

## Appendix A: mARC Run Sheet

DATE 2019-10-07	TIME 20:43:32
TEST mARCV2_IST	RUN(S) Run_15
OPERATOR Mark McGlaughlin	TEST ENGINEER Megan E. Macdonald
	PI Megan E. Macdonald

**RUN OBJECTIVES**

1. Note chamber pressure during run at a range of mdot and I 2. Record voltage 3. Measure visible and infrared emission of the jet and calibrate immediately after

Nozzle exit diameter (cm) 1.87	# Disks 2
Total Cathode Time (h:m:s) TBD	Cathode type: AgP # Cathode starts: TBD

**DESIRED TEST CONDITIONS**

Main gas: Air Shield gas: None Purge gas: None

Cond. ID	Current (A)	Main (g/s)	Shield (g/s)	Purge (g/s)	Z (in)	Duration (s)		
						SW	L1	L2
Condition 1	40.0	0.5	0.0	None	None	None	None	None

**MODELS AND SENSORS**

	SW	L1	L2
Material or Sensor Type	_____	_____	_____
S/N	_____	_____	_____
Size	_____	_____	_____
Sensor Limits	_____	_____	_____

**PROCEDURE**

1. Note chamber pressure during run at a range of mdot and I 2. Record voltage 3. Measure visible and infrared emission of the jet and calibrate immediately after

**CAMERAS**

Camera	Lens	Filter	Mode
Nikon D750	None	Luminesque UV 77mm	None

**ADDITIONAL DIAGNOSTICS**

Purpose	Sensor model	Units
Arc Current [A]	Ohio Semitronics CTL401S/300/CTA201H	Amperes
Arc Voltage [V]	Ohio Semitronics VT7-007E-11-TP	Volts
Plasma gas [g/s]	Sage SIP-030-DC24-AIR	Grams per second
Column Pressure [Pa]	Setra Model 730	Pascals
Chamber Pressure 2 [Pa]	Inficon	Pascals

Total Arc-On Duration \_\_\_\_\_ min:sec

ARC HEATER/CHAMBER COOLING  
(DISTILLED WATER)

HCW-TI-101 Temp (F) \_\_\_\_\_

HCW-ST-101 Conduct. (uS) \_\_\_\_\_

HCW-PI-130 Arc supply (PSIG) \_\_\_\_\_

HCW-PI-133 Arc return (PSIG) \_\_\_\_\_

HCW-PI-140 Spare supply (PSIG) \_\_\_\_\_

HCW-PI-146 Spare return (PSIG) \_\_\_\_\_

HCW-PI-147 Chamber supply (PSIG) \_\_\_\_\_

VACUUM SYSTEM COOLING  
(TAP WATER)

VPW-PI-220 heat ex. Press (PSIG) \_\_\_\_\_

VPW-FI-220 heat ex. Press (GPM) \_\_\_\_\_

VPW-PI-230 vac. pump Press. (PSIG) \_\_\_\_\_

VPW-FI-230 vac. pump Flow (GPM) \_\_\_\_\_

VPW-TI-280 vac. pump exit T (F) \_\_\_\_\_

SENSOR COOLING  
(DISTILLED WATER)

SKW-TI-401 Temp (F) \_\_\_\_\_

SKW-ST-401 Conduct. (uS) \_\_\_\_\_

SKW-PI-440 sensor supply (PSIG) \_\_\_\_\_

GASES

	Gas	Initial (PSIG)	Final (PSIG)
Main	Air	1250.0	1200.0
Shield	None	None	None
Purge	None	None	None

low-side P \_\_\_\_\_ Roto \_\_\_\_\_

VACUUM SYSTEM

Pump Base Pressure (GS-PI-381) \_\_\_\_\_ Torr

Chamber Base Pressure (GS-PIT-374) \_\_\_\_\_ Torr

No purge \_\_\_\_\_ Torr

Purge \_\_\_\_\_ Torr

Post-test \_\_\_\_\_ Torr

POST-TEST PHOTONOTES (include notes from checklist)