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| **CUSTOMER INFORMATION** | |
| **DATE** |  |
| **COMPANY** |  |
| **POC** |  |
| **PHONE/E-MAIL** |  |

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| **THERMOCOUPLE** | | | | |
| **INSTRUMENT NAME2** | **WIRE LENGTH**  **VERIFIED** | **POLARITY SENSITIVITY CHECK4** | **RESISTANCE (Ω)5** | |
| **Pre-Ship** | **Pre-Test**  **@ ARC** |
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| NOTE:   1. **ADD ROWS AS NEEDED** 2. **INSTRUMENTATION NAME**: format for all Thermocouple Sensors:    1. THERMOCOUPLE ID: NUMBERING SEQUENCE ARE SERIAL STARTING AT 1       1. Example: K1; K2,……K##       2. Example: R1; R2; ……. R## 3. **WIRE LENGTH VERIFIED**: See **APPENDIX A** for minimum wire length to connect to the Arc Jet Data Harness 4. CONFIRM **POLARITY** OF CONNECTOR OR MARKED TC WIRE TERMINATION AVOID TC WIRE COLOR OR LABEL REVERSAL 5. **RESISTANCE** (in Ohms) ACROSS THERMOCOUPLE TERMINALS    1. Pre-Ship: Measurement before shipping    2. Pre-Test: Measurement when received before test 6. FOR ALL MEASUREMENTS, NASA OR CUSTOMER SHALL VERIFY SIMILAR MEASUREMENT AFTER DELIVERY TO ARC AND PRIOR TO TEST AND WILL NOTIFY TEST ENGINEER IF DISCREPANCY IS FOUND | | | | |

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| **PRESSURE TRANSDUCER (ONLY FOR CUSTOMER PROVIDED UNITS)** | | | | | | | |
| **INSTRUMENT NAME3** | **Cable or Tube Length** | **LEAK CHECK4** | | | **TRANSDUCER5** | | |
| **Acceptable** | **Pre-ship** | **Pre-Test @ ARC** | **Manufacturer** | **Serial Number** | **Range** |
| N/A |  |  |  |  |  |  |  |
| N/A |  |  |  |  |  |  |  |
| N/A |  |  |  |  |  |  |  |
| NOTE:   1. **ADD ROWS AS NEEDED** 2. NASA SUPPORT AND SETUP AGREEMENT PER PRE-PLANNING MEETING 3. **INSTRUMENTATION** **NAME**    1. Format:P1, P2; etc 4. **Cable or Tube Length**: Transducer cable /Plumbing information    1. **Length Meets minimum standard: APPENDIX A** to connect to the Arc Jet Data harness 5. MODEL TUBING AND PRESSURE PLUMBING SHALL BE VERIFIED BY **LEAK CHECK** – CUSTOMER SHALL PROVIDE ACCEPTABLE LEAK RATE FOR PRE-TEST INSPECTION. 6. **TRANSDUCER** –INFORMATION SHALL CORRESPOND TO TEST PLANNING INSTRUMENTATION CHECKLIST. CUSTOMER SHALL PROVIDE SPECIFICATION SHEET FOR EACH MODEL AND CALIBRATION SHEET FOR EACH TRANSDUCER. | | | | | | | |

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| **OTHER SYSTEMS, DEVICES OR SENSORS ON MODEL**  **(Consult with Test Engineer for Arc Jet Facility instrumentation support capability or compatibility)** | | | | |
| **DEVICE OR SYSTEM NAME2** | **VERIFICATION METHOD3** | | | **DOCUMENTATION4** |
| **Measurement** | **Pre-Ship** | **Pre-Test** |
| RC100  muDMS Sensor (19’ Fiber Optics) |  |  |  |  |
| Fiber Optic Cable w/Sensor (1’) |  |  |  |  |
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| NOTE:   1. **ADD ROWS AS NEEDED** TO LIST MODEL ASSOCIATED HARDWARE 2. **DEVICE OR SYSTEM NAME**: NASA SUPPORT AND SETUP OF CUSTOMER INSTRUMENTATION REQUIRES MUTUAL AGREEMENT DURING PRE-PLANNING MEETINGS, EXAMPLE INCLUDES    1. Fiber Optics Sensor or Networks    2. On-board and External Data Systems – Power and Analog connections    3. DC-motor / Actuator control (No AC Powered device in Test Box) 3. CUSTOMER SHALL PROVIDE DEVICE HEALTH **VERIFICATION** METHOD AND MEASURED VALUE BEFORE THE MODEL IS SHIPPED.    1. Provide Drawings or Schematics    2. Provide Checkout Method and Procedure    3. Attach additional Validation and Verification Records and Documentation. 4. CUSTOMER SHALL PROVIDE ALL NECESSARY **DOCUMENTATION** TO FACILITATE INSTALLATION AND USE. EXAMPLE INCLUDE:    1. Manufacturer Specification and User Document.    2. Instrument Calibration Reports | | | | |

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| **SPECIAL DATA SYSTEM REAL TIME DISPLAY REQUEST**  **(Discuss with Test Engineer for Arc Jet Facility instrumentation display capability)** | | | |
| **INSTRUMENT NAME3** | **DISPLAY TYPE4** | **Max EU5** | **DESCRIPTION6** |
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| NOTE:   1. **ADD ROWS AS NEEDED** 2. CONSULT WITH TEST ENGINEER FOR AVAILABLE DISPLAY TYPE 3. **INSTRUMENT NAME** FORMAT: DIFF\_K1, AVG\_P1P2 4. **DISPLAY** **TYPE** (Consult with Test Engineer for TYPE available)    1. Differential: DIFF\_K1    2. Average: AVG\_P1P5P7, etc 5. **Max EU**: Expected maximum temperature measured 6. **DESCRIPTION**: Brief comment on measurement expectation | | | |

Real Time Display



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| Channel | 100% Value  For graph |  | Channel |
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**APPENDIX A: MODEL INSTRUMENTATION LEAD LENGTH PER TEST FACILITY**

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| **MODEL INSTRUMENTATION LEAD WIRE MINIMUM LENGTHS** | | | | |
| **MODEL TYPE** | **IHF (2" Sting ID)** | **PTF** | **AHF (2" Sting ID)** | **TFD (2x9)** |
| **MODEL  (STAGNATION)** | **≤ 4-T/C:** minimum 12" length of Model Sensor wire from the end of the model holder ---------------- **> 4-T/C:** From above length, minimum 12”, add 4" for every 2 T/Cs (stagger) from end of model holder -------------  **Model Pressure tubing** (0.06" OD x 6"L SS- may be cut to length) |  | **≤ 4-T/C:** 1' length of Model Sensor wire from the end of the model holder **---------------- >4 Model Sensor wiring (TC, Heat, etc):** add 60" for each model sensor.  ----------------- **Model Pressure tubing** (0.125" OD x 6"L SS- may be cut to length) terminated to the transducer(s) located in the Instrumentation Tray with 48" to 60" of 0.125" OD Teflon pressure tubing. |  |
| **MODEL  (WEDGE)** | **With Plug and Play Adapter:**  4 each T/C Mini-Connector (Max) with 4" Model wiring or 1 each D25 Connector  (12 Differential Measurements) with 4" length model wiring. ----------------------------- **Without Plug and Play** <6 Sensors minimum 12” length from Wedge Model Holder exit. Stagger in pairs @ additional 4” Lead Length/pair  >6 Sensors: minimum 12” Lead length to D25M connector ---------------------------  **Model** **Pressure** **tubing** is 12" long, 0.06" OD, SS or Cu  Transducer wiring per TE agreement. |  | **With Plug and Play Adapter:** 4 each T/C Mini-Connector (Max) with 4" sensor wires beyond model adapter attachment point or the customer may install  1 each D25P Connector (12 Differential Measurements) with 4" length model wiring. ------------------------------ **Without Plug and Play** Use the Stagnation Model size and length information ------------------------------- **Model Pressure tubing** is 10" long, 0.06" OD, SS or Cu. Pressure transducer will be located into the Instrumentation Tray adding 60” Teflon tubing from the model. |  |
| **MODEL (PANEL or PLATE)** | 18" sensor wire length from model to Omega Mini Type U-M ----------------- **Model Pressure tubing** is 0.06"OD x 3"L in cavity, SS or Cu | 18" sensor wire length from model to connector ----------------- **Model Pressure tubing** is 0.06"OD x 3"L in cavity, SS or Cu |  | 18" sensor wire length from model to connector  ----------------- **Model Pressure tubing** is 0.06"OD x 8"L, SS or Cu |
| **FOR ALL OTHER MODEL INSTRUMENTATION QUESTIONS AND REQUIREMENTS - PLEASE CONSULT WITH THE TEST .ENGINEER(S)** | | | | |