December 10, 2019

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

Dear Mr. Rosenfield,

The Aerotech H169WS-13 single-use 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.

Motor Manufacturer: Aerotech Division, RCS Rocket Motor Components
Manufacturer’s Designation: H169WS-13 [single use]
Propellant: Super White Lightning
TMT Nomenclature: 233 H169

Diameter: 1.142” 29 mm
Overall Length: 8.688” 220.7 mm
L. Inside Thrust Ring: 8.125” 206.4 mm
L. Outside Thrust Ring: 0.563” 14.3 mm

Loaded Mass: 0.444 lb 202.2 g
Propellant Mass: 0.247 lb* 112 g*
Burnout Mass: 0.178 lb 80.9 g

*B = data provided by manufacturer

Burn time: 1.38 ± 0.02 sec
Total Impulse: 52.37 ± 0.26 lbf.s 232.95 ± 1.16 N.s
Max Impulse: 52.02 ± 1.23 lbf 231.41 ± 5.48 N
Average Impulse: 37.95 ± 0.96 lbf 168.8 ± 4.26 N

Number of Motors Tested: 6

Delay Time Data
- Nominal: 13 s
- Measured: 11.99, 11.16 s
- 9 s: 9.61, 9.58 s
- 5 s: 6.24, 6.05 s

Casing Temp. [NFPA 1125 7.4.1]: Passed

Sincerely,

Alan C. Whitmore
Chair, Tripoli Motor Testing