

	Symbol	Value	Uncertainty/Status	Description
Arc heater [GyuSub Lee]	\dot{m}_{N_2}	0 g/s	N/A; pure O ₂	N ₂ mass flow rate
	\dot{m}_{O_2}	56.38 g/s	measured ^a	O ₂ mass flow rate
	P_0	167.1 kPa	± 0.05 psi (aleatoric) ^b	Total pres.
	T_0	298 K	isentropic gas dyn.	Total temp.
	\bar{I}_{arc}	0.0 A	N/A	Mean arc current
	\bar{V}_{arc}	0.0 V	N/A	Mean arc voltage
	\bar{W}_{arc}	0.0 kW	$W_{arc} = V_{arc} I_{arc}$	Mean arc power
Fuel inlet [GyuSub Lee]	\dot{m}_{H_2}	1.842 g/s	need investigation	H ₂ mass flow rate
	$P_{0,F}$	386.6 kPa	± 0.05 psi (aleatoric)	downstream fuel valve
	$T_{0,F}$	298 K	isentropic gas dyn.	downstream fuel valve
Air/fuel nozzle [A. Munafò]	P_S		± 0.05 psi (aleatoric) ^c	Stat. pres. 15 mm ups.
	P_{in}	3.0307 kPa	$\sim P_S$	Inflow pres.
	T_{in}	94.7686 K	related to $\dot{m}_{N_2}, \dot{m}_{O_2}, P_0, P_S$	Inflow temp.
	M_{in}	3.2745	related to P_0, P_S	Inflow Mach number
	$Y_{in,k}$	1	pure species	Gas composition
	A		trusted	Area
	$P_{in,F}$	204.23 kPa	related to $P_{0,F}$	Exit pressure
	$T_{in,F}$	248.33 K	related to $\dot{m}_{H_2}, P_{0,F}$	Exit temp.
	$M_{in,F}$	1	sonic design	Exit Mach number
	A_F		trusted	Area
	δ^d		need investigation	Boundary layer

a – based on static pressures across the O₂ control valves; more error analysis needed

b – observational error per measurement

c – will be reported; will provide some validation [GyuSub Lee]

d – under continued investigation [D. Buchta]

Measurement Trusted