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**RETOURNER LES SOUMISSIONS À:**

Bid Receiving Public Works and Government  
Services Canada/Réception des soumissions Travaux  
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See herein for bid submission  
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Voir la présente pour les  
instructions sur la présentation  
d'une soumission

NA  
Alberta

**SOLICITATION AMENDMENT  
MODIFICATION DE L'INVITATION**

The referenced document is hereby revised; unless otherwise  
indicated, all other terms and conditions of the Solicitation  
remain the same.

Ce document est par la présente révisé; sauf indication contraire,  
les modalités de l'invitation demeurent les mêmes.

**Comments - Commentaires**

**Vendor/Firm Name and Address  
Raison sociale et adresse du  
fournisseur/de l'entrepreneur**

**Issuing Office - Bureau de distribution**  
Public Works and Government Services Canada/Travaux  
publics et Services gouvernementaux Canada  
Harry Hays Building (HHB)  
Room 759, 220-4th Avenue SE  
Calgary  
Alberta  
T2G 4X3

<b>Title - Sujet</b> Broad Spectrum Linear LED Lights Broad Spectrum Linear LED Lights	
<b>Solicitation No. - N° de l'invitation</b> 01586-210004/A	<b>Amendment No. - N° modif.</b> 005
<b>Client Reference No. - N° de référence du client</b> 01586-210004	<b>Date</b> 2021-06-16
<b>GETS Reference No. - N° de référence de SEAG</b> PW-\$CAL-143-7205	
<b>File No. - N° de dossier</b> CAL-0-43140 (143)	<b>CCC No./N° CCC - FMS No./N° VME</b>
<b>Solicitation Closes - L'invitation prend fin</b> <b>at - à 02:00 PM</b> Mountain Daylight Saving Time MDT <b>on - le 2021-06-23</b> Heure Avancée des Rocheuses HAR	
<b>F.O.B. - F.A.B.</b> <b>Plant-Usine:</b> <input type="checkbox"/> <b>Destination:</b> <input checked="" type="checkbox"/> <b>Other-Autre:</b> <input type="checkbox"/>	
<b>Address Enquiries to: - Adresser toutes questions à:</b> Kunz, Roxanne	<b>Buyer Id - Id de l'acheteur</b> cal143
<b>Telephone No. - N° de téléphone</b> (403) 463-0037 ( )	<b>FAX No. - N° de FAX</b> (418) 566-6167
<b>Destination - of Goods, Services, and Construction:</b> <b>Destination - des biens, services et construction:</b> DEPARTMENT OF AGRICULTURE AND AGRI-FOOD CANADA 5403 – 1 Avenue South Lethbridge, AB T1J 4B1	

**Instructions: See Herein**

**Instructions: Voir aux présentes**

<b>Delivery Required - Livraison exigée</b>	<b>Delivery Offered - Livraison proposée</b>
<b>Vendor/Firm Name and Address</b> <b>Raison sociale et adresse du fournisseur/de l'entrepreneur</b>	
<b>Telephone No. - N° de téléphone</b> <b>Facsimile No. - N° de télécopieur</b>	
<b>Name and title of person authorized to sign on behalf of Vendor/Firm</b> <b>(type or print)</b> <b>Nom et titre de la personne autorisée à signer au nom du fournisseur/ de l'entrepreneur (taper ou écrire en caractères d'imprimerie)</b>	
<b>Signature</b>	<b>Date</b>

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**This amendment 005 is being raised to address questions, and provide revisions with regards to solicitation No. 01586-210004/A:**

**PART A: Questions and Responses**

**PART B: Revisions to the Request for Proposal**

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**PART A: Questions and Answers**

Q1: In reference to Amendment 001, the response provided regarding the eligibility of an integrated driver does not apply to our fixture:

1. If the driver fails, we replace only the driver not the whole fixture
2. Our individual fixture meets the #10 dimension requirements 38.78”L x 3.74”H x 4.681”W
  - a. When mounted side by side we meet the tolerance requirement 14.25”W.

Would lights meeting the specifications listed above meet your needs?

A1: **AAFC will accept integrated driver if the driver is replaceable. (See Part B Revisions)**

**Technology is changing all the time and it appears that the units are getting smaller with increased output. AAFC would accept a module within the length range of 38” to 48”. (See Part B Revisions).**

Q2: In reference to line item #10 of the Compliance Matrix, our standard product for reaching all of the performances is using four (4) strips of LED. This fit well with the maximum width allowed of 13". To prevent need for interpretation after closing, the following sentence (page 16):

"OR a two-linear LED module is acceptable if each module is within the single-linear LED module dimension given and when mounted together the overall size is not larger than 45” x 4” x 13” (L x H x W) with a variance of +/- 3 inches in length and +/- 2 inches in height and width."

Should be replace by:

"OR a two to four -linear LED module is acceptable if each module is within the single-linear LED module dimension given and when mounted together the overall size is not larger than 45” x 4” x 13” (L x H x W) with a variance of +/- 3 inches in length and +/- 2 inches in height and width."

If you can confirm that you are ok with considering our four strips unit as a single-linear LED module, than there is no need for that change.

A2: **Based on the testing experience of our sister Research Centres, AAFC’s greenhouse**

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requirement to meet operational needs is either the single or dual linear module LED's. The single/dual linear modules have fins which can dissipate heat through conduction and/or convection paths thus handles the heat of the greenhouse better as they are operating in high ambient temperatures (40C) and the multi-linear modules cannot handle heat that high without some failing. What the supplier describes is a four linear LED module which falls under the classification of a multi-linear LED, thus AAFC must say it is not acceptable for this requirement.

Q3: Pertaining to Compliance Matrix 5e, would a spectrum from 2-6%, between 700nm and 780nm be acceptable?

A3: **Yes it is acceptable. (See Part B Revisions).**

Q4: What is the approximate length for the 30 linear lights?

A4: **From the Compliance Matrix Item 10, the length of each module is 38" to 48". We are expecting to put 3 modules over each 5'x21' bench (centered). (See Part B Revisions)**

Q5: We can meet the spectral PPF requirements, however as the target total PPF is 1700, it implies each fixture would require about 800 watts of electrical power.

As the form factor is quite small (45 inches long), our linear light sources cannot produce this kind of extremely high output in a small fixture. Please confirm the specification for 1700 PPF per 45 inch fixture is correct.

A5: **Yes, that is correct, the specification of 1700 PPF is for the whole unit, as there are manufactures that have achieved this output with a single linear module and others have mounted two single-linear modules together using hanging plates to achieve the output.**

**At the height which the modules are mounted will provide at least 150  $\mu\text{mol/s/M}^2$  PAR (between 400 to 700 nm) at the bench top, this output is required.**

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#### PART B: Revisions to the Request for Proposal

1. INSERT: 2.2.1 Best Delivery Date - Bid

**While delivery is requested by September 14, 2021, the best delivery that could be offered is \_\_\_\_\_. (To be filled out by bidder)**

2. DELETE: 6.4.2 Delivery Date – in its entirety.

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**INSERT: 6.4.2 Delivery Date**

All the deliverables must be received on or before \_\_\_\_\_. *(To be determined at contract award).*

**3. DELETE: ANNEX "A" - in its entirety.**

**INSERT:**

**ANNEX "A"**

**REQUIREMENT**

Agriculture and Agri-Food Canada has a requirement for the supply of 30 Broad Spectrum Linear LED lights for the Research Greenhouse.

**Refer to the Compliance Matrix for the complete performance specifications and instructions that must be satisfied in order for a bid to be deemed responsive.**

**DELIVERY:**

All the deliverables must be received on or before \_\_\_\_\_. *(To be determined at contract award).*

Agriculture and Agri-Food Canada  
5403 – 1 Avenue South  
Lethbridge, AB  
T1J 4B1

**COMPLIANCE MATRIX – MINIMUM MANDATORY PERFORMANCE SPECIFICATIONS**

**Instructions to Bidders**

1. A complete list of the mandatory evaluation criteria are detailed in the Compliance Matrix below.
2. Bids which fail to meet all of the mandatory evaluation criteria will be declared non-responsive.
3. Bidders should demonstrate their understanding of the requirements contained in the bid solicitation and explain how they meet each mandatory evaluation criteria. Bidder should demonstrate their capability in a thorough, concise and clear manner.
4. The technical bid should address clearly and in sufficient depth the points that are subject to the evaluation criteria against which the bid will be evaluated. Simply repeating the statement contained in the bid solicitation or stating, without any substantiating information, that a bidder

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is compliant will not be sufficient.

5. Substantiating information may include, but is not limited to, specification sheets, technical brochures, photographs or illustrations. If published supporting technical documentation is not available, the Bidder should prepare a written narrative complete with a detailed explanation of how its bid demonstrates technical compliance. All substantiating information should be provided with the bid at solicitation closing date. It is the Bidders responsibility to ensure that the submitted supporting technical documentation provides detail to demonstrate that the proposed product(s) meet the requirements of the evaluation criteria.
6. If the supporting documentation referenced above has not been provided at bid closing, the Contracting Authority will notify the Bidder that they must provide supporting documentation within two (2) business days following notification. Failure to comply with the request of the Contracting Authority within that time period, will deem the bid non-responsive and the bid will be given no further consideration.
7. In order to facilitate the evaluation of the bid, Canada requests that bidders address and present the topics in the order of the evaluation criteria, and include a grid in their proposal, containing the information which demonstrates how the bidder meets each evaluation criteria. Alternatively, and to avoid any duplication, bidders may also refer to the different sections of their bids by identifying the specific paragraph and page number where the subject topic has already been addressed.
8. Bidders must address any concerns with the performance specifications in written detail to the Contracting Authority before bid closing as outlined in the Request for Proposal (RFP) document.

**COMPLIANCE MATRIX – MINIMUM MANDATORY PERFORMANCE SPECIFICATIONS:**

Requirement:	Manufacturer(s) Offered:	Model Number(s) Offered:
Broad spectrum Linear LED lights		

Item #	Performance Specification	Status (M) Mandatory (D) Desirable*	Performance Specification Offered: Bidder <u>should</u> indicate how they meet the performance specification by recording this information in this column	Cross Reference: In this column, Bidders <u>should</u> cross-reference where this performance specification is indicated in their supporting documents
1	AC Input Voltage: AC Input Voltage must operate at 347 volts to meet	M		

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	existing greenhouse power.			
2	Power Supply: Must have a separate Power Supply or integrated driver if the driver is replaceable.	M		
3	AC power cable: AC power cable must be a Minimum of 6-FT (1.83 m) long with Pigtail, and rated Maximum of 480 Volts AC.	M		
4	DC Power Cable: Direct Current Power Cable must be a Minimum of 6-FT (1.83 m) long.	M		
5	Spectrum: Bidder Information – The Spectrum requirements will create a sun-like spectrum inside the greenhouse, as the researchers require compact outdoor-like plants within the greenhouse.			
5a.	The spectrum of the modules must be broad (wide) spectrum which is designed for crop science applications in a greenhouse setting.	M		
5b.	The spectrum must be 37-40% in red, between 600-700nm and the PFD (photon flux density) must be continuously expressed (all wavelengths are expressed).	M		
5c.	The spectrum must be 19-24% in the blue, between 400-500nm and the PFD (photon flux density) must be continuously expressed (all wavelengths are expressed).	M		
5d.	The spectrum must be 34-36% in the green, between 500nm to 600nm and the PFD (photon flux density) must be continuously expressed (all	M		

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	wavelengths are expressed).			
5e.	The spectrum must be 2-6% Far-Red between 700nm and 780nm and the PFD (photon flux density) must be continuously expressed (all wavelengths are expressed).	M		
6	Light Output PPF: Light Output Photosynthetic Photon Flux (PPF) ( $\mu\text{mol/s}$ ), must be greater or equal to 1700.	M		
7	Form factor: The Form factor must be linear.	M		
8	Light Distribution: The Light Distribution must be between 118-120°.	M		
9	Mounting: Hangers (two for the lamps and two for the power pack) must be provided to mount lights on 1 5/8" square tubing. Metal hangers are acceptable – no cable hangers.	M		
10	Single-linear LED module which is slim and the shape of the modules (as this helps in avoiding shading of the greenhouse as the size is only a bit wider than the truss which they will be hung from). The Maximum dimension of the single-linear LED module (L x H x W) must be 38" to 48" x 4" x 3" with an acceptable variance of +/- 2 inches in height and width; <u>OR</u> a two-linear LED module is acceptable if each module is within the single-linear LED module dimension given and when mounted together the overall size is not larger	M		

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	than 38" to 48" x 4" x 13" (L x H x W) with a variance of +/- 2 inches in height and width.			
11	Thermal Management: The Thermal Management must be passively cool.	M		
12	IP Rating: IP Rating must be IP66 or IP67.	M		
13	Must be CSA approved.	M		

**ALL OTHER TERMS AND CONDITIONS REMAIN THE SAME**