

# Canadian Association of Rocketry



## ***Rocket Motor Certification: June 6-7, 2014 Session***

Submitted to the CAR Executive June 17<sup>st</sup>, 2014

# L'Association Canadienne De Fuséologie

## Introduction

A motor testing session was held at the Cesaroni Technology Incorporated facility in Gormley, Ontario on June 6-7<sup>th</sup>, 2014.

In total, 18 motors were certified with 103 firings over two days. The total fired impulse was 105,842 N-sec (just into the 'Q' range). This session sees the arrival of a new slow burning propellant, the Mellow. Seven motors use the new propellant and will be found in 29mm, 38mm, 54mm and 75mm. Seven of the motors used White propellant (including 1 Moonburner), the others are:

- Skidmark-Longburn
- Classic
- Blue Streak
- White Thunder

During this session a boat tail threaded retaining ring was certified on the Pro75 hardware. The test was performed on a Pro75-2G-Vmax.

The motors ranged from a new Pro24-2G (Blue Streak, 50 N-s) up to a Pro98-6GXL (White Moonburner 16,803 N-s).

While these motors were certified in Canada, a reciprocal agreement between the Canadian Association of Rocketry, the Tripoli Rocketry Association and the National Association of Rocketry means they may be flown in many jurisdictions.

I am very pleased to announce the certification of these eighteen (18) new reloads from Cesaroni Technology, Inc. Individual certification letters follow for each motor. These letters and the accompanying thrust curves will be available on the official CAR-ACF website soon.

Respectfully submitted,

André Choquette  
Chair of CAR Motor Certification

## Contents

Introduction.....	2
Certified Motors.....	4
CTI 53-F70-WT-14A (CTI Pro24-2G).....	4
CTI 50-F51-BS-13A (CTI Pro24-2G).....	5
CTI 53-F32-WH-12A (CTI Pro29-1G).....	6
CTI 56-F31-CL-12A (CTI Pro29-1G).....	7
CTI 143-G33-MY-9A (CTI Pro29-3G).....	8
CTI 186-H42-MY-10A (CTI Pro29-4G).....	9
CTI 234-H53-MY-12A (CTI Pro29-5G).....	10
CTI 395-I55-MY-9A (CTI Pro38-3G).....	11
CTI 644-J94-MY-P (CTI Pro38-5G).....	12
CTI 949-J150-MY-P (CTI Pro38-6GXL).....	13
CTI 2645-L265-MY-P (CTI Pro54-6GXL).....	14
CTI 1711-K520-WH-17A (CTI Pro54-4G).....	15
CTI 2130-K600-WH-17A (CTI Pro54-5G).....	16
CTI 2377-K711-WH-18A (CTI Pro54-6G).....	17
CTI 699-J145-SK-LB-19A (CTI Pro54-2G).....	18
CTI 5198-M1101-WH-P (CTI Pro75-4G).....	19
CTI 4937-L395-MY-P (CTI Pro75-5G).....	20
CTI 16803-N1560-WH-MB-P (CTI Pro98-6GXL).....	21

## Certified Motors

### CTI 53-F70-WT-14A (CTI Pro24-2G)

Canadian Association of Rocketry  
 CAR Motor Certification  
 c/o 1518-3<sup>rd</sup> Ave. S.  
 Lethbridge, AB  
 T1J 0K8

June 17<sup>st</sup>, 2014

Cesaroni Technology Incorporated  
 2561 Stouffville Road  
 Gormley, Ontario  
 L0H 1G0

Dear Dr. Jeroen Louwers,

The **CTI 53-F70-WT-14A** rocket motor was tested June 6<sup>th</sup>, 2014 and is in compliance with the certification requirements and standards of the Canadian Association of Rocketry (CAR-ACF). The motor is hereby certified for hobby rocketry use by the members of CAR-ACF and any other rocketry associations with current reciprocal motor certification agreements in place with CAR-ACF.

<b>CAR Designation</b>	<b>CTI 53-F70-WT-14A</b>	<b>Test Date</b>	June 6 <sup>th</sup> , 2014
<b>Manufacturer Designation</b>	<b>CTI 53-F70-14A</b>	<b>Manufacturer</b>	Cesaroni Technology Inc.
<b>Propellant</b>	<i>White Thunder</i>	<b>Hardware</b>	Pro24-2G
<b>Single-Use/Reload/Hybrid</b>	Reloadable	<b>Motor Dimensions</b>	24mm x 101mm
<b>Loaded Weight</b>	73 g	<b>Total Impulse</b>	52.9 N-s (11.9 lb.s)
<b>Burnout Weight</b>	44 g	<b>Maximum Thrust</b>	97.0 N (21.8 lb)
<b>Propellant Weight</b>	22.5 g	<b>Average Thrust</b>	69.1 N (15.5 lb)
<b>Delays Tested</b>	14 - 5 s, adjustable	<b>Specific Impulse (Isp)</b>	239.45 s
<b>Samples per second</b>	1000	<b>Burn time</b>	0.77 s
<b>Notes</b>	32.2% F		

Respectfully submitted,

André Choquette  
 Chairman, CAR Motor Certification

## CTI 50-F51-BS-13A (CTI Pro24-2G)

Canadian Association of Rocketry  
 CAR Motor Certification  
 c/o 1518-3<sup>rd</sup> Ave. S.  
 Lethbridge, AB  
 T1J 0K8

June 17<sup>st</sup>, 2014

Cesaroni Technology Incorporated  
 2561 Stouffville Road  
 Gormley, Ontario  
 L0H 1G0

Dear Dr. Jeroen Louwers,

The **CTI 50-F51-BS-13A** rocket motor was tested June 6<sup>th</sup>, 2014 and is in compliance with the certification requirements and standards of the Canadian Association of Rocketry (CAR-ACF). The motor is hereby certified for hobby rocketry use by the members of CAR-ACF and any other rocketry associations with current reciprocal motor certification agreements in place with CAR-ACF.

<b>CAR Designation</b>	<b>CTI 50-F51-BS-13A</b>	<b>Test Date</b>	June 6 <sup>th</sup> , 2014
<b>Manufacturer Designation</b>	<b>CTI 50-F51-13A</b>	<b>Manufacturer</b>	Cesaroni Technology Inc.
<b>Propellant</b>	<i>Blue Streak</i>	<b>Hardware</b>	Pro24-2G
<b>Single-Use/Reload/Hybrid</b>	Reloadable	<b>Motor Dimensions</b>	24mm x 101mm
<b>Loaded Weight</b>	73 g	<b>Total Impulse</b>	49.9 N-s (11.2 lb.s)
<b>Burnout Weight</b>	45 g	<b>Maximum Thrust</b>	69.4 N (15.6 lb)
<b>Propellant Weight</b>	22.0 g	<b>Average Thrust</b>	49.6 N (11.2 lb)
<b>Delays Tested</b>	13 - 4 s, adjustable	<b>Specific Impulse (Isp)</b>	231.02 s
<b>Samples per second</b>	1000	<b>Burn time</b>	1.00 s
<b>Notes</b>	24.7% F		

Respectfully submitted,

André Choquette  
 Chairman, CAR Motor Certification

## CTI 53-F32-WH-12A (CTI Pro29-1G)

Canadian Association of Rocketry  
 CAR Motor Certification  
 c/o 1518-3<sup>rd</sup> Ave. S.  
 Lethbridge, AB  
 T1J 0K8

June 17<sup>st</sup>, 2014

Cesaroni Technology Incorporated  
 2561 Stouffville Road  
 Gormley, Ontario  
 L0H 1G0

Dear Dr. Jeroen Louwers,

The **CTI 53-F32-WH-12A** rocket motor was tested June 6<sup>th</sup>, 2014 and is in compliance with the certification requirements and standards of the Canadian Association of Rocketry (CAR-ACF). The motor is hereby certified for hobby rocketry use by the members of CAR-ACF and any other rocketry associations with current reciprocal motor certification agreements in place with CAR-ACF.

<b>CAR Designation</b>	<b>CTI 53-F32-WH-12A</b>	<b>Test Date</b>	June 6 <sup>th</sup> , 2014
<b>Manufacturer Designation</b>	CTI 53-F32-12A	<b>Manufacturer</b>	Cesaroni Technology Inc.
<b>Propellant</b>	<i>White</i>	<b>Hardware</b>	Pro29-1G
<b>Single-Use/Reload/Hybrid</b>	Reloadable	<b>Motor Dimensions</b>	29mm x 98mm
<b>Loaded Weight</b>	107 g	<b>Total Impulse</b>	52.8 N-s (11.9 lb.s)
<b>Burnout Weight</b>	70 g	<b>Maximum Thrust</b>	49.3 N (11.1 lb)
<b>Propellant Weight</b>	29.9 g	<b>Average Thrust</b>	31.6 N (7.1 lb)
<b>Delays Tested</b>	12 - 3 s, adjustable	<b>Specific Impulse (Isp)</b>	180.06 s
<b>Samples per second</b>	1000	<b>Burn time</b>	1.67 s
<b>Notes</b>	32.1% F		

Respectfully submitted,

André Choquette  
 Chairman, CAR Motor Certification

## CTI 56-F31-CL-12A (CTI Pro29-1G)

Canadian Association of Rocketry  
 CAR Motor Certification  
 c/o 1518-3<sup>rd</sup> Ave. S.  
 Lethbridge, AB  
 T1J 0K8

June 17<sup>th</sup>, 2014

Cesaroni Technology Incorporated  
 2561 Stouffville Road  
 Gormley, Ontario  
 L0H 1G0

Dear Dr. Jeroen Louwers,

The **CTI 56-F31-CL-12A** rocket motor was tested June 6<sup>th</sup>, 2014 and is in compliance with the certification requirements and standards of the Canadian Association of Rocketry (CAR-ACF). The motor is hereby certified for hobby rocketry use by the members of CAR-ACF and any other rocketry associations with current reciprocal motor certification agreements in place with CAR-ACF.

<b>CAR Designation</b>	<b>CTI 56-F31-CL-12A</b>	<b>Test Date</b>	June 6 <sup>th</sup> , 2014
<b>Manufacturer Designation</b>	CTI 56-F31-12A	<b>Manufacturer</b>	Cesaroni Technology Inc.
<b>Propellant</b>	<i>Classic</i>	<b>Hardware</b>	Pro29-1G
<b>Single-Use/Reload/Hybrid</b>	Reloadable	<b>Motor Dimensions</b>	29mm x 98mm
<b>Loaded Weight</b>	102 g	<b>Total Impulse</b>	55.5 N-s (12.5 lb.s)
<b>Burnout Weight</b>	70 g	<b>Maximum Thrust</b>	65.0 N (14.6 lb)
<b>Propellant Weight</b>	25.7 g	<b>Average Thrust</b>	31.1 N (7.0 lb)
<b>Delays Tested</b>	12 - 3 s, adjustable	<b>Specific Impulse (Isp)</b>	220.15 s
<b>Samples per second</b>	1000	<b>Burn time</b>	1.78 s
<b>Notes</b>	38.7% F		

Respectfully submitted,

André Choquette  
 Chairman, CAR Motor Certification

## CTI 143-G33-MY-9A (CTI Pro29-3G)

Canadian Association of Rocketry  
 CAR Motor Certification  
 c/o 1518-3<sup>rd</sup> Ave. S.  
 Lethbridge, AB  
 T1J 0K8

June 17<sup>st</sup>, 2014

Cesaroni Technology Incorporated  
 2561 Stouffville Road  
 Gormley, Ontario  
 L0H 1G0

Dear Dr. Jeroen Louwers,

The **CTI 143-G33-MY-9A** rocket motor was tested June 6<sup>th</sup>, 2014 and is in compliance with the certification requirements and standards of the Canadian Association of Rocketry (CAR-ACF). The motor is hereby certified for hobby rocketry use by the members of CAR-ACF and any other rocketry associations with current reciprocal motor certification agreements in place with CAR-ACF.

<b>CAR Designation</b>	<b>CTI 143-G33-MY-9A</b>	<b>Test Date</b>	June 6 <sup>th</sup> , 2014
<b>Manufacturer Designation</b>	CTI 143-G33-9A	<b>Manufacturer</b>	Cesaroni Technology Inc.
<b>Propellant</b>	<i>Mellow</i>	<b>Hardware</b>	Pro29-3G
<b>Single-Use/Reload/Hybrid</b>	Reloadable	<b>Motor Dimensions</b>	29mm x 187mm
<b>Loaded Weight</b>	197 g	<b>Total Impulse</b>	143.1 N-s (32.2 lb.s)
<b>Burnout Weight</b>	108 g	<b>Maximum Thrust</b>	66.1 N (14.9 lb)
<b>Propellant Weight</b>	79.1 g	<b>Average Thrust</b>	32.7 N (7.3 lb)
<b>Delays Tested</b>	9 - 2 s, adjustable	<b>Specific Impulse (Isp)</b>	184.14 s
<b>Samples per second</b>	1000	<b>Burn time</b>	4.38 s
<b>Notes</b>	78.9% G		

Respectfully submitted,

André Choquette  
 Chairman, CAR Motor Certification



## CTI 186-H42-MY-10A (CTI Pro29-4G)

Canadian Association of Rocketry  
 CAR Motor Certification  
 c/o 1518-3<sup>rd</sup> Ave. S.  
 Lethbridge, AB  
 T1J 0K8

June 17<sup>st</sup>, 2014

Cesaroni Technology Incorporated  
 2561 Stouffville Road  
 Gormley, Ontario  
 L0H 1G0

Dear Dr. Jeroen Louwers,

The **CTI 186-H42-MY-10A** rocket motor was tested June 6<sup>th</sup>, 2014 and is in compliance with the certification requirements and standards of the Canadian Association of Rocketry (CAR-ACF). The motor is hereby certified for hobby rocketry use by the members of CAR-ACF and any other rocketry associations with current reciprocal motor certification agreements in place with CAR-ACF.

<b>CAR Designation</b>	<b>CTI 186-H42-MY-10A</b>	<b>Test Date</b>	June 6 <sup>th</sup> , 2014
<b>Manufacturer Designation</b>	CTI 186-H42-10A	<b>Manufacturer</b>	Cesaroni Technology Inc.
<b>Propellant</b>	<i>Mellow</i>	<b>Hardware</b>	Pro29-4G
<b>Single-Use/Reload/Hybrid</b>	Reloadable	<b>Motor Dimensions</b>	29mm x 231mm
<b>Loaded Weight</b>	242 g	<b>Total Impulse</b>	186.0 N-s (41.8 lb.s)
<b>Burnout Weight</b>	125 g	<b>Maximum Thrust</b>	83.5 N (18.8 lb)
<b>Propellant Weight</b>	105.5 g	<b>Average Thrust</b>	42.2 N (9.5 lb)
<b>Delays Tested</b>	10 - 1 s, adjustable	<b>Specific Impulse (Isp)</b>	179.31 s
<b>Samples per second</b>	1000	<b>Burn time</b>	4.41 s
<b>Notes</b>	16.2% H		

Respectfully submitted,

André Choquette  
 Chairman, CAR Motor Certification

## CTI 234-H53-MY-12A (CTI Pro29-5G)

Canadian Association of Rocketry  
 CAR Motor Certification  
 c/o 1518-3<sup>rd</sup> Ave. S.  
 Lethbridge, AB  
 T1J 0K8

June 17<sup>st</sup>, 2014

Cesaroni Technology Incorporated  
 2561 Stouffville Road  
 Gormley, Ontario  
 L0H 1G0

Dear Dr. Jeroen Louwers,

The **CTI 234-H53-MY-12A** rocket motor was tested June 6<sup>th</sup>, 2014 and is in compliance with the certification requirements and standards of the Canadian Association of Rocketry (CAR-ACF). The motor is hereby certified for hobby rocketry use by the members of CAR-ACF and any other rocketry associations with current reciprocal motor certification agreements in place with CAR-ACF.

<b>CAR Designation</b>	<b>CTI 234-H53-MY-12A</b>	<b>Test Date</b>	June 6 <sup>th</sup> , 2014
<b>Manufacturer Designation</b>	CTI 234-H53-12A	<b>Manufacturer</b>	Cesaroni Technology Inc.
<b>Propellant</b>	<i>Mellow</i>	<b>Hardware</b>	Pro29-5G
<b>Single-Use/Reload/Hybrid</b>	Reloadable	<b>Motor Dimensions</b>	29mm x 276mm
<b>Loaded Weight</b>	286 g	<b>Total Impulse</b>	234.2 N-s (52.7 lb.s)
<b>Burnout Weight</b>	141 g	<b>Maximum Thrust</b>	101.8.1 N (22.9 lb)
<b>Propellant Weight</b>	131.9 g	<b>Average Thrust</b>	52.7 N (11.9 lb)
<b>Delays Tested</b>	12 - 3 s, adjustable	<b>Specific Impulse (Isp)</b>	180.94 s
<b>Samples per second</b>	1000	<b>Burn time</b>	4.44 s
<b>Notes</b>	46.4% H		

Respectfully submitted,

André Choquette  
 Chairman, CAR Motor Certification

## CTI 395-I55-MY-9A (CTI Pro38-3G)

Canadian Association of Rocketry  
 CAR Motor Certification  
 c/o 1518-3<sup>rd</sup> Ave. S.  
 Lethbridge, AB  
 T1J 0K8

June 17<sup>st</sup>, 2014

Cesaroni Technology Incorporated  
 2561 Stouffville Road  
 Gormley, Ontario  
 L0H 1G0

Dear Dr. Jeroen Louwers,

The **CTI 395-I55-MY-9A** rocket motor was tested June 6<sup>th</sup>, 2014 and is in compliance with the certification requirements and standards of the Canadian Association of Rocketry (CAR-ACF). The motor is hereby certified for hobby rocketry use by the members of CAR-ACF and any other rocketry associations with current reciprocal motor certification agreements in place with CAR-ACF.

<b>CAR Designation</b>	<b>CTI 395-I55-MY-9A</b>	<b>Test Date</b>	June 6 <sup>th</sup> , 2014
<b>Manufacturer Designation</b>	CTI 395-I55-9A	<b>Manufacturer</b>	Cesaroni Technology Inc.
<b>Propellant</b>	<i>Mellow</i>	<b>Hardware</b>	Pro38-3G
<b>Single-Use/Reload/Hybrid</b>	Reloadable	<b>Motor Dimensions</b>	38mm x 245mm
<b>Loaded Weight</b>	437 g	<b>Total Impulse</b>	394.6 N-s (88.7 lb.s)
<b>Burnout Weight</b>	194 g	<b>Maximum Thrust</b>	94.5 N (21.2 lb)
<b>Propellant Weight</b>	223.8 g	<b>Average Thrust</b>	55.2 N (12.4 lb)
<b>Delays Tested</b>	9 - 2 s, adjustable	<b>Specific Impulse (Isp)</b>	179.67 s
<b>Samples per second</b>	1000	<b>Burn time</b>	7.15 s
<b>Notes</b>	23.3% I		

Respectfully submitted,

André Choquette  
 Chairman, CAR Motor Certification

## CTI 644-J94-MY-P (CTI Pro38-5G)

Canadian Association of Rocketry  
 CAR Motor Certification  
 c/o 1518-3<sup>rd</sup> Ave. S.  
 Lethbridge, AB  
 T1J 0K8

June 17<sup>st</sup>, 2014

Cesaroni Technology Incorporated  
 2561 Stouffville Road  
 Gormley, Ontario  
 L0H 1G0

Dear Dr. Jeroen Louwers,

The **CTI 644-J94-MY-P** rocket motor was tested June 6<sup>th</sup>, 2014 and is in compliance with the certification requirements and standards of the Canadian Association of Rocketry (CAR-ACF). The motor is hereby certified for hobby rocketry use by the members of CAR-ACF and any other rocketry associations with current reciprocal motor certification agreements in place with CAR-ACF.

<b>CAR Designation</b>	<b>CTI 644-J94-MY-P</b>	<b>Test Date</b>	June 6 <sup>th</sup> , 2014
<b>Manufacturer Designation</b>	CTI 644-J94-P	<b>Manufacturer</b>	Cesaroni Technology Inc.
<b>Propellant</b>	<i>White</i>	<b>Hardware</b>	Pro38-5G
<b>Single-Use/Reload/Hybrid</b>	Reloadable	<b>Motor Dimensions</b>	38mm x 367mm
<b>Loaded Weight</b>	660 g	<b>Total Impulse</b>	644.0 N-s (144.8 lb.s)
<b>Burnout Weight</b>	267 g	<b>Maximum Thrust</b>	172.5 N (38.8 lb)
<b>Propellant Weight</b>	372.9 g	<b>Average Thrust</b>	94.4 N (21.2 lb)
<b>Delays Tested</b>	Plugged	<b>Specific Impulse (Isp)</b>	175.86 s
<b>Samples per second</b>	1000	<b>Burn time</b>	6.82 s
<b>Notes</b>	0.6% J		

Respectfully submitted,

André Choquette  
 Chairman, CAR Motor Certification

## CTI 949-J150-MY-P (CTI Pro38-6GXL)

Canadian Association of Rocketry  
 CAR Motor Certification  
 c/o 1518-3<sup>rd</sup> Ave. S.  
 Lethbridge, AB  
 T1J 0K8

June 17<sup>th</sup>, 2014

Cesaroni Technology Incorporated  
 2561 Stouffville Road  
 Gormley, Ontario  
 L0H 1G0

Dear Dr. Jeroen Louwers,

The **CTI 949-J150-MY-P** rocket motor was tested June 6<sup>th</sup>, 2014 and is in compliance with the certification requirements and standards of the Canadian Association of Rocketry (CAR-ACF). The motor is hereby certified for hobby rocketry use by the members of CAR-ACF and any other rocketry associations with current reciprocal motor certification agreements in place with CAR-ACF.

<b>CAR Designation</b>	<b>CTI 949-J150-MY-P</b>	<b>Test Date</b>	June 6 <sup>th</sup> , 2014
<b>Manufacturer Designation</b>	CTI 949-J150-P	<b>Manufacturer</b>	Cesaroni Technology Inc.
<b>Propellant</b>	<i>Mellow</i>	<b>Hardware</b>	Pro38-6GXL
<b>Single-Use/Reload/Hybrid</b>	Reloadable	<b>Motor Dimensions</b>	38mm x 500mm
<b>Loaded Weight</b>	951 g	<b>Total Impulse</b>	949.2 N-s (213.4 lb.s)
<b>Burnout Weight</b>	355 g	<b>Maximum Thrust</b>	343.2 N (77.2 lb)
<b>Propellant Weight</b>	567.7 g	<b>Average Thrust</b>	148.4 N (33.4 lb)
<b>Delays Tested</b>	Plugged	<b>Specific Impulse (Isp)</b>	170.42 s
<b>Samples per second</b>	1000	<b>Burn time</b>	6.40 s
<b>Notes</b>	48.3% J		

Respectfully submitted,

André Choquette  
 Chairman, CAR Motor Certification

## CTI 2645-L265-MY-P (CTI Pro54-6GXL)

Canadian Association of Rocketry  
 CAR Motor Certification  
 c/o 1518-3<sup>rd</sup> Ave. S.  
 Lethbridge, AB  
 T1J 0K8

June 17<sup>st</sup>, 2014

Cesaroni Technology Incorporated  
 2561 Stouffville Road  
 Gormley, Ontario  
 L0H 1G0

Dear Dr. Jeroen Louwers,

The **2645-L265-MY-P** rocket motor was tested June 7<sup>th</sup>, 2014 and is in compliance with the certification requirements and standards of the Canadian Association of Rocketry (CAR-ACF). The motor is hereby certified for hobby rocketry use by the members of CAR-ACF and any other rocketry associations with current reciprocal motor certification agreements in place with CAR-ACF.

<b>CAR Designation</b>	<b>CTI 2645-L265-MY-P</b>	<b>Test Date</b>	June 7 <sup>th</sup> , 2014
<b>Manufacturer Designation</b>	CTI 2645-L265-P	<b>Manufacturer</b>	Cesaroni Technology Inc.
<b>Propellant</b>	<i>Mellow</i>	<b>Hardware</b>	Pro54-6GXL
<b>Single-Use/Reload/Hybrid</b>	Reloadable	<b>Motor Dimensions</b>	54mm x 649mm
<b>Loaded Weight</b>	2481 g	<b>Total Impulse</b>	2644.6 N-s (594.5 lb.s)
<b>Burnout Weight</b>	837 g	<b>Maximum Thrust</b>	471.1 N (105.9 lb)
<b>Propellant Weight</b>	1603 g	<b>Average Thrust</b>	266.8 N (60.0 lb)
<b>Delays Tested</b>	Plugged	<b>Specific Impulse (Isp)</b>	168.28 s
<b>Samples per second</b>	1000	<b>Burn time</b>	9.91 s
<b>Notes</b>	3.3% L		

Respectfully submitted,

André Choquette  
 Chairman, CAR Motor Certification

## CTI 1711-K520-WH-17A (CTI Pro54-4G)

Canadian Association of Rocketry  
 CAR Motor Certification  
 c/o 1518-3<sup>rd</sup> Ave. S.  
 Lethbridge, AB  
 T1J 0K8

June 17<sup>st</sup>, 2014

Cesaroni Technology Incorporated  
 2561 Stouffville Road  
 Gormley, Ontario  
 L0H 1G0

Dear Dr. Jeroen Louwers,

The **1711-K520-WH-17A** rocket motor was tested June 7<sup>th</sup>, 2014 and is in compliance with the certification requirements and standards of the Canadian Association of Rocketry (CAR-ACF). The motor is hereby certified for hobby rocketry use by the members of CAR-ACF and any other rocketry associations with current reciprocal motor certification agreements in place with CAR-ACF.

<b>CAR Designation</b>	<b>CTI 1711-K520-WH-17A</b>	<b>Test Date</b>	June 7 <sup>th</sup> , 2014
<b>Manufacturer Designation</b>	CTI 1711-K520-17A	<b>Manufacturer</b>	Cesaroni Technology Inc.
<b>Propellant</b>	<i>White</i>	<b>Hardware</b>	Pro54-4G
<b>Single-Use/Reload/Hybrid</b>	Reloadable	<b>Motor Dimensions</b>	54mm x 404mm
<b>Loaded Weight</b>	1576 g	<b>Total Impulse</b>	1710.5 N-s (384.5 lb.s)
<b>Burnout Weight</b>	588 g	<b>Maximum Thrust</b>	619.2 N (139.2 lb)
<b>Propellant Weight</b>	944 g	<b>Average Thrust</b>	520.2 N (116.9 lb)
<b>Delays Tested</b>	17 - 7 s, adjustable	<b>Specific Impulse (Isp)</b>	184.71 s
<b>Samples per second</b>	1000	<b>Burn time</b>	3.29 s
<b>Notes</b>	33.6% K		

Respectfully submitted,

André Choquette  
 Chairman, CAR Motor Certification



## CTI 2130-K600-WH-17A (CTI Pro54-5G)

Canadian Association of Rocketry  
 CAR Motor Certification  
 c/o 1518-3<sup>rd</sup> Ave. S.  
 Lethbridge, AB  
 T1J 0K8

June 17<sup>st</sup>, 2014

Cesaroni Technology Incorporated  
 2561 Stouffville Road  
 Gormley, Ontario  
 L0H 1G0

Dear Dr. Jeroen Louwers,

The **2130-K600-WH-17A** rocket motor was tested June 6<sup>th</sup>, 2014 and is in compliance with the certification requirements and standards of the Canadian Association of Rocketry (CAR-ACF). The motor is hereby certified for hobby rocketry use by the members of CAR-ACF and any other rocketry associations with current reciprocal motor certification agreements in place with CAR-ACF.

<b>CAR Designation</b>	<b>CTI 2130-K600-WH-17A</b>	<b>Test Date</b>	June 6 <sup>th</sup> , 2014
<b>Manufacturer Designation</b>	CTI 2130-K600-17A	<b>Manufacturer</b>	Cesaroni Technology Inc.
<b>Propellant</b>	<i>White</i>	<b>Hardware</b>	Pro54-5G
<b>Single-Use/Reload/Hybrid</b>	Reloadable	<b>Motor Dimensions</b>	54mm x 488mm
<b>Loaded Weight</b>	1892 g	<b>Total Impulse</b>	2129.8 N-s (478.8 lb.s)
<b>Burnout Weight</b>	654 g	<b>Maximum Thrust</b>	799.7 N (179.8 lb)
<b>Propellant Weight</b>	1180 g	<b>Average Thrust</b>	600.3 N (134.9 lb)
<b>Delays Tested</b>	17 - 7 s, adjustable	<b>Specific Impulse (Isp)</b>	183.98 s
<b>Samples per second</b>	1000	<b>Burn time</b>	3.55 s
<b>Notes</b>	66.4% K		

Respectfully submitted,

André Choquette  
 Chairman, CAR Motor Certification



## CTI 2377-K711-WH-18A (CTI Pro54-6G)

Canadian Association of Rocketry  
 CAR Motor Certification  
 c/o 1518-3<sup>rd</sup> Ave. S.  
 Lethbridge, AB  
 T1J 0K8

June 17<sup>st</sup>, 2014

Cesaroni Technology Incorporated  
 2561 Stouffville Road  
 Gormley, Ontario  
 L0H 1G0

Dear Dr. Jeroen Louwers,

The **2377-K711-WH-18A** rocket motor was tested June 7<sup>th</sup>, 2014 and is in compliance with the certification requirements and standards of the Canadian Association of Rocketry (CAR-ACF). The motor is hereby certified for hobby rocketry use by the members of CAR-ACF and any other rocketry associations with current reciprocal motor certification agreements in place with CAR-ACF.

<b>CAR Designation</b>	<b>CTI 2377-K711-WH-18A</b>	<b>Test Date</b>	June 7 <sup>th</sup> , 2014
<b>Manufacturer Designation</b>	CTI 2377-K711-18A	<b>Manufacturer</b>	Cesaroni Technology Inc.
<b>Propellant</b>	<i>White</i>	<b>Hardware</b>	Pro54-6G
<b>Single-Use/Reload/Hybrid</b>	Reloadable	<b>Motor Dimensions</b>	54mm x 572mm
<b>Loaded Weight</b>	2198 g	<b>Total Impulse</b>	2377.2 N-s (534.4 lb.s)
<b>Burnout Weight</b>	734 g	<b>Maximum Thrust</b>	1700.6 N (382.3 lb)
<b>Propellant Weight</b>	1398 g	<b>Average Thrust</b>	710.4 N (159.7 lb)
<b>Delays Tested</b>	18 - 8 s, adjustable	<b>Specific Impulse (Isp)</b>	173.17 s
<b>Samples per second</b>	1000	<b>Burn time</b>	3.35 s
<b>Notes</b>	85.7% K		

Respectfully submitted,

André Choquette  
 Chairman, CAR Motor Certification

## CTI 699-J145-SK-LB-19A (CTI Pro54-2G)

Canadian Association of Rocketry  
 CAR Motor Certification  
 c/o 1518-3<sup>rd</sup> Ave. S.  
 Lethbridge, AB  
 T1J 0K8

June 17<sup>th</sup>, 2014

Cesaroni Technology Incorporated  
 2561 Stouffville Road  
 Gormley, Ontario  
 L0H 1G0

Dear Dr. Jeroen Louwers,

The **699-J145-SK-LB-19A** rocket motor was tested June 7<sup>th</sup>, 2014 and is in compliance with the certification requirements and standards of the Canadian Association of Rocketry (CAR-ACF). The motor is hereby certified for hobby rocketry use by the members of CAR-ACF and any other rocketry associations with current reciprocal motor certification agreements in place with CAR-ACF.

<b>CAR Designation</b>	<b>CTI 699-J145-SK-LB-19A</b>	<b>Test Date</b>	June 7 <sup>th</sup> , 2014
<b>Manufacturer Designation</b>	CTI 699-J145-19A	<b>Manufacturer</b>	Cesaroni Technology Inc.
<b>Propellant</b>	<i>Skidmark-Longburn</i>	<b>Hardware</b>	Pro54-2G
<b>Single-Use/Reload/Hybrid</b>	Reloadable	<b>Motor Dimensions</b>	54mm x 236mm
<b>Loaded Weight</b>	837 g	<b>Total Impulse</b>	699.1 N-s (157.2 lb.s)
<b>Burnout Weight</b>	421 g	<b>Maximum Thrust</b>	505.3 N (113.6 lb)
<b>Propellant Weight</b>	417 g	<b>Average Thrust</b>	143.7 N (32.3 lb)
<b>Delays Tested</b>	19 - 9 s, adjustable	<b>Specific Impulse (Isp)</b>	170.94 s
<b>Samples per second</b>	1000	<b>Burn time</b>	4.87 s
<b>Notes</b>	9.2% J		

Respectfully submitted,

André Choquette  
 Chairman, CAR Motor Certification

## CTI 5198-M1101-WH-P (CTI Pro75-4G)

Canadian Association of Rocketry  
 CAR Motor Certification  
 c/o 1518-3<sup>rd</sup> Ave. S.  
 Lethbridge, AB  
 T1J 0K8

June 17<sup>th</sup>, 2014

Cesaroni Technology Incorporated  
 2561 Stouffville Road  
 Gormley, Ontario  
 L0H 1G0

Dear Dr. Jeroen Louwers,

The **5198-M1101-WH-P** rocket motor was tested June 7<sup>th</sup>, 2014 and is in compliance with the certification requirements and standards of the Canadian Association of Rocketry (CAR-ACF). The motor is hereby certified for hobby rocketry use by the members of CAR-ACF and any other rocketry associations with current reciprocal motor certification agreements in place with CAR-ACF.

<b>CAR Designation</b>	<b>CTI 5198-M1101-WH-P</b>	<b>Test Date</b>	June 7 <sup>th</sup> , 2014
<b>Manufacturer Designation</b>	CTI 5198-M1101-P	<b>Manufacturer</b>	Cesaroni Technology Inc.
<b>Propellant</b>	<i>White</i>	<b>Hardware</b>	Pro75-4G
<b>Single-Use/Reload/Hybrid</b>	Reloadable	<b>Motor Dimensions</b>	75mm x 621mm
<b>Loaded Weight</b>	4938 g	<b>Total Impulse</b>	5197.6 N-s (1168.5 lb.s)
<b>Burnout Weight</b>	1842 g	<b>Maximum Thrust</b>	1475.0 N (331.6 lb)
<b>Propellant Weight</b>	2993 g	<b>Average Thrust</b>	1111.2 N (249.8 lb)
<b>Delays Tested</b>	Plugged	<b>Specific Impulse (Isp)</b>	177.07 s
<b>Samples per second</b>	1000	<b>Burn time</b>	4.68 s
<b>Notes</b>	1.5% M		

Respectfully submitted,

André Choquette  
 Chairman, CAR Motor Certification

## CTI 4937-L395-MY-P (CTI Pro75-5G)

Canadian Association of Rocketry  
 CAR Motor Certification  
 c/o 1518-3<sup>rd</sup> Ave. S.  
 Lethbridge, AB  
 T1J 0K8

June 17<sup>st</sup>, 2014

Cesaroni Technology Incorporated  
 2561 Stouffville Road  
 Gormley, Ontario  
 L0H 1G0

Dear Dr. Jeroen Louwers,

The **4937-L395-MY-P** rocket motor was tested June 7<sup>th</sup>, 2014 and is in compliance with the certification requirements and standards of the Canadian Association of Rocketry (CAR-ACF). The motor is hereby certified for hobby rocketry use by the members of CAR-ACF and any other rocketry associations with current reciprocal motor certification agreements in place with CAR-ACF.

<b>CAR Designation</b>	<b>CTI 4937-L395-MY-P</b>	<b>Test Date</b>	June 7 <sup>th</sup> , 2014
<b>Manufacturer Designation</b>	CTI 4937-L395-P	<b>Manufacturer</b>	Cesaroni Technology Inc.
<b>Propellant</b>	<i>Mellow</i>	<b>Hardware</b>	Pro75-5G
<b>Single-Use/Reload/Hybrid</b>	Reloadable	<b>Motor Dimensions</b>	75mm x 757mm
<b>Loaded Weight</b>	5706 g	<b>Total Impulse</b>	4936.8 N-s (1109.8 lb.s)
<b>Burnout Weight</b>	2218 g	<b>Maximum Thrust</b>	587.5 N (132.1 lb)
<b>Propellant Weight</b>	3423 g	<b>Average Thrust</b>	393.7 N (88.5 lb)
<b>Delays Tested</b>	Plugged	<b>Specific Impulse (Isp)</b>	147.08 s
<b>Samples per second</b>	1000	<b>Burn time</b>	12.54 s
<b>Notes</b>	92.8% L		

Respectfully submitted,

André Choquette  
 Chairman, CAR Motor Certification

## CTI 16803-N1560-WH-MB-P (CTI Pro98-6GXL)

Canadian Association of Rocketry  
 CAR Motor Certification  
 c/o 1518-3<sup>rd</sup> Ave. S.  
 Lethbridge, AB  
 T1J 0K8

June 17<sup>st</sup>, 2014

Cesaroni Technology Incorporated  
 2561 Stouffville Road  
 Gormley, Ontario  
 L0H 1G0

Dear Dr. Jeroen Louwers,

The **16803-N1560-WH-MB-P** rocket motor was tested June 7<sup>th</sup>, 2014 and is in compliance with the certification requirements and standards of the Canadian Association of Rocketry (CAR-ACF). The motor is hereby certified for hobby rocketry use by the members of CAR-ACF and any other rocketry associations with current reciprocal motor certification agreements in place with CAR-ACF.

<b>CAR Designation</b>	<b>CTI 16803-N1560-WH-MB-P</b>	<b>Test Date</b>	June 7 <sup>th</sup> , 2014
<b>Manufacturer Designation</b>	CTI 16803-N1560-P	<b>Manufacturer</b>	Cesaroni Technology Inc.
<b>Propellant</b>	<i>White-Moonburner</i>	<b>Hardware</b>	Pro98-6GXL
<b>Single-Use/Reload/Hybrid</b>	Reloadable	<b>Motor Dimensions</b>	98mm x 1239mm
<b>Loaded Weight</b>	15858 g	<b>Total Impulse</b>	16803.0 N-s (3777.5 lb.s)
<b>Burnout Weight</b>	5471 g	<b>Maximum Thrust</b>	3216.3 N (723.1 lb)
<b>Propellant Weight</b>	9946 g	<b>Average Thrust</b>	1561.4 N (351.0 lb)
<b>Delays Tested</b>	Plugged	<b>Specific Impulse (Isp)</b>	172.28 s
<b>Samples per second</b>	1000	<b>Burn time</b>	10.76 s
<b>Notes</b>	64.1% N		

Respectfully submitted,

André Choquette  
 Chairman, CAR Motor Certification





New Pro75 5G Mellow

• Association Canadienne de fuséologie •