December 10, 2019

Gary Rosenfield
RCS Rocket Motor Components, Inc.
2113 West 850 North Street
Cedar City, UT 84721

Dear Mr. Rosenfield,

The Aerotech M2050X-P single use DMS motor was tested on December 7, 2019 and is in compliance with NFPA 1125. The motor is certified for hobby rocketry use by the members of the Tripoli Rocketry Association and all approving organizations with reciprocal certifying agreements.

<table>
<thead>
<tr>
<th>Motor Manufacturer</th>
<th>Aerotech Division, RCS Rocket Motor Components</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturer’s Designation</td>
<td>M2050X-P single use</td>
</tr>
<tr>
<td>Propellant</td>
<td>Propellant X</td>
</tr>
<tr>
<td>TMT Nomenclature</td>
<td>5493 M2048</td>
</tr>
</tbody>
</table>

- Diameter: 3” (75 mm)
- Overall Length: 27.547” (699.7 mm)
- L Inside Thrust Ring: 25.813” (655.6 mm)
- L Outside Thrust Ring: 1.734” (44.0 mm)

- Loaded Mass: 10.05 lb (4558.6 g)
- Propellant Mass: 5.00* (2268 g*)
- Burnout Mass: 4.60 lb (2086.52 g)

* = data from manufacturer

- Burn time: 2.7, 2.662 sec
- Total Impulse: 1234.95 lbf.s (5493.35 N.s)
- Max Impulse: 571.96 lbf (2544.2 N)
Average Impulse: 460.31 lbf 2047.6 N
Number of Motors Tested: 2
Casing Temp. [NFPA 1125 7.4.1]: Passed

Sincerely,

Alan C. Whitmore
Chair, Tripoli Motor Testing