store and forward switch technology, 8K MAC address

System Throughput

2.967Mpps

Transfer Packet Size

64 bytes to 1522 bytes (Includes 1522 bytes VLAN tag)

Packet Buffer

1Mbits shared memory

Traffic Prioritization (QoS)

Supports 4 physical queues, weighted Round Robin queuing (WRR 8:4:2:1) and strict priority scheme (IEEE 802.1p COS tag and IPv4 ToS: diffserv information) to prioritize industrial network traffic

VLAN

IEEE 802.1Q: tag VLAN with 256 (Max) VLAN entries, 2K GVRP entries; 3 VLAN link modes (trunk, hybrid, and link access)

Modbus TCP/IP

CLI support for Modbus TCP/IP communications with Function Code 4 (factory automation). Operates as slave/server device, while a typical master/client device is a host computer running appropriate through Ethernet. The Modbus TCP/IP master can read or write to the Modbus registers provided by the Modbus TCP/IP application software (SLADAA / HMI System)

NETWORK REDUNDANCY

Rapid Spanning Tree Protocol

IEEE 802.1D-2004 Rapid Spanning Tree Protocol (RSTP): compatible with legacy STP and IEEE 802.1w

Multiple Spanning Tree Protocol

IEEE 802.1s MSTP: each MSTP instance can include one or more VLANs and supports multiple RSTPs deployed in a VLAN or multiple VLANs

Redundant Ring Technology

Failure Recovery within 5ms

Rapid Dual Homing

Multiple uplink paths to upper switches

Ring Trunking

Integrates port aggregate function in ring path to get higher throughput ring architecture

Multiple Ring

Couple or multiples of up to 16 rings, supports up to 5 fast Ethernet rings/switch

ELECTRICAL SPECIFICATIONS

Device

DC Input Voltage (positive or negative) 10-60 VDC

Current Consumption (24VDC) 01A

Power Consumption (Max) 24W

Number of Power Connectors 1

Power Connector Type 4-Pin screw terminal block

Power Input Redundancy Dual redundant inputs

Reverse Polarity Protection Yes

Digital Input

2 with photo optical isolation

Logic Low (0)

Logic High (1)

Digital Output (Relay Output)

DC Input Voltage

Current Consumption (24VDC)

0 to 10VDC

11 to 30VDC

2

24VDC

1A Maximum

ENVIRONMENTAL SPECIFICATIONS

Air Temperature

System On -40° to 74° C

System Off -40° to 85° C

Operating Humidity

Non-condensing 5% to 95%

MTBF (Mean Time Between Failures) 34.6 years

EXPORT INFORMATION

Packaged Shipping Weight

3.9 lbs

1.77 kg

Package Dimensions

11.3" x 5.5" x 9.1"

28.7 x 13.97 x 23.11 cm

UPC Code

7-56727-32062-3

ECCN

5A992

Schedule B Number

8517.02.0050

REGULATORY APPROVALS

Emissions

Canadian EMC Requirements

ICES-003

European Standard EN55022

EN61000-3-2

CISPR 22

FCC Part 15 Subpart B

Class A limit

Immunity

European Standard EN55024

IEC 1000-4-2/EN61000-4-2: ESD

IEC 1000-4-3/EN61000-4-3: RF

IEC 1000-4-4/EN61000-4-4: Fast Transient/Burst

IEC 1000-4-5/EN61000-4-5: Surge

IEC 1000-4-6/EN61000-4-6: Conducted Disturbance

IEC 1000-4-8/EN61000-4-8: Magnetic Field

IEC 1000-4-11/EN61000-4-11: DIPS and Voltage Variations

Safety

IEC 60950/EN60950 (LISTED)

CSA C22.2 No. 60950/UL60950 Third Edition

Shock

IEC 60068-2-27

Vibration

IEC 60068-2-6

Free Fall

IEC 60068-2-32

Hi-Pot

AC 1.2KV for all ports and power

Regulatory Approvals

European Standard: 2002/95/EC Directive (RoHS2)

NEMA TS2 Certified

Other Regulatory Approvals



RECOMMENDED PRODUCTS ::

32101-9 PS1060, 60 Watts Industrial DIN rail power supply (24V, 60W, DIN rail)

32102-6 PS1100, 100 Watts Industrial DIN rail power supply (24V, 100W, DIN rail)

120003B 24VDC External Power Adapter, Bare Wires (24VDC, 24W, 3-Wire)



Warranty Information

Comtrol offers a 30-day satisfaction guarantee and 5-year limited warranty.

Sales Support

+1.763.957.6000
sales@comtrol.com

Technical Support

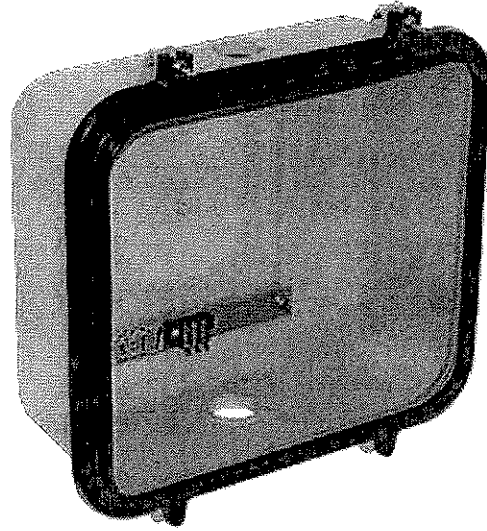
+1.763.957.6000
www.comtrol.com/support

Email, FTP, and Web Support

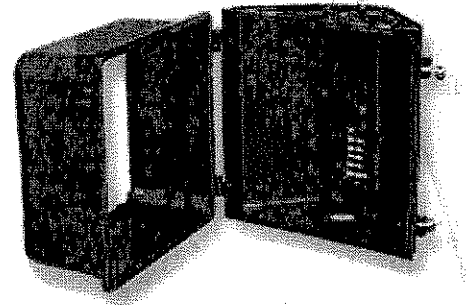
info@comtrol.com
ftp.comtrol.com
www.comtrol.com

Pedestrian Signal Housing

12" Housing
16" Housing
Aluminum
Polycarbonate



16 inch housing
shown in Federal yellow



12 inch housing
shown in black

Cabinets
Controllers
Signals
Signs
Software
Specialty

Overview

McCain's Pedestrian Signal Housings are designed to be used in conjunction with standard or LED pedestrian signal modules to promote pedestrian safety at intersections. McCain housings exceed the Institute of Transportation Engineers (ITE) standards, offering a low maintenance and durable housing in either die cast aluminum or injection molded polycarbonate resin. They are available in 12" or 16" styles, and the 12" housings are available in 1-section or 2-section varieties. The 12" polycarbonate housings are reinforced with a 10 percent fiberglass fill for superior strength and durability unmatched by standard polycarbonate resins. The fiberglass fill is optional on the 16" polycarbonate housings.

Benefits

- 12" or 16" styles
- Rugged aluminum or polycarbonate construction
- Designed for standard symbol or word pedestrian signal modules including LED
- Door-hinge hardware can be removable and reversible or permanently attached
- Highly customizable including a variety of fabrication, mounting, and visor options
- 16" available with *Vantage Visor™* for increased visibility and impact protection

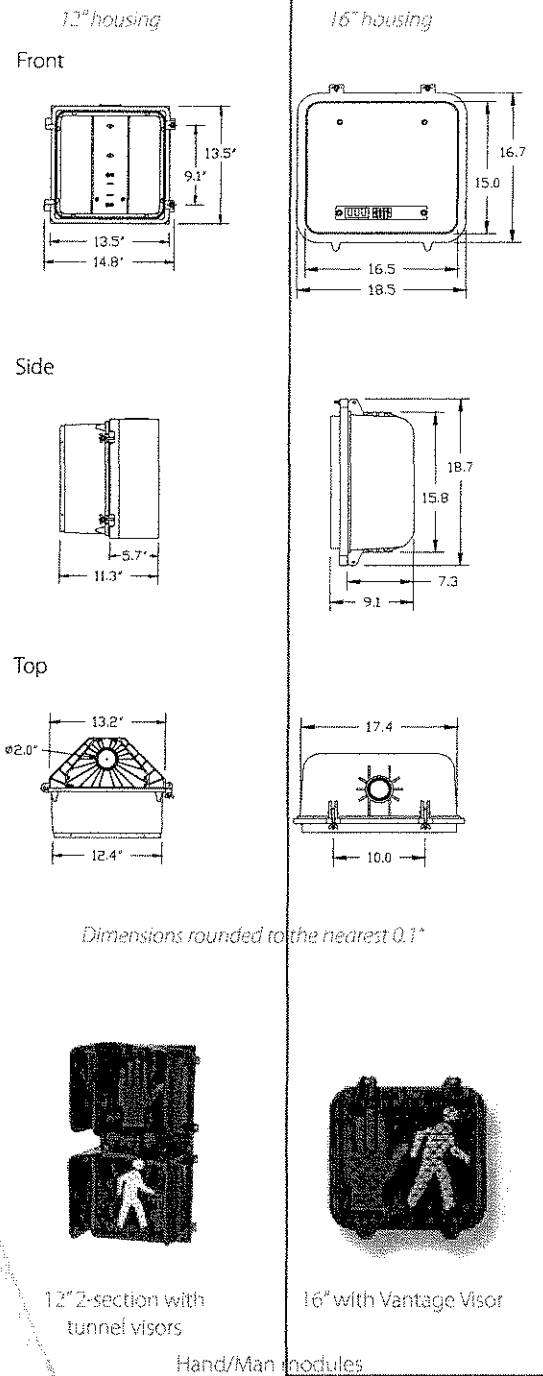
Product Description

The McCain Pedestrian Signal Housing is available in 12" and 16" styles and a variety of configurations including aluminum or polycarbonate construction, with a number of options (see Options for details).

The door is attached with stainless steel detent-type clevis or roll pins and eye bolt/wing nut assemblies. Two equally spaced mounting lugs, integrally cast into the top and bottom of the 16" and the sides of the 12", allow the doors to hinge from either direction. When clevis pins are used, the door and eye bolt assemblies can be removed and rotated without the use of any tools, facilitating maintenance.

All interior mounting locations on the 16" housing are symmetrically positioned, allowing the rotation of components when using the bi-directional McCain Clamshell Mount to mount to the right or left side.

Pedestrian Signal Housing



Standard Features

- Stainless steel hardware includes hinge pins (detent-type clevis or roll) and eye bolt/wing nuts (latch)
- Terminal block with quick-disconnect fittings on one side of each terminal position and screw clamps on the other side

General Specifications

Dimensions*:	12" Housing	16" Housing
Housing:	13.2" H x 13.2" W x 5.7" D	15.8" H x 17.4" W x 7.3" D
Door (incl. tabs):	13.5" H x 15.0" W x 5.6" D	18.7" H x 18.5" W x 1.8" D
Overall:	14.0" H x 15.0" W x 11.3" D	18.7" H x 18.5" W x 9.1" D
Material:	Polycarbonate: Ultraviolet and heat stabilized, flame retardant, permanently colored, 10% fiberglass reinforcement (12" standard, 16" optional) Aluminum: Type 360, reduced corrosion, increased powder coat adhesion	
Finish(es):	Polycarbonate: Colored resins integral to housing Aluminum: Powder coated	
Color(s):	Federal yellow, signal green, black, or custom colors	
Access:	Front door (1), 16": hinged top or bottom 12": hinged left or right	
Latching System:	Eye bolt assemblies	
Mounting:	Standard signal hardware	
Environmental:	Operating temperature: -37°C to +74°C Humidity: 0 to 95% (non-condensing)	
Shipping Weight:	12": Poly 5 lbs, Al 9 lbs 16": Poly 9 lbs, Al 10 lbs	

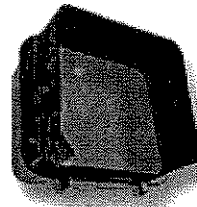
Options

- Polycarbonate 10% fiberglass fill for added durability (optional on 16", standard on 12")
- Modules: LED or incandescent; international Hand/Man symbol, "WALK"/"DON'T WALK" words
- Visors: Vantage Visor (16" only), tunnel, or cap (12" only)
- Clamshell mount (16" only - housing available pre-drilled for mount)
- Custom terminal blocks
- Door hardware permanent (roll pins) or removable (clevis pins)

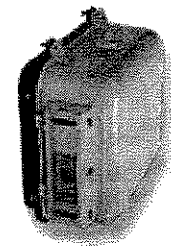
* Dimensions are approximate and vary based on material used



16" Vantage Visor (sold separately)



16" Tunnel visor (sold separately)



16" Clamshell mount (sold separately)

To learn more about McCain's Integrated Traffic Solutions, please contact info@mccain-inc.com or call (760) 727-8100

McCain

2365 OAK RIDGE WAY • VISTA, CALIFORNIA 92081 • USA • WWW.MCCAIN-INC.COM

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VIP Color Camera

2050-102MI



The 2050-102MI color camera assembly is the “eye” of the Traficon “VIP” Video Detection System.

Housed in an extruded aluminum, weatherproof IP68/NEMA-6P enclosure, the 2050-102MI camera provides clear, high resolution video in all weather conditions. Located in the front of the housing, an integrated heater minimizes fogging of the housing window in high humidity areas as well as freezing in cold conditions.

The sunshield extends beyond the front of the housing window to reduce the effects of sunlight & heat and also acts as a diversion for water.

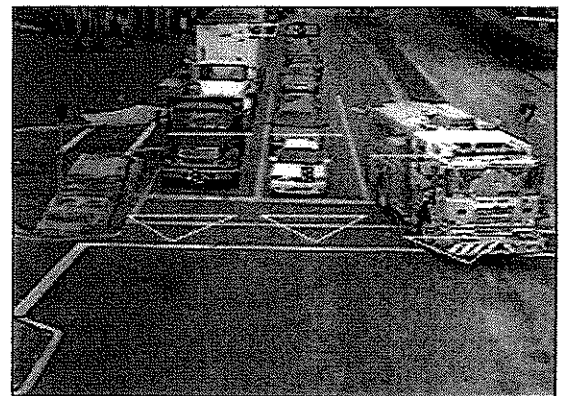
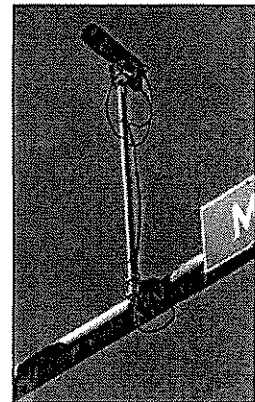
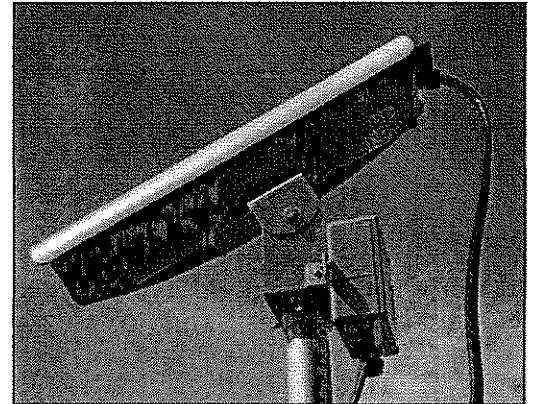
The camera and lens utilize the latest imager chip sets to reduce blooming from vehicle headlights at night.

Advanced features of the camera include the capability to change between color, day/night and monochrome. The camera features “wide dynamic” to aide in difficult lighting area such as underpasses and between buildings. A self-resetting diode on the camera’s power board minimizes system down time due to transients.

The most popular feature of the assembly is the integrated junction box. The junction box ships as a standard option and already contains video, power and zoom/focus lens control wiring. Installers simply run our Siamese cable from the cabinet and terminate the connections inside the junction box.

The entire assembly ships with the housing, camera/lens, pan/tilt bracket, junction box and camera wiring. It attaches to mast arm, luminaire arm or side-of-pole camera mounting brackets.

5 YEAR WARRANTY



VIP Camera Assembly

2050-102MI



Camera Specifications-

Image Sensor:
Interline 1/3" Sony
Super HAD II CCD™

Effective Pixels:
768 (H) X 494 (V)

Horizontal Resolution:
650 TV Lines

Min. Illumination:
0.1 lux

Temperature Range:
-34°C to +60°C, 0 to 100%
relative humidity, NC (with
housing)

Lens Specifications-

Image Format:
1/3"

Focal Length:
Motorized Zoom

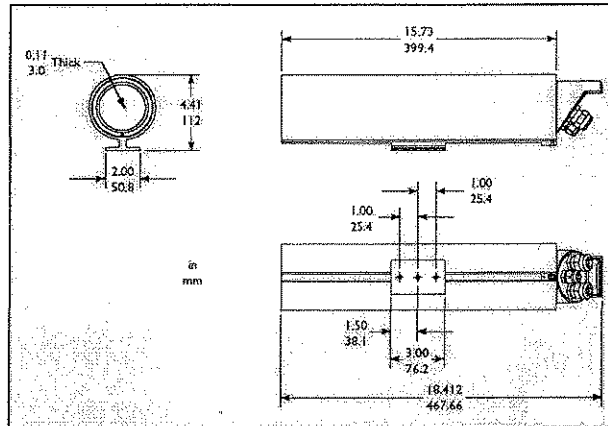
Iris:
F1.4 to 360

Junction Box Specifications-

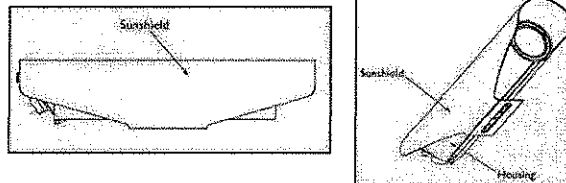
Construction:
Rigid PVC, certified to
NEMA 1, 2, 3, 4, 4x, 6P,
12, 13
UL514B- UL514C

Connections:
Edco surge protector BNC
& 6-conductor, (shipped
with assembly inside the
junction box)

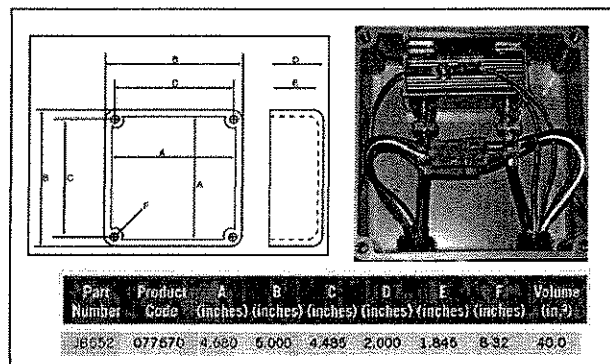
Camera Housing Dimensions



Sunshield



Junction Box Dimensions



Zoom lens control at the cabinet!

When using our standard "Siamese" video & coaxial cable, the camera's motorized zoom lens can be controlled from the convenience and safety of the traffic control cabinet.



Pictured: Siamese Cable & CT Zoom Lens Controller

Housing Specifications-

Construction:
Extruded aluminum housing,
aluminum rear-end cap,
aluminum front cap with
glass faceplate, and aluminum
cradle (6063-T6)

Mounting:
Three (3) 1/4-20 tapped
holes. Cradle may be rotated
through 360°

Window:
0.118" (3 mm) thick glass.
Includes thermostatically-
controller window heater/
defogger

Temperature Range:
-34°C to +60°C, 0 to 100%
relative humidity, non-
condensing

Cable Entry:
Three liquid-tight fittings

Salt Atmosphere:
MIL-STD-810E, Method
509, Procedure I

Enclosure Protection:
IP68, Designed to meet
NEMA-6P

Power:
115 VAC, 50/60 Hz
13 Watts (Includes 4 Watt
Heater)

Sunshield:
Provides protection from the
direct rays of the sun and
promotes cooling to reduce
internal housing tempera-
tures



VIP3D.1 & VIP3D.2 Vehicle Presence & Data Detector VIEWCOM/E Remote Monitoring and Image Storage

The Original 170, NEMA, TS-1 & TS-2 Plug-in Module, 2nd Generation

KEY BENEFITS

VIP3D.1 & VIP3D.2

- Presence detection identical to the field-proven VIP3.1 & 3.2 module
- Data acquisition identical to the field-proven VIP/D module
- Direct plug-in module for Type 170, NEMA TS-1 & TS-2 controller cabinets
- VIP3D.2 is a 2-camera unit.
- 24 outputs and 20 inputs via expansion modules
- System connection via VIEWCOM/E (Ethernet)
- VIP3.x Link Software via serial communication RS232
- Real time video output on module

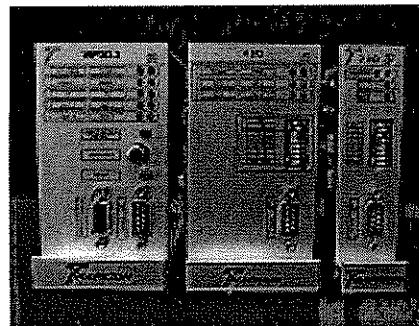
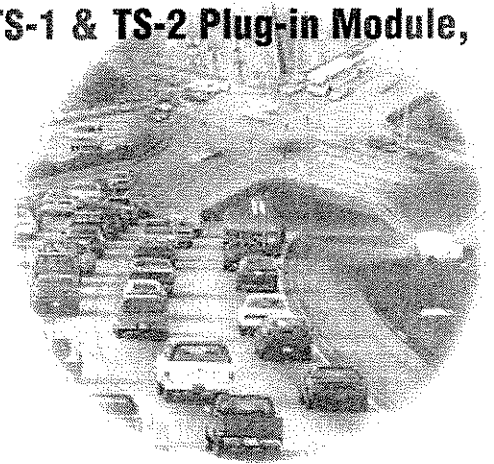
VIEWCOM/E

- Remote monitoring of VIP boards and camera over Ethernet (IP addressable) or serial communication
- Remote set-up or modification of configuration parameters through standard internet browser or graphical PC client software
- Traffic data and event monitoring via standard internet browser
- Pre- and post-incident image storage for review
- Fits into a 170, a NEMA TS-1 and TS-2 input rack

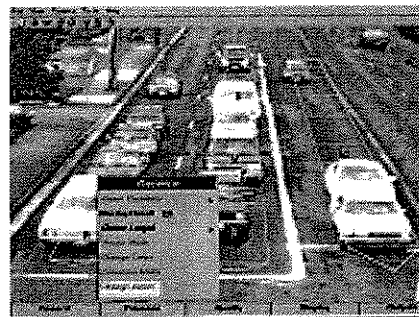
VIP3D.1 & 3D.2

The VIP 3D Video Image Processor provides traffic data and information on the presence of vehicles approaching or waiting at the intersection.

- Vehicle presence
- Traffic data:
 - Counts, Speeds, Classification, Occupancy, Density, Headway, Gap time*
- Alarm events
- Wrong way driver detection
- Queue length
- Turning movement count



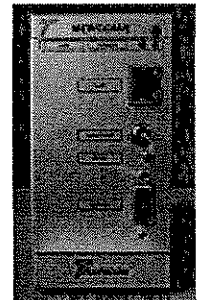
VIP3D.2 and Expansion Modules
(4 I/O and 2 I/O)



Remote image provided by VIEWCOM/E.

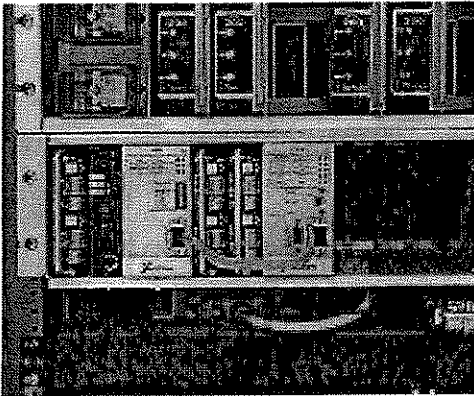
VIEWCOM/E

The VIEWCOM/E provides remote monitoring and the ability to change configurations of the VIP 3D.1 and VIP 3D.2. Directly from the desk, users can monitor traffic data and alarm events, execute a complete set-up or modify detection zones via a standard Web Browser (Ethernet) or via the PC client software.



VIEWCOM/E

- Remote set-up (configuration up/download, firmware upload) of the VIP board
- Remote monitoring of the VIP board
- Pre and post-incident image storage



VIP boards installed in Type 170 and NEMA cabinets.

Dimensions

- TS-2 compatible card rack units

Serial Ports

- RS-232C service ports for setup, data collection & firmware update

Inputs

- Composite video 751Vtt CCIR/EIA
- Power Supply
- Reset & recall button on front panel

Outputs

- Analog video output with overlay of system information data & detection lines
- Auto diagnostic LED indicators
- VIP3D.2 Main board: four optically isolated open-collector outputs
- Expansion modules 2 I/O, 4 I/O & 12 I/O: 2, 4 or 12 digital in/outputs (with dip switches for selection of in/outputs)

Connector

- Double row 22 pins EDGE (NEMA TS-2-1992)

Power Supply & Consumption

- 10.8v to 26.5v DC
- VIP3D.2 with 200mA at 24v
- VIP3D.1 with 160mA at 24v
- 4 I/O with 30mA at 24v

Environmental

- -29°F to +165°F (-34°C to +74°C)
- 0 to 95% relative humidity - non-condensing

VIP3D.1 & VIP3D.2 Vehicle Presence & Data Detector VIEWCOM/E Remote Monitoring and Image Storage

The Original 170, NEMA, TS-1 & TS-2 Plug-in Module, 2nd Generation

VIP3D.1 & VIP3D.2 PRESENCE & DATA DETECTION

- VIP3D.1 monitors one camera. VIP3D.2 monitors two cameras.
- VIP3D.1 provides up to 24 presence detection zones. VIP3D.2 provides up to 20 presence detection zones per camera.
- Each presence zone call can be delayed, extended or combined with an input to inhibit the call.
- Queue length measurements and directional counts on the intersection.
- Combination of outputs and inputs using Boolean functions AND, OR and NOR.
- The VIP3D.1 provides eight data detection zones. The VIP3D.2 provides four data detection zones per camera.
- Detectors: *count, speed, classification, occupancy, density, headway and gap time.*
- Generation of alarm events such as: *speed alarms (four service levels), speed drop, wrong way driver, queue length threshold and quality alarm.*
- Double and single data loop simulation.
- Per zone, detection can be made direction sensitive.
- Single zones can be edited without disturbing the detection.
- Each VIP3D can control up to 24 outputs (four per board and 20 via the I/O extension boards) and 20 inputs (four for each of the five I/O extension boards).
- The VIP3D stores up to four configurations per camera.
- Internal non-volatile memory database.
- The **VIP3D link software** handles
 - Configuration upload and download
 - Data download (database or individual data monitoring)
 - Firmware upload via RS232 port
 - Event download

VIEWCOM/E

- The VIEWCOM/E communicates with multiple VIP3Ds for data, events and image transfer.
- The VIEWCOM/E board is IP addressable and will communicate directly with the server PC over Ethernet (10mbps) or via serial communication (115Kbps direct or dial up).
- JPEG images with enhanced compression intelligence for faster transfer over serial communication.
- Streaming camera images to the server PC (image request, freeze frame for modifying zone layout).
- The streaming video from the VIEWCOM/E can be viewed through a standard Web browser or via the PC client software. (WATTS, VIEWCOM PC Client).
- Possibility to store pre- and post-incident/event image sequences in the module for later review.

Data subject to alteration without notice or obligation.

WESTERN USA: Kar-Gor Inc • 2769 19 th Street, S.E. • Salem, OR 97302 • Phone: 503-315-9899 • E-mail: kargor@aol.com
 TRAFICON USA: 4848 Autumn Glory Way • Chantilly, VA 20151 • Phone: 703-961-9617 • E-mail: traficon@traficonusa.com
 EASTERN USA: Control Technologies Inc • 2776 South Financial Court • Sanford, FL 32773 • Phone: 407-330-2800 • E-mail: cttraffic@aol.com

TrafiCam®

The world's first integrated traffic video detector

TRAFICON INSIDE
ALL IN ONE SENSOR SOLUTIONS

- Intelligent sensor for vehicle presence detection at intersections
- All-in-one sensor: integration of camera and detection
- Field proven video detection technology
- Non-intrusive, above-ground installation
- Direct loop replacement
- Image for precise zone positioning
- Real-time visual verification of detection performance
- Easy installation and configuration
- Aesthetic design

| INSTALLATION |

- Above-ground installation
- Integration of CMOS camera & video detection
- Compact & easy to handle
- Quick & easy installation
- Flexible mounting bracket (full degree of rotation)
- Overhead & side-fire position
- 1 single cable between sensor & interface board for power and communication

Viewing zones - 2 positions

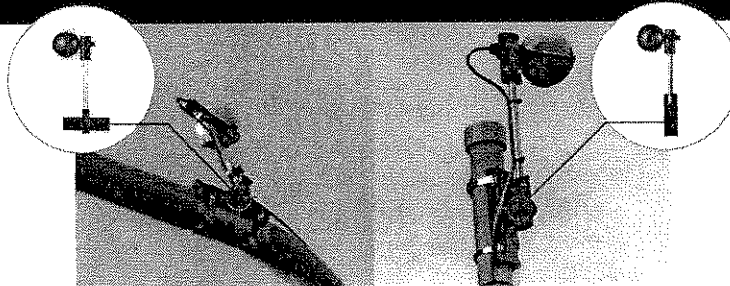


Wide Angle 0 - 70 m / 0 - 80 ft



Narrow Angle 15 - 70 m / 40 - 240 ft

| CONFIGURATION |



Two viewing positions optimize performance of the central processing

- Easy setup via portable PC
- User-friendly setup software
- 8 detection zones (virtual loops)
- 4 detection outputs
- Logical functions (AND/OR)
- Direction sensitive detection zones
- Distinct presence detection over different lanes
- Direct visual verification of detection performance
- Offline configuration on PC

- Around-the-clock detection of stationary and moving vehicles
- Stop bar & advance detection
- Field proven traffic algorithms
- Detection during daytime (on vehicles) & detection at night (on vehicle headlights)
- Advanced filtering (shadows, headlight reflections, unstable camera)
- Fail-safe status

Day



Night

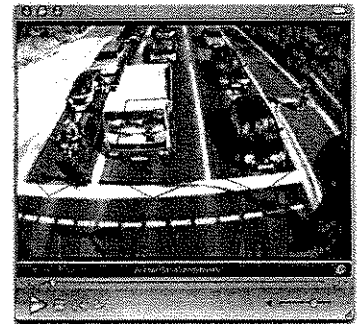


Station



| OPERATION |

- 24/7 operation
- All weather performance, day & night
- Lifetime expectancy of more than 10 years
- Storage of configurations on PC
- Recording & playback function
- Low maintenance cost



Recording & playback function

3 DIN-RAIL MOUNTABLE INTERFACE MODULES

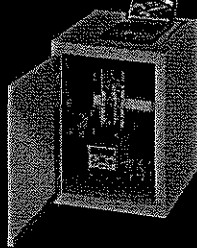
- TI 9 WIRES

- 1 TraficCam
- RS485 connection



- TI1

- 1 TraficCam
- USB connection

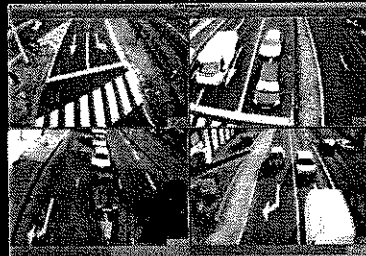


- 4TI

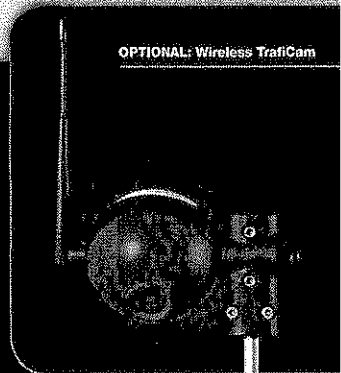
- 1-4 TraficCam sensors
- USB connection



4TI controller: 4 split screen showing 4 different TraficCam stations

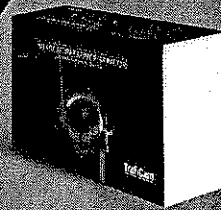


OPTIONAL: Wireless TraficCam



TrafiCam®

Intelligent detection at intersections.



Product kit includes sensor,
interface board, mounting
bracket and software
for setup & recording.

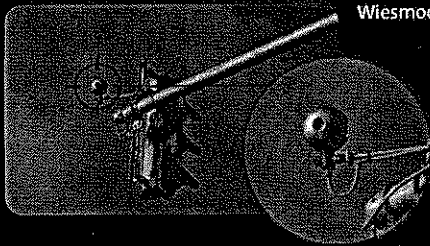
References - Installations



Brussels - BELGIUM



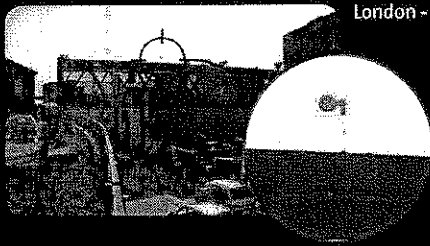
Abu Dhabi - U.A.E.



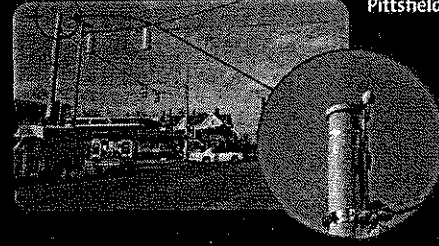
Wiesmoor - GERMANY



Dijon - FRANCE



London - UNITED KINGDOM



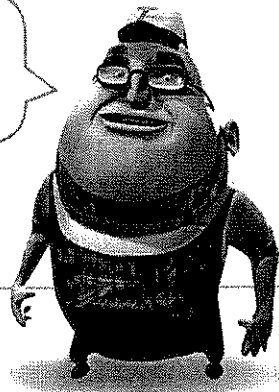
Pittsfield (ME) - U.S.A.

"More information on dedicated website"

www.traficam.com

General info | Technical info | Installation | References | Downloads

Ask me for advice:
eddy@traficam.com



Your contact:



**RISK MANAGEMENT PROVISIONS
INSURANCE AND INDEMNIFICATION**

INDEMNIFICATION AND HOLD HARMLESS PROVISION

- (1) It is understood and agreed by the parties that Vendor hereby assumes the entire responsibility and liability for any and all damages to persons or property caused by or resulting from or arising out of any act or omission on the part of Vendor or its employees, agents, servants, owners, principals, licensees, assigns or subcontractors of any tier (hereinafter "Vendor") under or in connection with this agreement and/or the provision of goods or services and the performance or failure to perform any work required thereby.
- (2) Vendor shall indemnify, save, hold harmless and defend the Lexington-Fayette Urban County Government and its elected and appointed officials, employees, agents, volunteers, and successors in interest (hereinafter "LFUCG") from and against all liability, damages, and losses, including but not limited to, demands, claims, obligations, causes of action, judgments, penalties, fines, liens, costs, expenses, interest, defense costs and reasonable attorney's fees that are in any way incidental to or connected with, or that arise or are alleged to have arisen, directly or indirectly, from or by Vendor's performance or breach of the agreement and/or the provision of goods or services provided that: (a) it is attributable to personal injury, bodily injury, sickness, or death, or to injury to or destruction of property (including the loss of use resulting therefrom), or to or from the negligent acts, errors or omissions or willful misconduct of the Vendor; and (b) not caused solely by the active negligence or willful misconduct of LFUCG.
- (3) In the event LFUCG is alleged to be liable based upon the above, Vendor shall defend such allegations and shall bear all costs, fees and expenses of such defense, including but not limited to, all reasonable attorneys' fees and expenses, court costs, and expert witness fees and expenses, using attorneys approved in writing by LFUCG, which approval shall not be unreasonably withheld.
- (4) These provisions shall in no way be limited by any financial responsibility or insurance requirements, and shall survive the termination of this agreement.

FINANCIAL RESPONSIBILITY

BIDDER/VENDOR understands and agrees that it shall, prior to final acceptance of its bid and the commencement of any work, demonstrate the ability to assure compliance with the above Indemnity provisions and these other risk management provisions.

INSURANCE REQUIREMENTS

YOUR ATTENTION IS DIRECTED TO THE INSURANCE REQUIREMENTS BELOW, AND YOU MAY NEED TO CONFER WITH YOUR INSURANCE AGENTS, BROKERS, OR CARRIERS TO DETERMINE IN ADVANCE OF SUBMISSION OF A RESPONSE THE AVAILABILITY OF THE INSURANCE COVERAGES AND ENDORSEMENTS REQUIRED HEREIN. IF YOU FAIL TO COMPLY WITH THE INSURANCE REQUIREMENTS BELOW, YOU MAY BE DISQUALIFIED FROM AWARD OF THE CONTRACT.

Required Insurance Coverage

Vendor shall procure and maintain for the duration of this contract the following or equivalent insurance policies at no less than the limits shown below and cause its subcontractors to maintain similar insurance with limits acceptable to LFUCG in order to protect LFUCG against

claims for injuries to persons or damages to property which may arise from or in connection with the provision of equipment or goods or the performance of the work or services hereunder by Vendor. The cost of such insurance shall be included in any bid:

<u>Coverage</u>	<u>Limits</u>
General Liability (Insurance Services Office Form CG 00 01)	\$1 million per occurrence, \$2 million aggregate or \$2 million combined single limit
Commercial Automobile Liability (Insurance Services Office Form CA 0001)	combined single, \$1 million per occurrence
Worker's Compensation	Statutory
Employer's Liability	\$500,000.00

The policies above shall contain the following conditions:

- a. All Certificates of Insurance forms used by the insurance carrier shall be properly filed and approved by the Department of Insurance for the Commonwealth of Kentucky. LFUCG shall be named as an additional insured in the General Liability Policy and Commercial Automobile Liability Policy using the Kentucky DOI approved forms.
- b. The General Liability Policy shall be primary to any insurance or self-insurance retained by LFUCG.
- c. The General Liability Policy shall include a Products Liability endorsement unless deemed not to apply by LFUCG.
- d. LFUCG shall be provided at least 30 days advance written notice via certified mail, return receipt requested, in the event any of the required policies are canceled or non-renewed.
- e. Said coverage shall be written by insurers acceptable to LFUCG and shall be in a form acceptable to LFUCG. Insurance placed with insurers with a rating classification of no less than Excellent (A or A-) and a financial size category of no less than VIII, as defined by the most current Best's Key Rating Guide shall be deemed automatically acceptable.

Renewals

After insurance has been approved by LFUCG, evidence of renewal of an expiring policy must be submitted to LFUCG, and may be submitted on a manually signed renewal endorsement form. If the policy or carrier has changed, however, new evidence of coverage must be submitted in accordance with these Insurance Requirements.

Deductibles and Self-Insured Programs

IF YOU INTEND TO SUBMIT A SELF-INSURANCE PLAN IT MUST BE FORWARDED TO LEXINGTON-FAYETTE URBAN COUNTY GOVERNMENT, DIVISION OF RISK MANAGEMENT, 200 EAST MAIN STREET, LEXINGTON, KENTUCKY 40507 NO LATER THAN A MINIMUM OF FIVE (5) WORKING DAYS PRIOR TO THE RESPONSE DATE. Self-insurance programs, deductibles, and self-insured retentions in insurance policies are subject to separate approval by Lexington-Fayette Urban County Government's Division of Risk Management, upon review of evidence of Vendor's financial capacity to respond to claims. Any such programs or retentions must provide LFUCG with at least the same protection from liability and defense of suits as would be afforded by first-dollar insurance coverage. If Vendor satisfies any portion of the

insurance requirements through deductibles, self-insurance programs, or self-insured retentions, Vendor agrees to provide Lexington-Fayette Urban County Government, Division of Risk Management, the following data prior to the final acceptance of bid and the commencement of any work:

- a. Latest audited financial statement, including auditor's notes.
- b. Any records of any self-insured trust fund plan or policy and related accounting statements.
- c. Actuarial funding reports or retained losses.
- d. Risk Management Manual or a description of the self-insurance and risk management program.
- e. A claim loss run summary for the previous five (5) years.
- f. Self-Insured Associations will be considered.

Safety and Loss Control

Vendor shall comply with all applicable federal, state, and local safety standards related to the performance of its works or services under this Agreement and take necessary action to protect the life, health and safety and property of all of its personnel on the job site, the public, and LFUCG.

Verification of Coverage

Vendor agrees to furnish LFUCG with all applicable Certificates of Insurance signed by a person authorized by the insurer to bind coverage on its behalf prior to final award, and if requested, shall provide LFUCG copies of all insurance policies, including all endorsements.

Right to Review, Audit and Inspect

Vendor understands and agrees that LFUCG may review, audit and inspect any and all of its records and operations to insure compliance with these Insurance Requirements.

DEFAULT

Vendor understands and agrees that the failure to comply with any of these insurance, safety, or loss control provisions shall constitute default and that LFUCG may elect at its option any single remedy or penalty or any combination of remedies and penalties, as available, including but not limited to purchasing insurance and charging Vendor for any such insurance premiums purchased, or suspending or terminating the work.

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