

**STAGE LIGHTING FIXTURES AND CABLE
EQUIPMENT PURCHASE AND DELIVERY**

INVITATION TO BID

- ISSUE DATE: September 21, 2018
- BIDS DUE: **2:00 p.m.** on **October 11, 2018** (the "Submission Deadline")
- INSTRUCTIONS: Submit the following documents in a sealed envelope marked "Stage Lighting Bid": A Bid Form; the Certification Regarding Lobbying; and the Certification Regarding Suspension/Disbarment. All three documents must be completed, signed, and received by mail or personal delivery no later than the Submission Deadline. Bids received by email, fax, or after the Submission Deadline will be rejected.
- SUBMIT TO: Houston First Corporation, Attn: Mitch Miskowski, 701 Avenida de las Americas, Suite 200, Houston, TX 77010.
- CONTACT INFO: Any questions concerning this Invitation to Bid must be sent by e-mail to bids@houstonfirst.com no later than **11:00 a.m.** on **October 5, 2018**. Questions will be answered collectively in the form of a Letter of Clarification.
- BID OPENING: All Bids will be opened and publicly announced at 3:00 p.m. on the Submission Deadline at 701 Avenida de las Americas, Suite 200, Houston, TX 77010.

OVERVIEW. Houston First Corporation ("HFC") requests bids from experienced theatrical lighting equipment companies to provide and deliver the stage lighting fixtures and cable set forth in Exhibit "A" of this Invitation to Bid (the "Equipment").

This Invitation to Bid is issued in order to replace pre-existing fixtures and cable at the Wortham Theater Center in Houston, Texas lost due to flood damage caused by Hurricane Harvey on August 27, 2017.

Equipment must be delivered to the Wortham Theater Center no later than 30 calendar days from acceptance of a bid by HFC. Please note that all equipment will be installed by the Wortham Theater Operation Company. The bidder or bidders selected are not responsible for installation or any services other than delivery of the Equipment.

Bidders participating in this solicitation are required to adhere to the procurement standards as referenced in 2 C.F.R. Part 200, Sections 200.317-200.326, and Appendix II, 2 C.F.R. Part 200. Sections 200.317-200.326 and Appendix II.

BACKGROUND. HFC is a local government corporation created by the City of Houston to enhance quality of life, advance economic prosperity, and promote Houston as a premier destination for leisure tourism and major events. HFC is responsible for management and operation of more than ten city-owned buildings and plazas, including the George R. Brown Convention Center, Jones Hall, Wortham Theater, Miller Outdoor Theatre, Talento Bilingue de Houston, and outdoor facilities such as Jones Plaza,

Sesquicentennial Park, Ray C. Fish Plaza, Root Memorial Square, and several other landscaped properties and parking facilities.

Opened in 1987, the iconic Wortham Theater Center is a 437,500-square foot performing arts facility featuring two theaters, the 2,405-seat Alice and George Brown Theater and the 1,100-seat Lillie and Roy Cullen Theater. Wortham Theater Center is home to Houston Ballet and Houston Grand Opera and has welcomed arts groups and patrons from around the world.

PRE-BID CONFERENCE. A pre-bid conference has not been scheduled for the solicitation and HFC does not anticipate that one will be held.

NO SALES TAX. As HFC is exempt from states sales and use tax, bidders should assume that there will be no sales taxes due for the purchase of materials incorporated into the Project.

LETTERS OF CLARIFICATION. Any revisions to this Invitation to Bid, and answers to any material questions timely received, will be confirmed in a letter posted online at www.houstonfirst.com/do-business prior to the Submission Deadline ("Letter of Clarification"). When issued by HFC, Letters of Clarification become part of this Invitation to Bid automatically and supersede any previous specifications or provisions in conflict therewith. By submitting a bid, bidders shall be deemed to have received all Letters of Clarification and to have incorporated them into their bid. It is the responsibility of bidders to monitor the foregoing link and ensure they receive any such Letters of Clarification.

ANTI-LOBBYING CERTIFICATION. Bidders are required to complete and submit The Anti-Lobbying Certification attached hereto as Exhibit "B" with their Bid.

CERTIFICATION REGARDING DEBARMENT/SUSPENSION. Bidders are required to complete and submit the Certification Regarding Disbarment/Suspension attached hereto as Exhibit "C" with their Bid.

FORM OF AGREEMENT. By submitting a response to this solicitation, bidders agree, upon notice of selection by HFC, to enter into the Equipment Purchase and Delivery Agreement attached hereto as Exhibit "D". If a bidder takes exception to any portion of the Agreement, then such bidder must submit a list of such exceptions as part of its response to this solicitation; bidders are advised, however, that HFC shall reject bidders who take any substantive objections without further review or consideration.

SPECIFICATIONS. Specifications pertaining to this Invitation to Bid, developed by Wortham Theater Operating Company, are provided below as Exhibit "E".

MANNER OF SELECTION. HFC expects to enter into a contract with the Bidder providing the lowest responsible bid received; provided, however, that HFC reserves the right to select or reject all or part of any bid, waive minor technicalities, and accept one or more bids in the manner and to the extent that they serve the best interests of HFC, including acceptance of bids by line item or in a reduced quantity. This solicitation does not commit HFC to award a contract, issue a purchase order, or to pay any costs incurred in the preparation of a bid in response to this solicitation. HFC reserves the right to request clarifications or additional information prior to making a selection.

GOOD FAITH DIVERSITY EFFORTS. Pursuant to and in accordance with 2 C.F.R. § 200.321(b), Bidders who intend to subcontract any portion of the work covered by the resulting contract must take all necessary affirmative steps to assure that small and minority businesses, women's business enterprises and labor surplus area firms are solicited and used when possible. Affirmative steps must include:

- a. Placing qualified small and minority businesses and women's business enterprises on solicitation lists;

- b. Assuring that small and minority businesses, and women's business enterprises are solicited whenever they are potential sources;
- c. Dividing total requirements, when economically feasible, into smaller tasks or quantities to permit maximum participation by small and minority businesses, and women's business enterprises;
- d. Establishing delivery schedules, where the requirement permits, which encourage participation by small and minority businesses, and women's business enterprises; and
- e. Using the services and assistance, as appropriate, of such organizations as the Small Business Administration and the Minority Business Development Agency of the Department of Commerce.

RESTRICTIONS ON COMMUNICATIONS. Bidders are directed not to communicate with any employee, officer, or director of HFC or the Wortham Theater Operating Company regarding any matter relating to this solicitation, other than through bids@houstonfirst.com. HFC reserves the right to reject any bid due to violation of this provision.

VENDOR CODE OF CONDUCT. Bidders who do business or seek to do business with HFC are expected to interact with HFC with high ethics and integrity. To promote ethical conduct by its existing and potential contractors, HFC has adopted a Code of Conduct for Vendors, which is available online at www.houstonfirst.com/do-business. HFC requires that all Bidders be familiar with and abide by the Code of Conduct for Vendors.

COLLUSION. Bidders represent that the contents of their bids have not been communicated, directly or indirectly, to any potential Bidder and that their bids are made in compliance with federal and state antitrust laws without previous understanding, agreement or connection with any competitor or other potential Bidder.

PUBLIC INFORMATION. HFC is subject to the Texas Public Information Act ("TPIA"). Information submitted by bidders is subject to release under the provisions of the TPIA set forth in Chapter 552 of the Texas Government Code. Each page where confidential or proprietary information appears must be labeled as such clearly and unambiguously. Bidders will be advised of any request for public information that implicates their materials that have been marked "confidential and proprietary" in accordance with the foregoing, and may, in accordance with applicable law, elect to assert objections to disclosure with the Texas Attorney General at their cost and expense.

CONFLICTS OF INTEREST. Bidders are advised that they have an obligation to disclose any affiliation or business relationship that might cause a conflict of interest with HFC. Bidders who need the disclosure form may find it online at: <http://www.ethics.state.tx.us/forms/CIQ.pdf>. By submitting a bid, Bidders represent that they are in compliance with the requirements of Chapter 176 of the Texas Local Government Code.

WITHDRAWAL; ERROR. Bids may be withdrawn due to errors or for any other reason only by a written request received by bids@houstonfirst.com prior to the Submission Deadline.

BID PACKAGES. A complete copy of this Invitation to Bid, including and all necessary forms and information, is available on-line at www.houstonfirst.com/Do-Business.

EXHIBIT "A"
BID FORM

Bidders are asked to provide their pricing for the equipment itemized below, based on the terms of this Invitation to Bid, including but not limited to the Equipment Purchase and Delivery Agreement. Do not alter the Bid Form. Submission of company quotes, proposals, or any other document containing supplementary, alternative, or conflicting terms or conditions is not acceptable.

| Item | Equipment Description | Quantity | Price (for total quantity stated) |
|---------------|----------------------------------------------------------|-----------------|---------------------------------------------|
| 1 | LED Footlight Fixture | 20 | \$ |
| 2 | LED Fresnel Fixture | 60 | \$ |
| 3 | LED Ellipsoidal Fixture | 40 | \$ |
| 4 | ParCan Wash Fixture | 48 | \$ |
| 5 | 35 ft x 6 Circuit Multi-Conductor Cable Assembly | 2 | \$ |
| 6 | 50 ft x 6 Circuit Multi-Conductor Cable Assembly | 2 | \$ |
| 7 | 100 ft x 6 Circuit Multi-Conductor Cable Assembly | 2 | \$ |
| 8 | 6 ft x 6 Circuit Male L6-20 Locking Break-In Assembly | 5 | \$ |
| 9 | 6 ft x 6 Circuit Female L6-20 Locking Break-Out Assembly | 5 | \$ |
| 10 | Castered Cube Truck | 4 | \$ |
| Total: | | | \$ |

BIDDER INFORMATION

Bidder Name: _____

Address: _____

Contact Name/Title: _____

Phone: _____ Email: _____

Is the Bidder a certified diversity entity under the [HFC Diversity Program](#)? _____

BID TERMS AND ACKNOWLEDGEMENT.

Submission of a bid represents an offer to contract with Houston First Corporation that shall remain valid for a period of 60 calendar days from the Submission Deadline. By signing below, Bidder represents that all statements made herein are true and correct and may be relied upon by Houston First Corporation.

_____ ("Bidder")

By:

Signature: _____

Date: _____

Name/Title: _____

EXHIBIT “B”
ANTI-LOBBYING CERTIFICATION

The undersigned bidder certifies, to the best of his or her knowledge, that:

- (1) No Federal appropriated funds appropriated funds have been paid or will be paid, by or on behalf of the undersigned bidder, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any City agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement
- (2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned bidder shall complete and submit Standard Form-LLL, “Disclosure Form to Report Lobbying,” in accordance with its instructions.
- (3) The undersigned bidder shall require that the language of this certification be included in the award documents for all sub-awards at all tiers (including subcontracts, sub-grants, and contracts under grants, loans, and cooperative agreements) and that all sub-recipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into.

Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 31 USC § 1352 (as amended by the Lobbying Disclosure Act of 1995). Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

The undersigned bidder certifies or affirms the truthfulness and accuracy of each statement of its certification and disclosure, if any. In addition, the undersigned bidder understands and agrees that the provisions of 31 USC § 3801 *et seq.*, apply to this certification and disclosure, if any.

Legal Name of Bidder: _____

By:

Signature: _____

Date: _____

Name/Title of Authorized Representative: _____

EXHIBIT “C”
CERTIFICATION REGARDING DEBARMENT/SUSPENSION

The undersigned bidder acknowledges that this Agreement is a covered transaction for purposes of 2 C.F.R. pt. 180 and 2 C.F.R. pt. 3000. As such, bidder is required to verify that none of the bidder, its principals (defined at 2 C.F.R. § 180.995), or its affiliates (defined at 2 C.F.R. § 180.905) are excluded (defined at 2 C.F.R. § 180.940) or disqualified (defined at 2 C.F.R. § 180.935).

Bidder must comply with 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C and must include a requirement to comply with these regulations in any lower tier covered transaction it enters into in connection with this Agreement.

This certification is a material representation of fact that may be relied upon by Houston First Corporation, the City of Houston, the State of Texas, and the Federal Government (including any department, agency or division thereof). If it is later determined that bidder did not comply with 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C, then, in addition to remedies available to such parties, the Federal Government may pursue available remedies, including but not limited to suspension and/or debarment.

Bidder agrees to comply with the requirements of 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C throughout the period of the Agreement and further agrees to include a provision requiring such compliance in its lower tier covered transactions, including but not limited to offers from bidders or proposers, to require their agreement to comply with 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C while their offer is valid and throughout the period of any contract that may arise from their offer or proposal.

Certification

Bidder certifies, by submission of its bid, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.

Where the bidder is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation with its bid. The bidder shall provide immediate written notice to the person to which this bid is submitted if at any time the bidder learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

The bidder agrees by submitting this bid that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person or entity who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction.

Legal Name of Bidder: _____

By:

Signature: _____

Date: _____

Name/Title of Authorized Representative: _____

EXHIBIT “D”
EQUIPMENT PURCHASE AND DELIVERY AGREEMENT

This Equipment Purchase and Delivery Agreement (“Agreement”) is made by and between Houston First Corporation (“HFC”), whose address is 701 Avenida de las Americas, Suite 200, Houston, TX 77010 and [TBD] (“Contractor”), whose address is [TBD]. In consideration of the mutual promises contained herein, the parties hereby agree as follows:

ARTICLE 1: EQUIPMENT & DELIVERY

1.1 Contractor agrees to and shall provide and deliver the equipment set forth in Exhibit “[TBD]” attached hereto and made a part hereof for all purposes (collectively, the “Equipment”) no later than **30 calendar days from the Effective Date** to the following address: 501 Texas Ave, Houston, TX 77002.

1.2 Without limiting the foregoing, Contractor shall coordinate the schedule of delivery of the Equipment with HFC, and ensure that delivery of the Equipment is made during normal business hours. Contractor shall provide any equipment, labor, packaging, crating or padding necessary to load, tie down and unload the Equipment to be delivered, so that the Equipment may be transported in a normal, safe manner without damage. Contractor acknowledges that time is of the essence.

1.3 HFC reserves the right to inspect the Equipment prior to acceptance and/or payment. Equipment which, in the opinion of HFC, does not conform to HFC’s specifications or are determined to be damaged or defective may be rejected at no cost to HFC. Amounts due Contractor under this Agreement for such rejected goods shall abate or, at the discretion of HFC, Contractor shall promptly replace rejected Equipment, at its risk and expense.

1.4 Title and risk of loss of the Equipment shall remain with Contractor until goods have been delivered to HFC at the location specified in this Agreement and accepted by HFC. Contractor is responsible for any freight charges incurred in so delivering the goods to HFC.

1.5 HFC is exempt from sales tax and certain federal excise taxes and agrees to furnish Contractor with an exemption certificate upon request. Contractor shall not charge HFC for such taxes. Contractor shall take all action required to cause the purchase of the Equipment hereunder to be treated as a tax-exempt transaction, and in no event shall HFC be responsible for any sales, use, property, gross receipts, or similar taxes levied against any party to this Agreement.

ARTICLE 2: PAYMENT

2.1 Subject to the terms of this Agreement, HFC agrees to pay Contractor [TBD], due and payable in arrears, unless otherwise agreed to in writing between the parties.

2.2 Payments are conditioned on prior receipt by HFC of a written invoice and W-9 from Contractor

2.3 If any item in any invoice is disputed by HFC for any reason, then HFC shall temporarily delete the disputed item and pay Contractor the remaining amount of the invoice; provided, however, that HFC shall promptly notify Contractor of the dispute and request clarification and/or remedial action. After any dispute shall have been settled, Contractor shall include the disputed amount on a subsequent regularly scheduled invoice or on a special invoice for the disputed item only.

ARTICLE 3: WARRANTIES

3.1 Contractor represents and warrants to HFC that the Equipment, including each component part thereof, shall be (i) fit for the intended purposes indicated by HFC expressly or by implication; (ii) free of defects in title, design, material, and workmanship, (iii) new, and of satisfactory quality; and (iv) in conformity with industry standards and the requirements of this Agreement.

3.2 Equipment not conforming to the requirements of this Section shall be deemed defective and shall be repaired or replaced by Contractor (at HFC’s sole option) at no cost to HFC. If required by HFC, Contractor shall furnish satisfactory evidence as to the kind and quality of replacement materials and equipment.

3.3 If, within the period of the manufacturer's warranty, any of the Equipment is found to be not in accordance with the requirements of the Agreement, then Contractor shall correct same within 30 calendar days after receipt of written notice from HFC to do so and at no cost to HFC.

3.4 Contractor hereby transfers and assigns to HFC all manufacturer's warranties for materials used in connection with the Equipment and shall complete and execute all forms required to further evidence such transfer and assignment. The parties agree that no warranty made by Contractor is intended to limit, nor shall it be construed as limiting in any manner or to any extent, any manufacturer's or supplier's warranty. Upon request from HFC, Contractor agrees to provide reasonable assistance in enforcing such warranties against the manufacturer or supplier at no additional cost to HFC.

3.5 Warranty periods shall commence upon the date of delivery of the Equipment. Without limiting any of the foregoing, Contractor shall provide HFC and its designee a toll-free 24-hour-per-day number for telephone technical support and service requests.

ARTICLE 4: DEFAULT AND TERMINATION

4.1 Either party may terminate this Agreement for cause if the other party defaults and fails to cure the default after receiving notice thereof. Default occurs if a party fails to perform one or more of its material duties under this Agreement. If a default occurs, then the injured party shall deliver a written notice to the defaulting party describing the default and the proposed termination date. The date must be at least five calendar days after receipt of the notice. The injured party, at its sole option, may extend the proposed termination date to a later date. If the defaulting party cures the default before the proposed termination date, then the proposed termination is ineffective. If the defaulting party does not cure the default before the proposed termination date, then the injured party may terminate this Agreement on the termination date.

4.2 HFC may terminate this Agreement at any time by giving written notice to Contractor. HFC's right to terminate for convenience is cumulative of all rights and remedies, which exist now or in the future. On receiving such notice, Contractor shall, unless the notice directs otherwise, immediately discontinue all deliveries under the Agreement and cancel all existing orders and subcontracts that are chargeable to the Agreement. As soon as practicable after receiving the termination notice, Contractor shall submit an invoice showing in detail the Equipment delivered up to the termination date.

4.3 TERMINATION OF THIS AGREEMENT AND RECEIPT OF PAYMENT FOR EQUIPMENT RECEIVED ARE CONTRACTOR'S EXCLUSIVE REMEDIES FOR TERMINATION FOR CONVENIENCE BY HFC, WHICH DOES NOT CONSTITUTE A DEFAULT OR BREACH OF THIS AGREEMENT. CONTRACTOR WAIVES ANY CLAIM (OTHER THAN ITS CLAIM FOR PAYMENT FOR EQUIPMENT DELIVERED), IT MAY HAVE NOW OR IN THE FUTURE FOR FINANCIAL LOSSES OR OTHER DAMAGES RESULTING FROM HFC'S TERMINATION FOR CONVENIENCE.

ARTICLE 5: REQUIRED CONTRACT CLAUSES

5.1. Equal Employment Opportunity. During the performance of this Agreement, Contractor agrees as follows:

- (1) Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. Contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, or national origin. Such action shall include, but not be limited to the following: Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.
- (2) Contractor will, in all solicitations or advertisements for employees placed by or on behalf of Contractor, state that all qualified applicants will receive considerations for employment without regard to race, color, religion, sex, or national origin.
- (3) Contractor will send to each labor union or representative of workers with which he has a collective

bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers' representatives of Contractor's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

- (4) Contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.
- (5) Contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the administering agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.
- (6) In the event of Contractor's noncompliance with the nondiscrimination clauses of this Agreement or with any of the said rules, regulations, or orders, this Agreement may be canceled, terminated, or suspended in whole or in part and Contractor may be declared ineligible for further Government contracts or federally assisted construction contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions as may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.
- (7) Contractor will include the portion of the sentence immediately preceding paragraph (1) and the provisions of paragraphs (1) through (7) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. Contractor will take such action with respect to any subcontract or purchase order as the administering agency may direct as a means of enforcing such provisions, including sanctions for noncompliance: Provided, however, that in the event a contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the administering agency the contractor may request the United States to enter into such litigation to protect the interests of the United States.

5.2. Contract Work Hours and Safety Standards Act. Contractor shall comply with the Contract Work Hours and Safety Standards Act, 40 U.S.C. sections 3702 and 3704, as supplemented by Department of Labor regulations (29 CFR part 5), including all of the following requirements:

- (1) Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.
- (2) Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in this section, Contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such Contractor and subcontractor shall be liable to the United States for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in this section, in the sum of \$25 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (1) of this section.
- (3) Withholding for unpaid wages and liquidated damages. HFC shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the Contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in this section.
- (4) Subcontracts. Contractor and its subcontractors shall insert in any subcontracts the clauses set forth in this section and also a clause requiring the subcontractors to include these clauses in any lower tier

subcontracts. Contractor, as prime contractor, shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in this section.

5.3. Clean Air Act. Contractor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act, as amended, 42 U.S.C. § 7401 et seq. Contractor agrees to report each violation to HFC and understands and agrees that HFC will, in turn, report each violation as required to assure notification to the Texas Division of Emergency Management, FEMA, and the appropriate regional office of the Environmental Protection Agency. Contractor agrees to include these requirements in each subcontract exceeding \$150,000.

5.4. Federal Water Pollution Control Act. Contractor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Federal Water Pollution Control Act, as amended, 33 U.S.C. 1251 et seq. Contractor shall report all violations to HFC, and understands and agrees that HFC will, in turn, report each violation as required to assure notification to the Texas Division of Emergency Management, FEMA, and the appropriate regional office of the Environmental Protection Agency. Contractor agrees to include these requirements in each subcontract exceeding \$150,000.

5.5 Suspension and Debarment. Contractor acknowledges that this Agreement is a covered transaction for purposes of 2 C.F.R. pt. 180 and 2 C.F.R. pt. 3000. As such, Contractor is required to verify that none of the contractor, its principals (defined at 2 C.F.R. § 180.995), or its affiliates (defined at 2 C.F.R. § 180.905) are excluded (defined at 2 C.F.R. § 180.940) or disqualified (defined at 2 C.F.R. § 180.935). Contractor must comply with 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C and must include a requirement to comply with these regulations in any lower tier covered transaction it enters into so as to verify that none of any such contractor, its principals (defined at 2 C.F.R. § 180.995), or its affiliates (defined at 2 C.F.R. § 180.905) are excluded (defined at 2 C.F.R. § 180.940) or disqualified (defined at 2 C.F.R. § 180.935). Such certifications are a material representation of fact relied upon by HFC. If it is later determined that Contractor did not comply with 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C, then in addition to remedies available to HFC, the City of Houston, and the State of Texas, and the Federal Government (including any department, agency or division thereof) may pursue available remedies, including but not limited to suspension and/or debarment. Contractor agrees to comply with the requirements of 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C throughout the period of the Agreement. Contractor further agrees to include a provision requiring such compliance in its lower tier covered transactions, including but not limited to offers from bidders or proposers, to require their agreement to comply with 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C while their offer is valid and throughout the period of any contract that may arise from their offer or proposal.

5.6 Byrd Anti-Lobbying Amendment. Contractor and its contractors of any tier who apply or bid for an award of \$100,000 or more shall file the required certification in accordance with 31 U.S.C. §1352 (as amended). Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, officer or employee of Congress, or an employee of a member of Congress in connection with obtaining any Federal contract, grant, or any other award covered by 31 U.S.C. § 1352. Each tier shall also disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award. Contractor shall promptly forward each such disclosure from tier to tier up to HFC.

5.7 Certification Regarding Lobbying. Contractor shall cause each of its contractors of any tier to complete and submit the following certification regarding lobbying (See Appendix A, 44 C.F.R. Part 18) with each bid or offer exceeding \$100,000:

[Name of contractor], the undersigned, certifies, to the best of his or her knowledge, that:

1. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of this agreement or any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

2. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this

agreement or any Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form- LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

3. The undersigned shall require that the language of this certification be included in the award documents for all sub-awards at all tiers (including subcontracts, sub-grants, and contracts under grants, loans, and cooperative agreements) and that all sub-recipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31, U.S.C. § 1352 (as amended by the Lobbying Disclosure Act of 1995). Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

[Name of contractor] certifies or affirms the truthfulness and accuracy of each statement of its certification and disclosure, if any. In addition, the Contractor understands and agrees that the provisions of 31 U.S.C. § 3801 *et seq.*, apply to this certification and disclosure, if any.

Signature of Authorized Official

Date

Name/Title of Authorized Official

5.8. Procurement of Recovered Materials. In the performance of this Agreement, Contractor shall make maximum use of products containing recovered materials that are Environmental Protection Agency ("EPA")-designated items, unless the product cannot be acquired competitively within a timeframe providing for compliance with the contract performance schedule; meeting contract performance requirements; or at a reasonable price. Information about this requirement, along with the list of EPA-designate items, is available online at the EPA's Comprehensive Procurement Guidelines site, <https://www.epa.gov/smm/comprehensive-procurement-guideline-cpg-program>.

5.9 Changes. This Agreement may not be changed or altered except in the form of a written amendment signed by authorized representatives of Contractor and HFC. Any such amendment requiring payment of additional fees shall include a defined scope of services and a detailed description of the specific methodology used to determine the additional fees, which Contractor agrees shall be reasonable and calculated in good faith in a manner substantially similar to the method used to determine the fee under this Agreement.

5.10 Access to Records. Contractor grants HFC, FEMA, the Texas Department of Emergency Management, and the Comptroller General of the United States, including any of their authorized representatives, access and the right to examine and review Contractor's books, documents, papers, and records that are directly pertinent to this contract for the purposes of making audits, examinations, excerpts, and transcriptions. Contractor agrees to permit any of the foregoing parties to reproduce by any means whatsoever or to copy excerpts and transcriptions as reasonably needed. Contractor shall maintain such books, records, and billing documents for 3 years after the cessation of Contractor's services under this Agreement. Nothing in this Section shall affect the time for bringing a cause of action or the applicable statute of limitations. Contractor agrees to provide HFC, FEMA, the Texas Department of Emergency Management, and the Comptroller General of the United States, including any of their authorized representatives, access to construction or other work sites pertaining to the work being completed under this Agreement.

5.11 DHS Seal, Logo, and Flags. Contractor shall not use the Department of Homeland Security ("DHS") seal(s), logos, crests, or reproductions of flags or likenesses of DHS agency officials without specific FEMA pre- approval.

5.12 Compliance with Federal Law, Regulations, and Executive Orders. This is an acknowledgement that FEMA financial assistance will be used to fund the Agreement only. Contractor will comply will Applicable Law, including but not limited to, federal law, regulations, executive orders, FEMA policies, procedures, and directives.

5.13 No Obligation by Federal Government. The Federal Government is not a party to this Agreement and is not subject to any obligations or liabilities to HFC, Contractor, or any other party pertaining to any matter resulting from the Agreement.

5.14 Program Fraud and False or Fraudulent Statements or Related Acts. Contractor acknowledges that 31 U.S.C. Chap. 38 (Administrative Remedies for False Claims and Statements) applies to Contractor's actions pertaining to this Agreement.

5.15 Affirmative Steps. Prior to subcontracting any portion of the work covered by this Agreement, Contractor agrees to and shall take all necessary affirmative steps to assure that small and minority businesses, women's business enterprises and labor surplus area firms are solicited and used when possible. Affirmative steps must include: (1) Placing qualified small and minority businesses and women's business enterprises on solicitation lists; (2) Assuring that small and minority businesses, and women's business enterprises are solicited whenever they are potential sources; (3) Dividing total requirements, when economically feasible, into smaller tasks or quantities to permit maximum participation by small and minority businesses, and women's business enterprises; (4) Establishing delivery schedules, where the requirement permits, which encourage participation by small and minority businesses, and women's business enterprises; and (5) Using the services and assistance, as appropriate, of such organizations as the Small Business Administration and the Minority Business Development Agency of the Department of Commerce.

ARTICLE 6: MISCELLANEOUS PROVISIONS

6.1 Force Majeure. Timely performance by both parties is essential to this Agreement. However, neither party will be liable for delays or other failures to perform its obligations under this Agreement to the extent the delay or failure is caused by Force Majeure. For purposes of this Agreement, Force Majeure means fires, floods, explosions, and other acts of God, war, terrorist acts, riots, court orders and the acts of superior governmental or military authority. This relief is not applicable unless the affected party does the following: uses due diligence to remove the Force Majeure as quickly as possible; provides the other party with prompt written notice of the cause and its anticipated effect; and provides the other party with written notice describing the actual delay or non-performance incurred within 7 calendar days' after the Force Majeure ceases. If the Force Majeure continues for more than 30 calendar days, then either party may terminate this Agreement by giving 15 calendar days' written notice to the other party; such termination is not a default or breach of this Agreement.

6.2 Assignment. Contractor shall not assign this Agreement in whole or in part without the prior written consent of HFC. For purposes hereof, any transfer of ownership interests in Contractor, direct or indirect, occurring after the Effective Date shall be deemed an assignment by Contractor requiring prior written consent of HFC. HFC may assign this Agreement in whole or in part, including any enforcement rights granted hereunder, at any time upon written notice to Contractor.

6.3 Non-Waiver. Failure of either party hereto to insist on the strict performance of any of the agreements herein or to exercise any rights or remedies accruing hereunder upon default or failure of performance shall not be considered a waiver of the right to insist on and to enforce by any appropriate remedy, strict compliance with any other obligation hereunder or to exercise any right or remedy occurring as a result of any future default or failure of performance.

6.4 Notices. All notices required or permitted hereunder shall be in writing and shall be deemed received when actually received or if earlier, on the third day following deposit in a United States Postal Service post office or receptacle with proper postage affixed (certified mail, return receipt requested) addressed to the other party at the address prescribed in the preamble hereof or at such other address as the receiving party may have theretofore prescribed by notice to the sending party.

6.5 Independent Contractor. The relationship of Contractor to HFC shall be that of an independent contractor. No principal/agent, partnership, joint venture, joint employer, or other relationship, other than an independent contractor relationship, is created or intended by this Agreement.

6.6 Governing Law/Venue. To the extent not preempted by federal law or regulation, this Agreement shall be construed and enforced in accordance with the laws of the State of Texas, notwithstanding any choice-of-law or conflicts-of-law rules to the contrary. Any action to enforce this Agreement or any litigation or claims otherwise regarding this Agreement must be brought in a court of competent jurisdiction in Harris County, Texas.

6.7 Severability. Each and every agreement contained in this Agreement is, and shall be construed as, a separate and independent agreement. If any provision of this Agreement should be held to be invalid or unenforceable, then the validity and enforceability of the remaining provisions of this Agreement to another person or circumstance shall not be affected thereby.

6.8 Survival. Contractor shall remain obligated to HFC under all clauses of this Agreement that expressly or by their nature extend beyond the delivery of the Equipment or termination of this Agreement.

6.9 Extent of Agreement. This Agreement, including the exhibits made a part hereof, represents the entire and integrated agreement between HFC and Contractor and supersedes all prior negotiations, representations or agreements either written or oral.

[Remainder of page left blank intentionally; signature block and exhibit to be inserted in final agreement]

EXHIBIT “D” SPECIFICATIONS

Item 1 – LED Footlight Fixtures:

Contractor shall supply a **quantity of 20 – 60-degree LED Footlight Fixtures** complete with Border Lens, two (2) C-Clamps, two (2) Safety Cables, one (1) 3 ft power cable, one (1) 3 ft fixture to fixture power cable, one (1) 3 ft fixture to fixture DMX data cable.

Physical & Control

1. Each unit shall be constructed of anodized aluminum extrusion, free of burrs and finished in black, high temperature paint. Unit shall be 69.25” wide x 7.25” high x 7” deep with a weight of 48 lbs.
2. Each unit shall provide the following features:
 - a. Beam angle of 60 deg. with optional Border lens.
 - b. Built in power supply.
 - c. Hidden fixing and cable management system.
 - d. Power input rating of 100-240v AC, 50-60 Hz, 700 VA.
 - e. Power factor of 0.995.
 - f. Power consumption of 660 watts.
 - g. Power connectors In & Out shall be PowerCon.
 - h. Data connectors In & Out shall be XLR 5-pin.
 - i. Control protocol shall be ANSI E1.11 USITT DMX 512-A
 - j. Built-in standalone mode with real-time triggering.
 - k. Quick release lever for tilt adjustment.
 - l. Optional “Border” and “Cyc” lens media accessories.
 - m. A choice of HSI, FxHSI, RGB, RGBA, RGB (*Magic Amber) and sRGBI (*Magic Amber) control modes.
3. Each unit shall ship with:
 - a. One each 3 ft x 14/3 SO power cable with Neutrik Power 1 PowerCon to Edison connectors.
4. Each unit shall include the following accessories:
 - a. Two (2) C-Clamps
 - b. Two (2) Safety Cables
 - c. One (1) each 3 ft x 14/3 SO Neutrik Power 1 PowerCon to Neutrik Power 1 PowerCon fixture to fixture jumper
 - d. One (1) each 3 ft DMX 5-pin XLR to 5-pin XLR fixture to fixture jumper
 - e. Chroma-Q Border Lens (CHCFBL72)

Photometrics

1. The fixture shall be suitable for creating a wide range of cyclorama flood, border, wall wash, effects and feature lighting applications in the entertainment sector.
2. Each unit shall provide:
 - a. 12,000 lumens output for washing areas up to 26 ft high.
 - b. RGBA color mixing.
 - c. A high CRI of 92.
 - d. A smooth linear, dimming curve.
 - e. Theatrical grade dimming.
 - f. A radically increased color palette.

Reference Model: Chroma-Q – Color Force 72 – Model #CF72BDRRRGBA

Item 2 – LED Fresnel Fixture:

Contractor shall supply a **quantity of 40 – LED Fresnel Fixtures** complete with Fresnel Adapter, one (1) C-Clamp, one (1) Safety Cable, one (1) 5 ft power cable, one (1) gate diffuser, one (1) A-size pattern holder, one (1) 10 ft fixture to fixture power cable and one (1) 10 ft fixture to fixture DMX data cable.

General

1. The fixture shall be a color-mixing high-intensity LED illuminator with DMX control of intensity and color.
2. The fixture shall be UL 1573 listed for stage and studio use.
3. The fixture shall comply with the USITT DMX-512A standard.

Physical

1. The unit shall be constructed of rugged, die cast aluminum, free of burrs and pits, finished in black.
2. Each unit shall provide the following features:
 - a. Lens secured with silicone shock mounts.
 - b. Shutter assembly shall allow for +/- 25 deg. Rotation.
 - c. 20 gauge steel shutters.
 - d. Interchangeable lens tubes for different field angles with Teflon guides for smooth tube movement.
 - e. Sturdy integral die cast gel frame holders with two accessory slots and a top-mounted, quick release gel frame retainer.
 - f. Rugged steel yoke with two mounting positions allowing 300+ deg rotation of the fixture within the yoke.
 - g. Positive locking, hand operated yoke clutch.
 - h. Slot with sliding cover for motorized pattern devices or optional iris.
3. The housing shall have a rugged black powder coat finish.
 - a. White or silver/gray powder coat finishes shall be available as color options.
 - b. Other powder coat color options shall be available on request.
4. Power supply, cooling and electronics shall be integral to each unit.
5. Each unit shall ship with:
 - a. Theatrical style hanging yoke as standard.
 - b. One (1) C-clamp
 - c. 5 ft x 14/3 Neutrik PowerCon to Edison power cable
 - d. Gate diffuser.
 - e. A-size pattern holder.
6. Each unit shall include the following accessories:
 - f. One (1) safety cable (400SC)
 - g. One (1) each 10 ft x 14/3 SO Neutrik PowerCon to PowerCon fixture to fixture jumper.
 - h. One (1) S4 LED Fresnel Adapter (S4LEDFRES)

Optical

1. The light beam should have a 2-to-1 center-to-edge drop-off ratio.
2. The unit shall provide, but not be limited to:
 - a. Low gate and beam temperature.
 - b. Sharp imaging through a three-plane shutter design.
3. The unit shall provide, but not be limited to:
 - a. 5, 10, 14, 19, 26, 36, 50, 70 and 90 degree field angles.

- b. High-quality pattern imaging.
 - c. Sharp shutter cuts without halation.
 - d. Shutter warping and burnout in normal use shall be unacceptable.
 - e. Adjustable hard and soft beam edges.
4. 19, 26, 36, and 50 degree units shall have optional lens tubes available for precision, high-contrast imaging.

Environmental and Agency Compliance

1. The fixture shall be ETL and cETL LISTED and /or CE rated, and shall be so labeled when delivered to the job site.
2. The fixture shall be ETL LISTED to the UL1573 standard for stage and studio use.
3. The fixture shall be rated for IP-20 dry location use.

Thermal

1. Fixture shall be equipped with a cooling fan.
 - a. Fan speed control via a DMX channel shall be possible.
 - b. Fan speed software shall permit the fixture to override DMX fan speed setting to prevent heat damage to the fixture.
2. The fixture shall utilize advanced thermal management systems to maintain LED life to an average of 70% intensity after 54,000 hours of use (Lustr) and 20,000 hours (Tungsten HD and Daylight HD).
 - a. Thermal management shall include multiple temperature sensors within the housing to include:
 - 1.) LED array circuit board temperatures.
 - 2.) Temperature sensors placed on each individual LED color circuit.
 - 3.) Fixture ambient.
 - 4.) CPU
 - b. Fixture user shall permit monitoring of temperature sensors via a legible LCD multi-line backlit display.
 - c. Fixtures that do not provide active thermal monitoring of LED circuits and other temperature readings shall not be acceptable.
3. The fixture shall operate in an ambient temperature range of 0°C (32°F) minimum, to 40° C (104°F) maximum ambient temperature.

Electrical

1. The fixture shall be equipped with a 100V to 240V 50/60Hz internal power supply.
2. The fixture shall support power in and thru operation.
 - a. Power in shall be via Neutrik® PowerCon™ input connector.
 - b. Power thru shall be via Neutrik® PowerCon™ output connector.
 - c. Fixture power wiring and accessory power cables shall be rated to support linking of multiple fixtures up to the capacity of a 15A breaker.
3. The fixture requires power from a non-dim source.
4. Power supply outputs shall have self-resetting current-limiting protection.
5. Power supply shall have power factor correction.

LED Emitters

1. The fixture shall contain a minimum of four different LED colors to provide color characteristics as described in the Color Section below.

2. All LEDs used in the fixture shall be high brightness and proven quality from established and reputable LED manufacturers.
 - a. Fixture shall utilize Luxeon® Rebel™ and/or Osram OSOLON Square LED emitters.
3. Manufacturer of LED emitters shall utilize an advanced production LED binning process to maintain color consistency.
4. All LED fixtures (100% of each lot) shall undergo a minimum three-hour burn-in test during manufacturing.
5. LED system shall comply with all relevant patents.
6. Fixtures shall have adjustable PWM frequency up to 25,000hz to avoid flicker on camera.

Longevity

1. The Lustr fixture shall be provided with an LM-84 test report from a nationally recognized test lab.
 - a. LM-84 results shall be no less than 54,000 hours L70 rating.
2. All fixtures shall be provided with the minimum warranty:
 - a. 5 years full fixture coverage.
 - b. 10 years LED coverage.

Calibration

1. Fixture shall be calibrated at factory for achieve consistent color and intensity output between fixtures built at different times and/or from different LED lots or bins.
 - a. Calibration data shall be stored on the LED array as a permanent part of on-board operating system.
 - b. All arrays, including replacement arrays shall be calibrated to the same standard to insure consistency.
 - c. Fixtures not offering LED calibration shall not be acceptable.

Color

1. The fixture shall utilize a minimum of 60 LED emitters.
2. The fixture shall be available in specialized LED arrays as outlined below:
 - a. Source Four LED Series 2 Lustr.
 - i. Red, Amber, Green, Cyan, Blue, Indigo and Lime LEDs in an array designed for broad spectrum color, light tints, and variable whites. This array shall be the Lustr array as manufactured by Electronic Theatre Controls, or approved equal.
 - ii. Measured brightness of the Lustr array shall be greater than 6,500 field lumens.

Dimming

1. The LED system shall use 15-bit nonlinear scaling techniques for high-resolution dimming.
2. At least four different dimming curve options shall be accessible at the fixture's User Interface.
 - a. Incandescent
 - b. Standard
 - c. Linear
 - d. Quick
3. Dimming curves shall be optimized for smooth dimming over longer timed fades.
4. The LED system shall be digitally driven using high-speed pulse width modulation (PWM).
5. LED control shall be compatible with broadcast equipment in the following ways:
 - a. PWM control of LED levels shall be imperceptible to video cameras and related equipment.

- b. PWM rates shall be adjustable by the user at the fixture if necessary to avoid any visible interference to video cameras and related equipment.

Control and User interface

1. The fixture shall be USITT DMX 512A-compatible via In and Thru 5-pin XLR connectors.
2. The fixture shall be compatible with the ANSI RDM E1.20 standard.
 - a. All fixture functions shall accessible via RDM protocol for modification from suitably equipped control console.
 - b. Temperature sensors within the luminaire shall be viewable in real time via RDM.
 - c. Fixtures not offering RDM compatibility, feature set access or temperature monitoring via RDM shall not be compatible.
3. The fixture shall be equipped with multi-line LCD display for easy-to-read status reports and configuration changes.
4. The fixture shall be equipped with a six-button user-interface.
5. The fixture shall offer multiple DMX input profile options to include:
 - a. RGB - control of all individual LED colors via a three-channel profile.
 - i. Red, Green, Blue
 - b. HSI – control of all individual LED colors via a three-channel profile.
 - i. Hue, Saturation, Intensity
 - c. HSIC – control of all LED colors via a four-channel profile.
 - i. Hue, Saturation, Intensity and Color Point
 - ii. Color point provides variable color temperature settings.
 - d. Direct – control of each individual color channel via an independent channel.
 - e. Studio – Control of the fixture in a white-light 3 channel profile.
 - i. Intensity, Color Temperature, +/- Green (Tint)
 - ii. Without DMX the fixture can master other Source Four LEDs and Desire fixtures that are connected via 5 pin XLR DMX cables.
 - f. A variable-rate strobe channel shall be provided.
6. The fixture shall offer three output settings:
 - a. Boost mode - powers LEDs at maximum intensity and provides no compensation against LED 'droop' or intensity loss.
 - b. Regulated mode – slightly restricts maximum LED intensity levels to compensate against LED droop.
 - c. Protected mode – further restricts maximum LED intensity levels to compensate against LED droop and offer color consistency at highest permissible ambient temperatures (40C).
 - d. Fixtures that do not provide regulated and protected operation modes are not acceptable
7. The fixture shall offer additional user-definable options to including but not limited to:
 - a. Display time out options
 - b. Loss of data behavior options
 - c. White point settings
 - d. Red-shift option for tungsten dimming emulation
8. The fixture shall offer five Quick Set-Ups to allow user to rapidly select different combinations of the numerous user options based on the desired usage situation, to include:
 - a. General – for most situations
 - b. Stage – when emulating incandescent fixtures is desired
 - c. High Impact – when maximum output and effect is desired
 - d. XT Arch – when color consistency and architectural characteristics are desired.
 - e. Studio - when DMX or stand-alone of white light output is required with intensity, color temperature and color tint control parameters
9. The fixture shall offer stand-alone functionality eliminating the need for a console

- a. Fixture shall ship with 24 preset colors accessible as a stand-alone feature
- b. Fixture shall ship with 12 sequences accessible as a stand-alone feature
- c. Each color and sequence can be modified by the end user
- d. Fixtures can be linked together with standard DMX cables and controlled from designated master fixture
 - i. Up to 32 fixtures may be linked
- e. Fixtures in a stand-alone state shall restore to the settings present prior to power cycling, eliminating the need for reprogramming
- f. Fixtures without stand-alone operation features described above shall not be acceptable.

10. The fixture shall be capable of copying all performance settings to other fixtures of the same type via a 5 pin XLR DMX cable

Reference Model: ETC Series 2 LED Lustr – Model #S4LEDS2L-FRES

Item 3 – LED Ellipsoidal Fixture:

Contractor shall supply a **quantity of 60 – LED Ellipsoidal Fixtures** complete with a three (3) HighDef Lens Set (19, 26 & 36 deg), one (1) C-Clamp, one (1) Safety Cable, one (1) 5 ft power cable, one (1) gate diffuser, one (1) A-size pattern holder, one (1) 10 ft fixture to fixture power cable and one (1) 10 ft fixture to fixture DMX data cable.

General

1. The fixture shall be a color-mixing high-intensity LED illuminator with DMX control of intensity and color.
2. The fixture shall be UL 1573 listed for stage and studio use.
3. The fixture shall comply with the USITT DMX-512A standard.

Physical

1. The unit shall be constructed of rugged, die cast aluminum, free of burrs and pits, finished in black.
2. Each unit shall provide the following features:
 - a. Lens secured with silicone shock mounts.
 - b. Shutter assembly shall allow for +/- 25 deg. Rotation.
 - c. 20 gauge steel shutters.
 - d. Interchangeable lens tubes for different field angles with Teflon guides for smooth tube movement.
 - e. Sturdy integral die cast gel frame holders with two accessory slots and a top-mounted, quick release gel frame retainer.
 - f. Rugged steel yoke with two mounting positions allowing 300+ deg rotation of the fixture within the yoke.
 - g. Positive locking, hand operated yoke clutch.
 - h. Slot with sliding cover for motorized pattern devices or optional iris.
3. The housing shall have a rugged black powder coat finish.
 - a. White or silver/gray powder coat finishes shall be available as color options.
 - b. Other powder coat color options shall be available on request.
4. Power supply, cooling and electronics shall be integral to each unit.
5. Each unit shall ship with:
 - a. Theatrical style hanging yoke as standard.
 - b. One (1) C-clamp
 - c. 5 ft x 14/3 Neutrik PowerCon to Edison power cable
 - d. Gate diffuser.
 - e. A-size pattern holder.

7. Each unit shall include the following accessories:
 - i. One (1) safety cable (400SC)
 - j. One (1) each 10 ft x 14/3 SO Neutrik PowerCon to PowerCon fixture to fixture jumper.
 - k. One (1) S4 19 deg EDLT lens (419EDLT)
 - l. One (1) S4 26 deg EDLT lens (426EDLT)
 - m. One (1) S4 36 deg EDLT lens (436EDLT)

Optical

1. The light beam should have a 2-to-1 center-to-edge drop-off ratio.
2. The unit shall provide, but not be limited to:
 - a. Low gate and beam temperature.
 - b. Sharp imaging through a three-plane shutter design.
3. The unit shall provide, but not be limited to:
 - a. 5, 10, 14, 19, 26, 36, 50, 70 and 90 degree field angles.
 - b. High-quality pattern imaging.
 - c. Sharp shutter cuts without halation.
 - d. Shutter warping and burnout in normal use shall be unacceptable.
 - e. Adjustable hard and soft beam edges.
4. 19, 26, 36, and 50 degree units shall have optional lens tubes available for precision, high-contrast imaging.

Environmental and Agency Compliance

1. The fixture shall be ETL and cETL LISTED and /or CE rated, and shall be so labeled when delivered to the job site.
2. The fixture shall be ETL LISTED to the UL1573 standard for stage and studio use.
3. The fixture shall be rated for IP-20 dry location use.

Thermal

1. Fixture shall be equipped with a cooling fan.
 - a. Fan speed control via a DMX channel shall be possible.
 - b. Fan speed software shall permit the fixture to override DMX fan speed setting to prevent heat damage to the fixture.
2. The fixture shall utilize advanced thermal management systems to maintain LED life to an average of 70% intensity after 54,000 hours of use (Lustr) and 20,000 hours (Tungsten HD and Daylight HD).
 - a. Thermal management shall include multiple temperature sensors within the housing to include:
 - 1.) LED array circuit board temperatures.
 - 2.) Temperature sensors placed on each individual LED color circuit.
 - 3.) Fixture ambient.
 - 4.) CPU
 - b. Fixture user shall permit monitoring of temperature sensors via a legible LCD multi-line backlit display.
 - c. Fixtures that do not provide active thermal monitoring of LED circuits and other temperature readings shall not be acceptable.
3. The fixture shall operate in an ambient temperature range of 0°C (32°F) minimum, to 40° C (104°F) maximum ambient temperature.

Electrical

1. The fixture shall be equipped with a 100V to 240V 50/60Hz internal power supply.

2. The fixture shall support power in and thru operation.
 - a. Power in shall be via Neutrik® PowerCon™ input connector.
 - b. Power thru shall be via Neutrik® PowerCon™ output connector.
 - c. Fixture power wiring and accessory power cables shall be rated to support linking of multiple fixtures up to the capacity of a 15A breaker.
3. The fixture requires power from a non-dim source.
4. Power supply outputs shall have self-resetting current-limiting protection.
5. Power supply shall have power factor correction.

LED Emitters

1. The fixture shall contain a minimum of four different LED colors to provide color characteristics as described in the Color Section below.
2. All LEDs used in the fixture shall be high brightness and proven quality from established and reputable LED manufacturers.
 - a. Fixture shall utilize Luxeon® Rebel™ and/or Osram OSOLON Square LED emitters.
3. Manufacturer of LED emitters shall utilize an advanced production LED binning process to maintain color consistency.
4. All LED fixtures (100% of each lot) shall undergo a minimum three-hour burn-in test during manufacturing.
5. LED system shall comply with all relevant patents.
6. Fixtures shall have adjustable PWM frequency up to 25,000hz to avoid flicker on camera.

Longevity

1. The Lustr fixture shall be provided with an LM-84 test report from a nationally recognized test lab.
 - a. LM-84 results shall be no less than 54,000 hours L70 rating.
2. All fixtures shall be provided with the minimum warranty:
 - a. 5 years full fixture coverage.
 - b. 10 years LED coverage.

Calibration

1. Fixture shall be calibrated at factory for achieve consistent color and intensity output between fixtures built at different times and/or from different LED lots or bins.
 - a. Calibration data shall be stored on the LED array as a permanent part of on-board operating system.
 - b. All arrays, including replacement arrays shall be calibrated to the same standard to insure consistency.
 - c. Fixtures not offering LED calibration shall not be acceptable.

Color

1. The fixture shall utilize a minimum of 60 LED emitters.
2. The fixture shall be available in specialized LED arrays as outlined below:
 - a. Source Four LED Series 2 Lustr.

- i. Red, Amber, Green, Cyan, Blue, Indigo and Lime LEDs in an array designed for broad spectrum color, light tints, and variable whites. This array shall be the Lustr array as manufactured by Electronic Theatre Controls, or approved equal.
- ii. Measured brightness of the Lustr array shall be greater than 6,500 field lumens.

Dimming

1. The LED system shall use 15-bit nonlinear scaling techniques for high-resolution dimming.
2. At least four different dimming curve options shall be accessible at the fixture's User Interface.
 - a. Incandescent
 - b. Standard
 - c. Linear
 - d. Quick
3. Dimming curves shall be optimized for smooth dimming over longer timed fades.
4. The LED system shall be digitally driven using high-speed pulse width modulation (PWM).
5. LED control shall be compatible with broadcast equipment in the following ways:
 - a. PWM control of LED levels shall be imperceptible to video cameras and related equipment.
 - b. PWM rates shall be adjustable by the user at the fixture if necessary to avoid any visible interference to video cameras and related equipment.

Control and User interface

1. The fixture shall be USITT DMX 512A-compatible via In and Thru 5-pin XLR connectors.
2. The fixture shall be compatible with the ANSI RDM E1.20 standard.
 - a. All fixture functions shall accessible via RDM protocol for modification from suitably equipped control console.
 - b. Temperature sensors within the luminaire shall be viewable in real time via RDM.
 - c. Fixtures not offering RDM compatibility, feature set access or temperature monitoring via RDM shall not be compatible.
3. The fixture shall be equipped with multi-line LCD display for easy-to-read status reports and configuration changes.
4. The fixture shall be equipped with a six-button user-interface.
5. The fixture shall offer multiple DMX input profile options to include:
 - a. RGB - control of all individual LED colors via a three-channel profile.
 - ii. Red, Green, Blue
 - b. HSI – control of all individual LED colors via a three-channel profile.
 - ii. Hue, Saturation, Intensity
 - c. HSIC – control of all LED colors via a four-channel profile.
 - iii. Hue, Saturation, Intensity and Color Point
 - iv. Color point provides variable color temperature settings.
 - d. Direct – control of each individual color channel via an independent channel.
 - e. Studio – Control of the fixture in a white-light 3 channel profile.
 - iii. Intensity, Color Temperature, +/- Green (Tint)
 - iv. Without DMX the fixture can master other Source Four LEDs and Desire fixtures that are connected via 5 pin XLR DMX cables.
 - f. A variable-rate strobe channel shall be provided.
6. The fixture shall offer three output settings:
 - a. Boost mode - powers LEDs at maximum intensity and provides no compensation against LED 'droop' or intensity loss.
 - b. Regulated mode – slightly restricts maximum LED intensity levels to compensate against LED droop.

- c. Protected mode – further restricts maximum LED intensity levels to compensate against LED droop and offer color consistency at highest permissible ambient temperatures (40C).
 - d. Fixtures that do not provide regulated and protected operation modes are not acceptable
7. The fixture shall offer additional user-definable options to including but not limited to:
 - a. Display time out options
 - b. Loss of data behavior options
 - c. White point settings
 - d. Red-shift option for tungsten dimming emulation
 8. The fixture shall offer five Quick Set-Ups to allow user to rapidly select different combinations of the numerous user options based on the desired usage situation, to include:
 - a. General – for most situations
 - b. Stage – when emulating incandescent fixtures is desired
 - c. High Impact – when maximum output and effect is desired
 - d. XT Arch – when color consistency and architectural characteristics are desired.
 - e. Studio - when DMX or stand-alone of white light output is required with intensity, color temperature and color tint control parameters
 9. The fixture shall offer stand-alone functionality eliminating the need for a console
 - a. Fixture shall ship with 24 preset colors accessible as a stand-alone feature
 - b. Fixture shall ship with 12 sequences accessible as a stand-alone feature
 - c. Each color and sequence can be modified by the end user
 - d. Fixtures can be linked together with standard DMX cables and controlled from designated master fixture
 - ii. Up to 32 fixtures may be linked
 - e. Fixtures in a stand-alone state shall restore to the settings present prior to power cycling, eliminating the need for reprogramming
 - f. Fixtures without stand-alone operation features described above shall not be acceptable.
 10. The fixture shall be capable of copying all performance settings to other fixtures of the same type via a 5 pin XLR DMX cable

Reference Model: ETC Series 2 LED Lustr – Model #S4LEDS2LS++

Item 4 – Par 64 Wash Fixture:

Contractor shall supply a **quantity of 48 – Par 64 Wash Fixtures** complete with one (1) Color Frame, one (1) C-Clamp, one (1) Safety Cable, one (1) Wire Mesh Safety Screen, 1000-watt FFR medium flood lamp and Stage Pin Connector with clear cover (**Bates Brand Connector – Model # G20M**).

General

1. Constructed of rugged steel.
2. 360 deg lamp rotation.
3. Hinged rear cover of easy lamp access.
4. Spring loaded accessory holder safety latch.
5. Mogul-end prong socket.
6. Three position yoke adjustment.
7. The fixture shall be UL 1573 listed for 1000 watts.

Reference Model: Altman ParCan – Model #Par64

Item 5 – 35 ft x 6 Circuit Multi-Conductor Cable Assembly:

Contractor shall supply a **quantity of 2 – 35 ft x 6 Circuit Multi-Conductor Cable Assemblies**. Each assembly shall consist of 35 ft of 12 gauge / 18 conductor cable with a specially formulated black 85 millimeter thick thermoplastic rubber jacket and high visibility yellow conductors. Insulation on each single conductor shall have a thickness of 32 millimeters for durability and long life. Overall thickness of each cable shall not exceed 1 inch. One end of each cable shall be manufactured with a LEX 19 Pin Male Inline Crimp Style Connector (LSC19-LMC-29) and the opposite end of each cable shall be manufactured with a LEX 19 Pin Female Inline Crimp Style Connector (LSC19-LFC-29). Each connector shall be installed so as to provide many years of maintenance free operation and functionality. Each connector shall be supplied with an installed protective cap. Each cable assembly shall be provided with high visible labeling at each cable end, permanently installed with a protective clear heat shrink jacket, designating length and ownership.

Reference Model: Lex Products – Model #ME1218-35-L

Item 6 – 50 ft x 6 Circuit Multi-Conductor Cable Assembly:

Contractor shall supply a **quantity of 2 – 50 ft x 6 Circuit Multi-Conductor Cable Assemblies**. Each assembly shall consist of 50 ft of 12 gauge / 18 conductor cable with a specially formulated black 85 millimeter thick thermoplastic rubber jacket and high visibility yellow conductors. Insulation on each single conductor shall have a thickness of 32 millimeters for durability and long life. Overall thickness of each cable shall not exceed 1 inch. One end of each cable shall be manufactured with a LEX 19 Pin Male Inline Crimp Style Connector (LSC19-LMC-29) and the opposite end of each cable shall be manufactured with a LEX 19 Pin Female Inline Crimp Style Connector (LSC19-LFC-29). Each connector shall be installed so as to provide many years of maintenance free operation and functionality. Each connector shall be supplied with an installed protective cap. Each cable assembly shall be provided with high visible labeling at each cable end, permanently installed with a protective clear heat shrink jacket, designating length and ownership.

Reference Model: Lex Products – Model #ME1218-50-L

Item 7 – 100 ft x 6 Circuit Multi-Conductor Cable Assembly:

Contractor shall supply a **quantity of 2 – 100 ft x 6 Circuit Multi-Conductor Cable Assemblies**. Each assembly shall consist of 100 ft of 12 gauge / 18 conductor cable with a specially formulated black 85 millimeter thick thermoplastic rubber jacket with a thickness of 85 millimeter and high visibility yellow conductors. Insulation on each single conductor shall have a thickness of 32 millimeters for durability and long life. Overall thickness of each cable shall not exceed 1 inch. One end of each cable shall be manufactured with a LEX 19 Pin Male Inline Crimp Style Connector (LSC19-LMC-29) and one end of each cable shall be manufactured with a LEX 19 Pin Female Inline Crimp Style Connector (LSC19-LFC-29). Each connector shall be installed so as to provide many years of maintenance free operation and functionality. Each connector shall be supplied with an installed protective cap. Each cable assembly shall be provided with high visible labeling at each cable end, permanently installed with a protective clear heat shrink jacket, designating length and ownership.

Reference Model: Lex Products – Model #ME1218-100-L

Item 8 – 6 Circuit x 6-foot Male L6-20 Locking Break-In Assembly:

Contractor shall supply a **quantity of 5 – 6 Circuit x 6-foot Male L6-20 Locking Break-Ins**.

The Male Break-Out shall be fabricated with a LEX 19 Pin Female Inline Crimp Style Connector (LSC19-LMC-29). The opposite ends of the break-out shall be fabricated using a male **NEMA L6-20 Locking Connector, Hubbell – Model #2321**. Each connector shall be installed so as to provide many years of maintenance free operation and functionality. Each LEX connector shall be supplied with an installed protective cap. Each cable assembly shall be provided with high visible labeling at the cable end, permanently installed with a protective clear heat shrink jacket, designating the circuit number of each cable. Circuit number labeling shall be consistent throughout all five (5) break-in & break-out assemblies. Ownership labeling shall be installed in the same fashion on at least two cable ends of each assembly.

Reference Model: Lex Products – Model #BI100L-6-L6-20

Item 9 – 6 Circuit x 6-foot Female L6-20 Locking Break-Out Assembly:

Contractor shall supply a **quantity of 5 – 6 Circuit x 6-foot Female L6-20 Locking Break-Outs.**

The Female Break-Out shall be fabricated with a LEX 19 Pin Male Inline Crimp Style Connector (LSC19-LMC-29). The opposite ends of the Break-Out shall be fabricated using a female **NEMA L6-20 Locking Connector, Hubbell – Model #2323**. Each connector shall be installed so as to provide many years of maintenance free operation and functionality. Each LEX connector shall be supplied with an installed protective cap. Each cable assembly shall be provided with high visible labeling at the cable end, permanently installed with a protective clear heat shrink jacket, designating the circuit number of each cable. Circuit number labeling shall be consistent throughout all five (5) break-in & break-out assemblies. Ownership labeling shall be installed in the same fashion on at least two cable ends of each assembly.

Reference Model: Lex Products – Model #BO100L-6-L6-20

Item 10 – Castered Cube Truck:

Contractor shall supply a **quantity of 4 – Castered Cube Trucks**. Cube trucks shall have a load capacity of 1000 lbs and a volume capacity of 16 cubic feet. Casters shall have a diamond wheel pattern with a metal frame support under the tub. Cube trucks shall be black in color and constructed of durable roto-molded plastic with a metal frame support surrounding tub.

Reference Model: Rubbermaid Commercial – Model #4716