OPTICAL INSTRUMENTATION REQUEST

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| **OPTICAL INTRUMENTATION INFORMATION** | | | | | | | | |
| Please submit the completed for to the test engineer tasked with Test series before the Test readiness review (TRR). This form will allow the principal investigator to determine the number of optical instrumentation required as well as include pertinent information. The first section titled section one will allow the PI to select the number of pyrometers to be selected. The section II will allow the user to determine the parameters for IR data processing. | | | | | | | | |
| **Test Series (title)** | | | Arc Jet TPS testing | | | **P.I.** | John Smith | |
| **Facility** | IHF | **Test Series Number (T.E.) assigned)** | | | 548 | **T.E.** | Enrique J. Carballo | |
| The units selected will be used for all optical instrumentation. | | | | | | | | |
|  | | | | **Instrument** | | | | **E** |
| **Pyrometer #1 (temperature range, spectral range, FOV)** | | | | Mikron M190R2 (900-3000, 2- color,180:1) | | | | 1 |
| **Pyrometer #2 (temperature range, spectral range, FOV)** | | | | Mikron M190H (600- 3000, 0.78-1.06, 300:1) | | | | 1 |
| **Pyrometer #3 (temperature range, spectral range, FOV)** | | | | Mikron M668L (815-3000, 0.78-1.06, 300:1) | | | | 1 |
| **Infrared Camera #1 (temperature range, spectral range, FOV)** | | | | Mikron/LumaSense MCS640 (800- 3000, 0.78-1.06, 75,50,25,12,8mm) | | | | 1 |
| Please consult with Test Engineers before selection as T.E. may have different recommendations for pyrometers selection. | | | | | | | | |
| **Comments:** Note: All instruments located outside of test box area will requires a transmission correction to account for losses through windows and in some cases mirrored views. The corrections will be performed using a blackbody heat sources and a transfer standard instrument by TSF optical engineer. All emissivity corrections will fall upon the responsibility of the Principal Investigator.Pyrometer temperature data will be provided in test data package by test engineer. Each Pyrometer being utilized will have two designated channels named \_E1 and\_E2. The E1 Channel is the output from the pyrometers without correction for window losses. The \_E2 channel has been corrected for transmission losses through window**.** | | | | | | | | |

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| **Thermo Imaging Video** | |
| **Video Format** | AVI |
| **ROI displayed** |  |
| **Emissivity (0-1)** | 1 |
| **Comments** | *Lastly, videos are the third and last type of data in the Thermal data package. Typically, each video will begin moments before model insertion until the model has been removed.* |

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| **PYROMETER TARGET DESIGNATIONS** | |
| **Pyrometer #1** |  |
| **Comments:**  *Please specify the dimensions of the target location as well as the target size requirement.* *Images maybe be attached in the right column indicating each of the target locations, ideally dimensions included in the images would be preferred.* |
| **Pyrometer #2** |
| **Comments:** Click or tap here to enter text. |
| **Pyrometer #3** |
| **Comments:** Click or tap here to enter text. |

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| **INFRARED CAMERA DATA PROCESSING** | | | | |
| **Line Profiles** | | | | |
| **# of Line Profile Reports** | | 4 | |  |
| **Emissivity (0-1)**  1 | | | |
| **ROI (Region of Interest)** | | | |
| 1 | broken line | | green |
| 2 | line | | purple |
| 3 | circle | | red |
| 4 | Choose an item. | | Select color |
| **Comments**: *Line Profiles in our case refer to a specific type of data report given to customers as a portion of the Thermal Imaging packet. Line Profiles display temperature values along a specified line. Beside for the thickness, lines are fully customizable in terms of orientation or distance as long as it resides within the overall image being captured. Up to four lines may be created per report with additional lines possible if requested. Each Line Profile Report generated will contain an image of the model, a graph displaying the temperature as a function of the line, and tabulated temperature data corresponding to the line pixel distance for one specific frame. Typical reports contain 3 to 5 reports with each representing a single frame within the video sequence. Images may be attached in the right column with simple lines indicating the position and lengths.* | | | |

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| **Time-Temperature Profiles** | | | | |
| **Time Temp Graph** | |  | |  |
| **Emissivity** | | 1 | |
| ROI Displayed | | | |
| # | shape | | Color |
| 1 | broken line | | green |
| 2 | line | | purple |
| 3 | circle | | red |
| 4 | Choose an item. | | Select color |
| Comments: *Time Temperature Reports refer to the second type of data given to customers as a portion of the Thermal Imaging packet. Time Temperature reports provide 3 types (Minimum, Average, and Maximum) of temperature data for individual ROIs as a function of the video sequence in frames. Generally, the report generated will contain an image of the model, graph displaying the ROI temperature as a function of the frames, and the ROI tabulated data. The user has the option of selecting multiple reports in either minimum, average, or maximum value. For example, if a maximum report is chosen and the shape (circle) above is chosen then the highest temperature within the circle will be displayed and recorded on the graph and data tables. A maximum of 4 ROIs may be selected for each report. Images may be attached in the right column with simple lines or circles.* | | | |