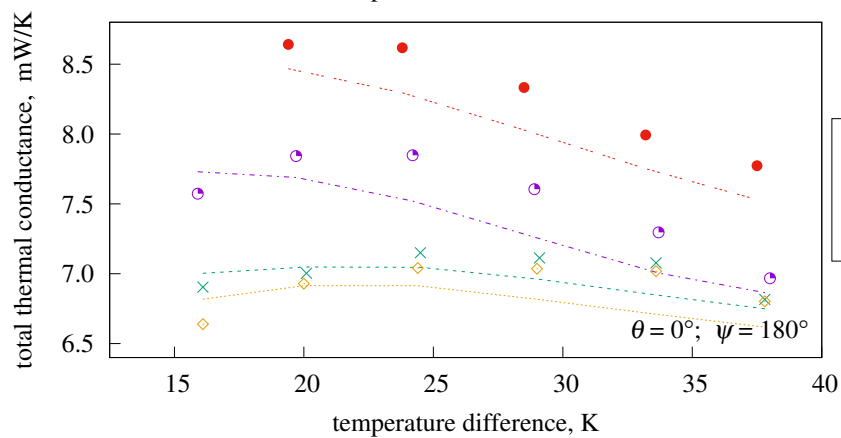
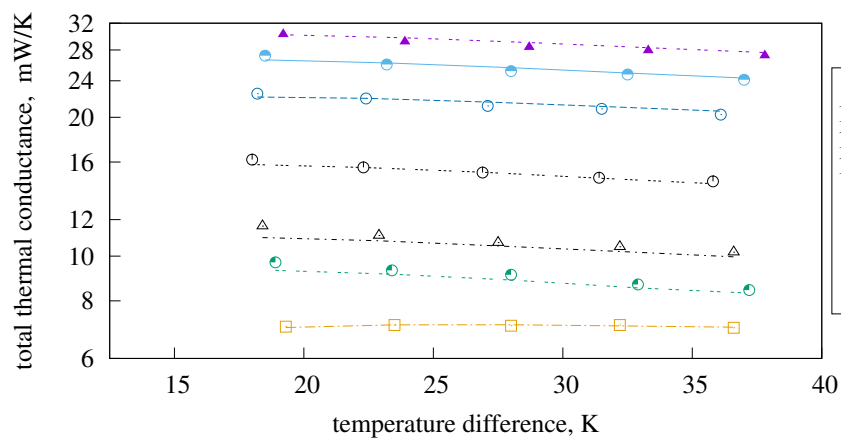
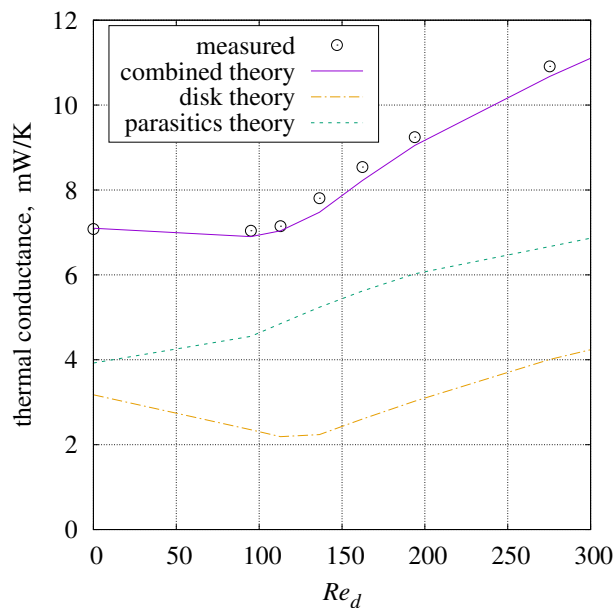
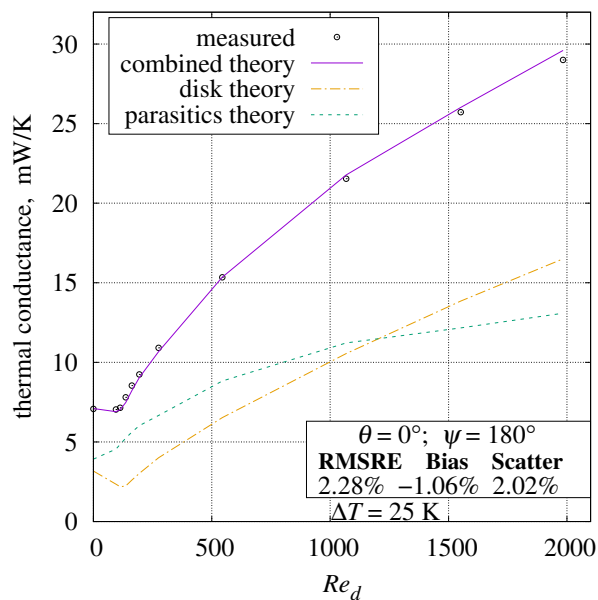
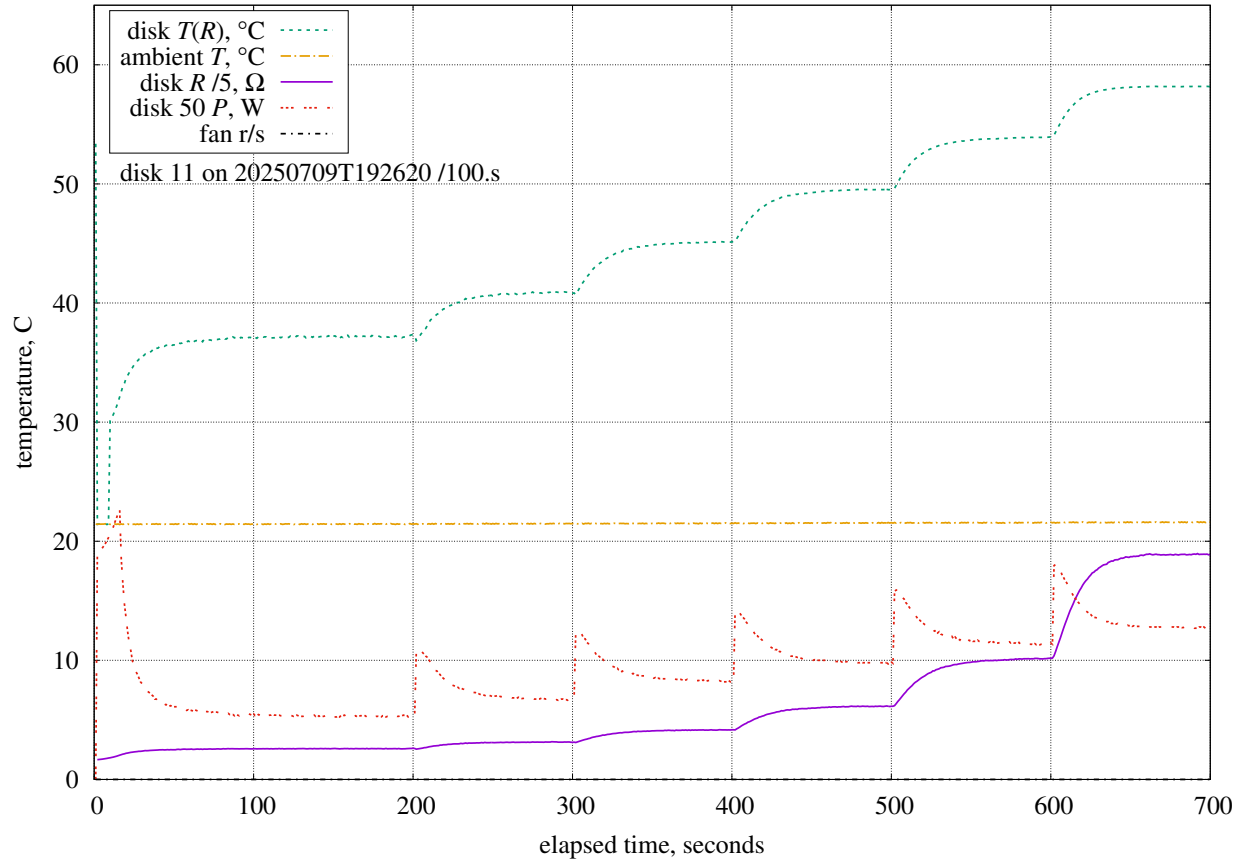


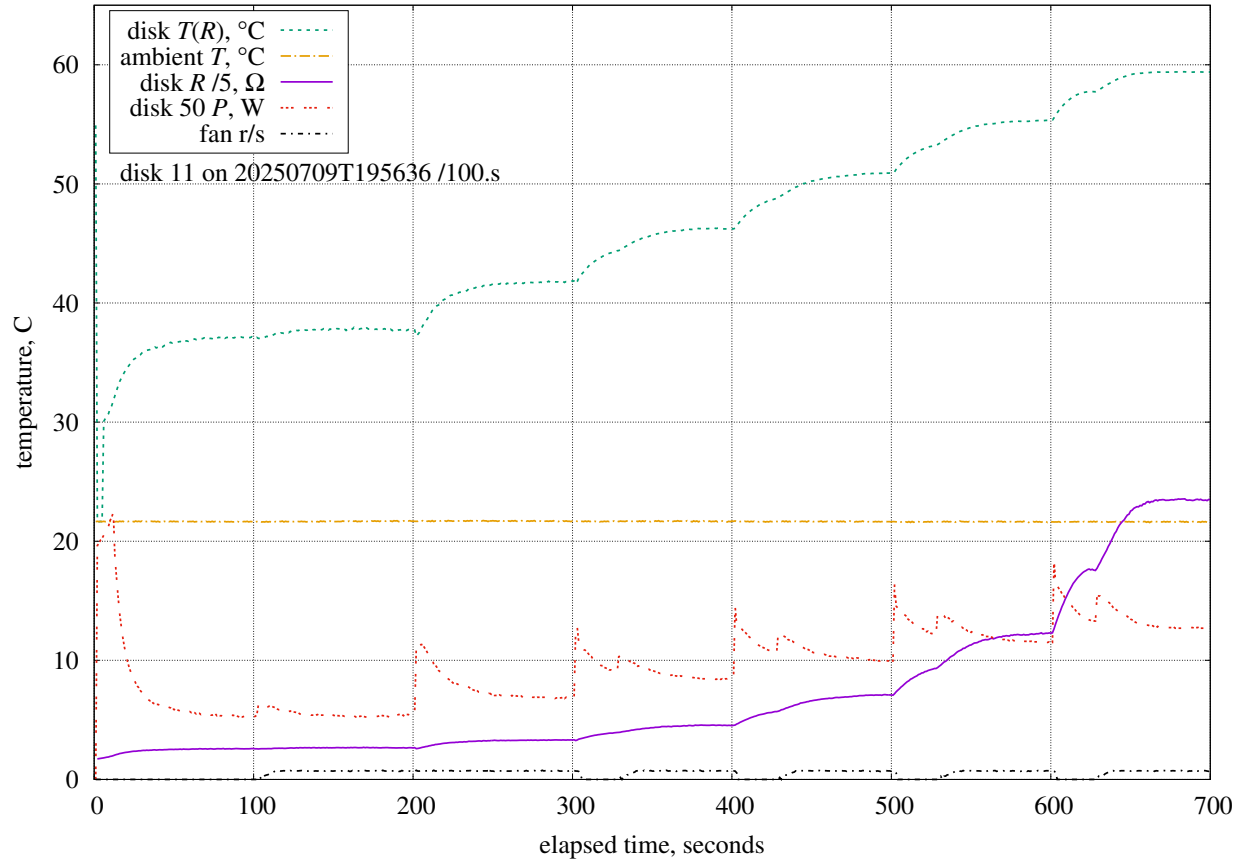




$\theta = 0.0^\circ$; $\psi = 180.0^\circ$; $V = 0.000$ m/s (0 r/min)

Estimated measurement uncertainties of natural convection at $\theta = 0.0$.

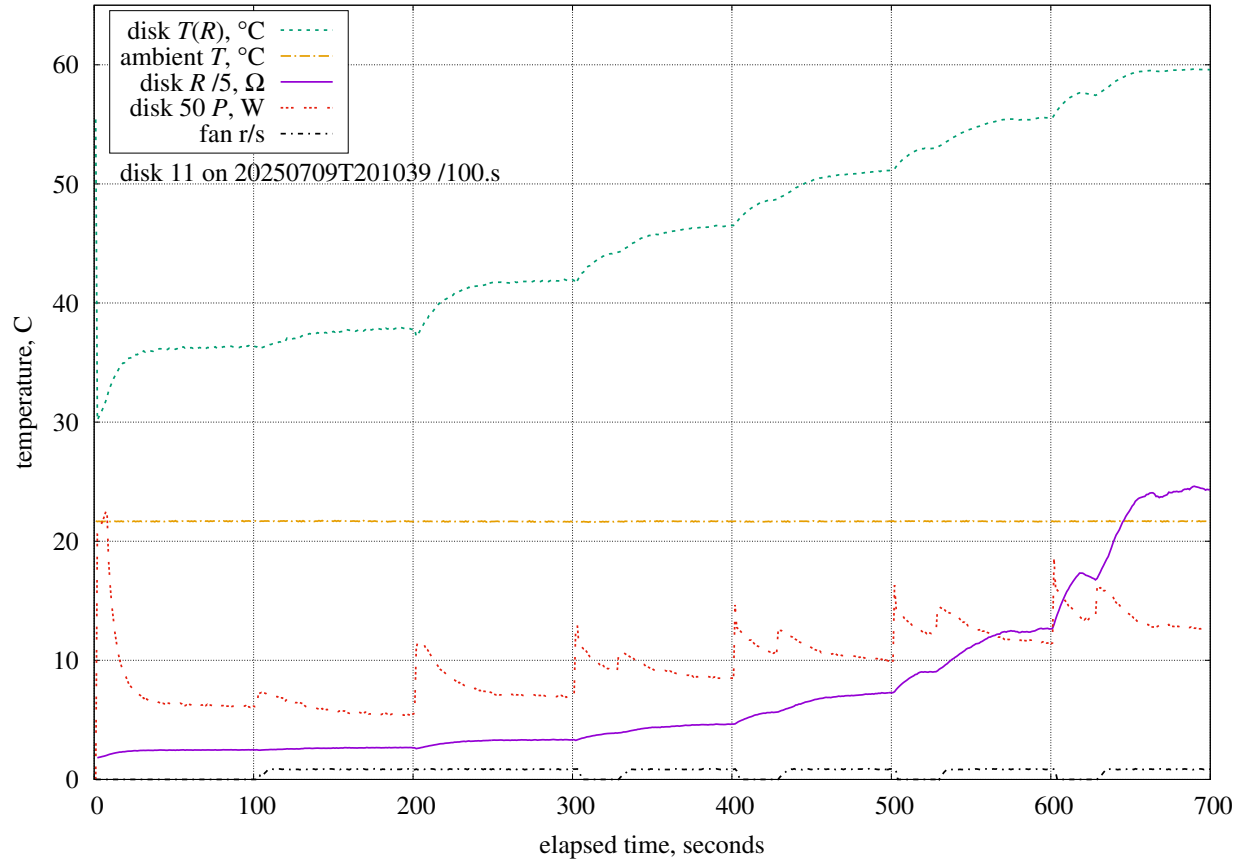
Symbol	Nominal	Sensitivity	Bias	Uncertainty	Component
ΔT	25.0.K	+4.41%/K	0.10.K	0.44%	LM35C differential
P	101.kPa	+0.0002%/Pa	1.5.kPa	0.28%	MPXH6115A6U air pressure
Re_0	600	+0.0046%	60	0.28%	integration lower-bound
D_o	2.81.mm	+3925%/m	500.um	1.96%	tube outer diameter
D_i	1.11.mm	+4136%/m	200.um	0.83%	tube inner diameter
L_{wire}	38.0.mm	+971%/m	500.um	0.49%	wire length
k_{ABS}	179. $\frac{\text{mW}}{\text{K}\cdot\text{m}}$	+0.121%/ $\frac{\text{mW}}{\text{K}\cdot\text{m}}$	9.0. $\frac{\text{mW}}{\text{K}\cdot\text{m}}$	1.09%	ABS thermal conductivity
d	12.0.mm	+4826%/m	100.um	0.48%	disk diameter
θ	50.0.m°	+3.65%/°	0.20.°	0.73%	plate angle
				2.67%	combined bias uncertainty



$\theta = 0.0^\circ$; $\psi = 180.0^\circ$; $V = 0.130 \text{ m/s}$ (43 r/min)

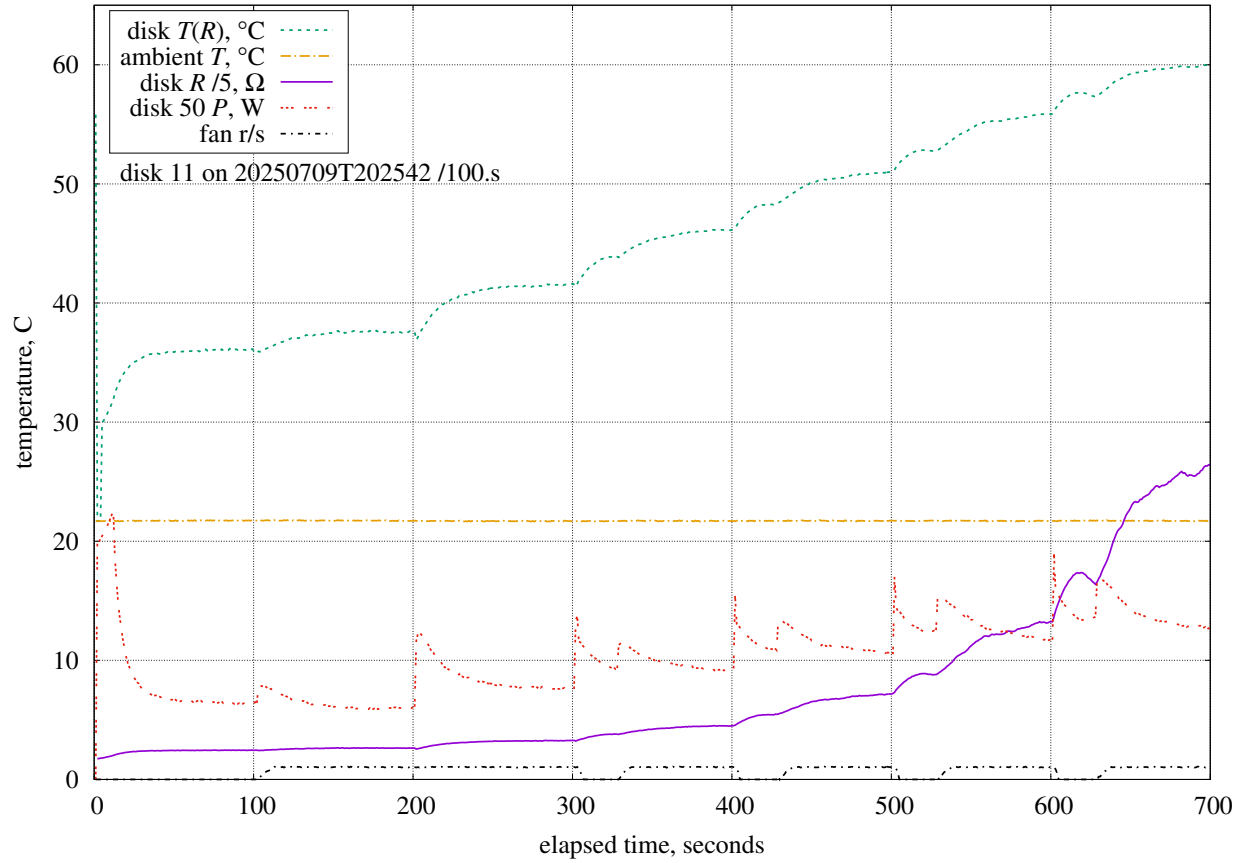
Estimated measurement uncertainties at $Re = 95$.

Symbol	Nominal	Sensitivity	Bias	Uncertainty	Component
ΔT	25.0.K	+4.18%/K	0.10.K	0.42%	LM35C differential
P	101.kPa	+0.0002%/Pa	1.5.kPa	0.30%	MPXH6115A6U air pressure
η	0.340	+35.1%	0.007	0.24%	anemometer calibration
Re_0	600	+0.010%	60	0.60%	integration lower-bound
D_o	2.81.mm	+1216%/m	500.um	0.61%	tube outer diameter
D_i	1.11.mm	+3862%/m	200.um	0.77%	tube inner diameter
L_{wire}	38.0.mm	+1035%/m	500.um	0.52%	wire length
k_{ABS}	179. $\frac{\text{mW}}{\text{K}\cdot\text{m}}$	+0.139%/ $\frac{\text{mW}}{\text{K}\cdot\text{m}}$	9.0. $\frac{\text{mW}}{\text{K}\cdot\text{m}}$	1.24%	ABS thermal conductivity
d	12.0.mm	+3998%/m	100.um	0.40%	disk diameter
θ	50.0.m°	−1.82%/°	0.20.°	0.36%	plate angle
				1.95%	combined bias uncertainty
Symbol	Nominal	Sensitivity	Variability	Uncertainty	Component
ω	43.3.r/min	+0.276%/(r/min)	1.2.r/min	0.34%	fan rotation rate
				2.07%	RSS combined uncertainty



Estimated measurement uncertainties at $Re = 113$.

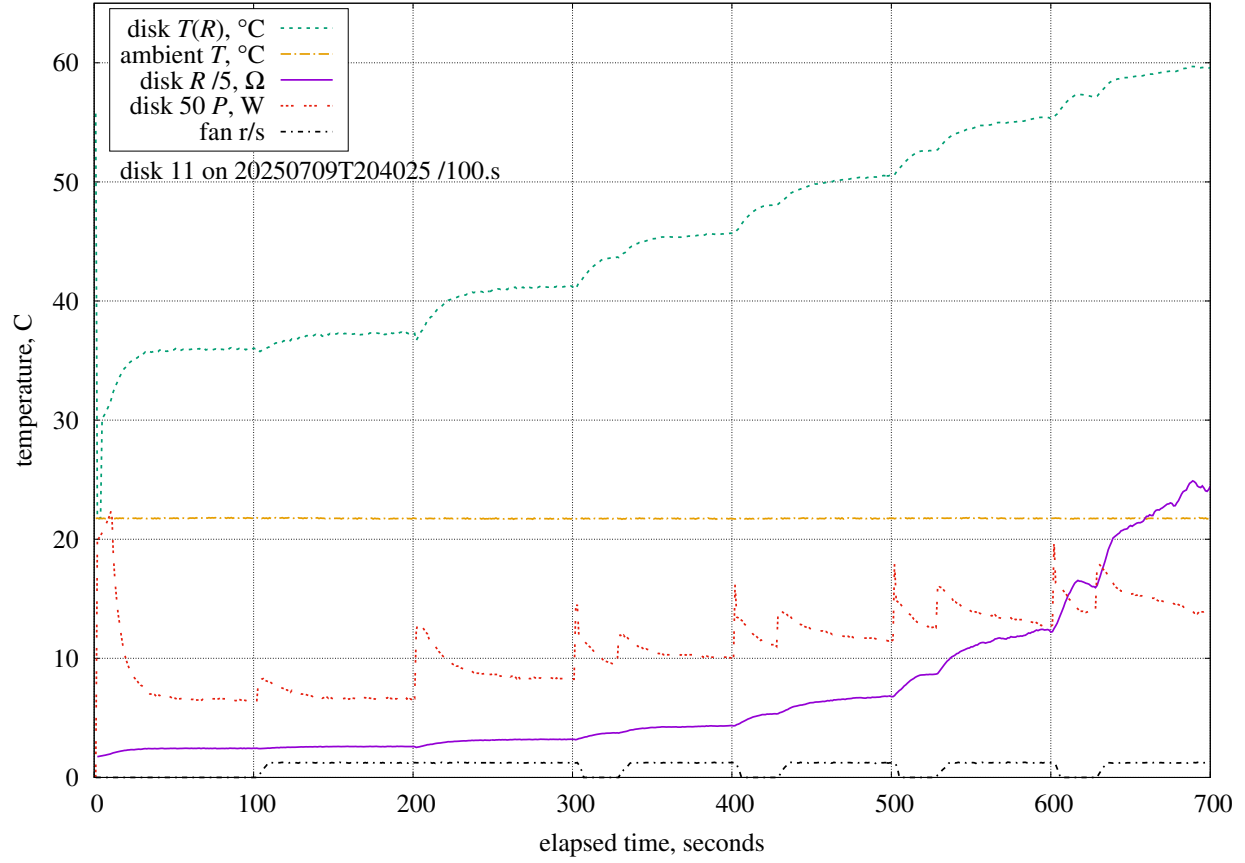
Symbol	Nominal	Sensitivity	Bias	Uncertainty	Component
ΔT	25.0.K	+4.18%/K	0.10.K	0.42%	LM35C differential
P	101.kPa	+0.0002%/Pa	1.5.kPa	0.26%	MPXH6115A6U air pressure
Re_0	600	+0.012%	60	0.74%	integration lower-bound
D_o	2.81.mm	+853%/m	500.um	0.43%	tube outer diameter
D_i	1.11.mm	+4677%/m	200.um	0.94%	tube inner diameter
D_g	166.um	-275%/m	750.um	0.21%	tube air gap
L_{wire}	38.0.mm	+1145%/m	500.um	0.57%	wire length
k_{ABS}	179. $\frac{\text{mW}}{\text{K}\cdot\text{m}}$	+0.148%/ $\frac{\text{mW}}{\text{K}\cdot\text{m}}$	9.0. $\frac{\text{mW}}{\text{K}\cdot\text{m}}$	1.32%	ABS thermal conductivity
d	12.0.mm	+3492%/m	100.um	0.35%	disk diameter
θ	50.0.m $^\circ$	-1.72%/ $^\circ$	0.20. $^\circ$	0.34%	plate angle
				2.07%	combined bias uncertainty
Symbol	Nominal	Sensitivity	Variability	Uncertainty	Component
ω	51.4.r/min	+0.186%/(r/min)	1.3.r/min	0.23%	fan rotation rate
				2.12%	RSS combined uncertainty



$\theta = 0.0^\circ$; $\psi = 180.0^\circ$; $V = 0.187 \text{ m/s}$ (62 r/min)

Estimated measurement uncertainties at $Re = 136$.

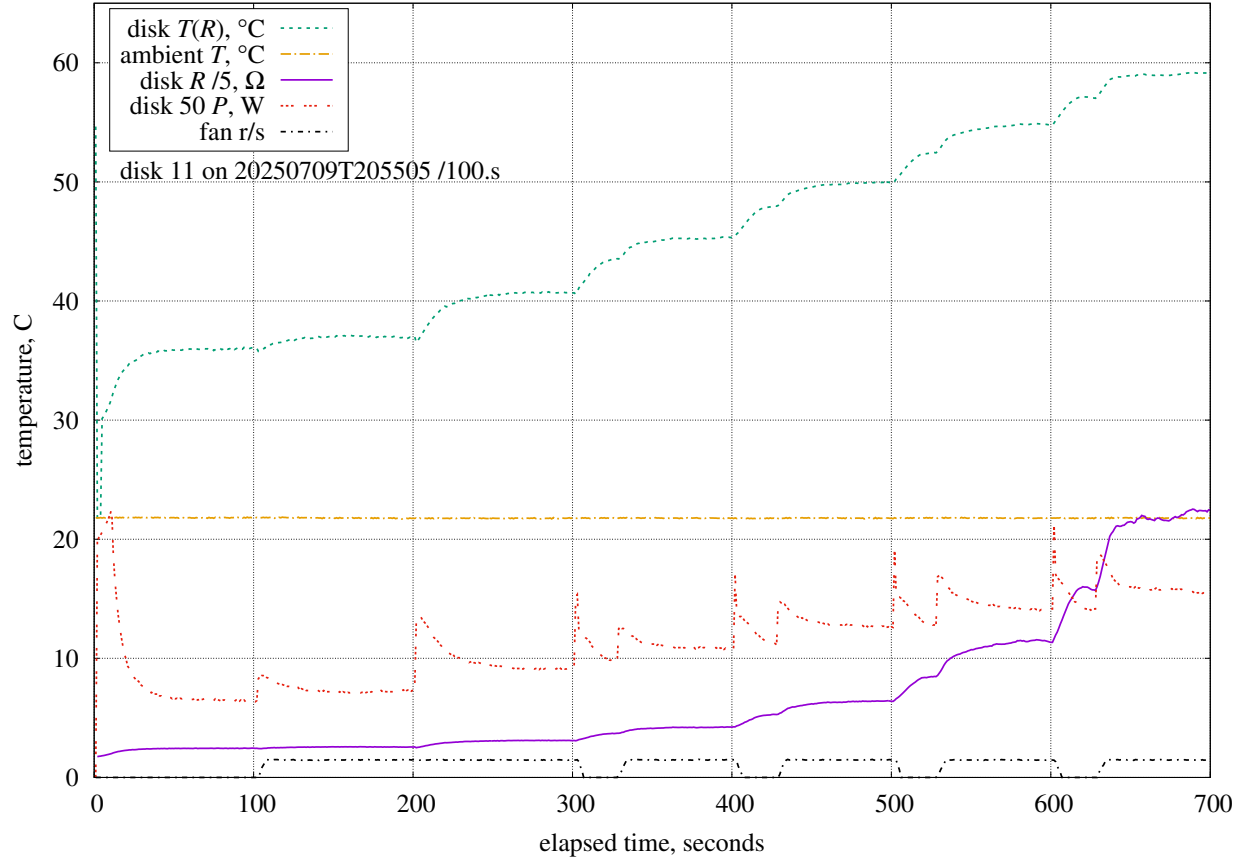
Symbol	Nominal	Sensitivity	Bias	Uncertainty	Component
ΔT	25.0.K	+3.84%/K	0.10.K	0.38%	LM35C differential
P	100.kPa	+0.0004%/Pa	1.5.kPa	0.57%	MPXH6115A6U air pressure
η	0.340	+139%	0.007	0.94%	anemometer calibration
Re_0	600	-0.014%	60	0.82%	integration lower-bound
D_i	1.11.mm	+5438%/m	200.um	1.09%	tube inner diameter
D_g	166.um	-301%/m	750.um	0.23%	tube air gap
L_{wire}	38.0.mm	+1253%/m	500.um	0.63%	wire length
k_{ABS}	179. $\frac{\text{mW}}{\text{K}\cdot\text{m}}$	+0.154%/ $\frac{\text{mW}}{\text{K}\cdot\text{m}}$	9.0. $\frac{\text{mW}}{\text{K}\cdot\text{m}}$	1.38%	ABS thermal conductivity
d	12.0.mm	+4445%/m	100.um	0.44%	disk diameter
θ	50.0.m°	-1.56%/°	0.20.°	0.31%	plate angle
				2.43%	combined bias uncertainty
Symbol	Nominal	Sensitivity	Variability	Uncertainty	Component
ω	62.2.r/min	+0.758%/(r/min)	1.4.r/min	1.03%	fan rotation rate
				3.18%	RSS combined uncertainty



$\theta = 0.0^\circ$; $\psi = 180.0^\circ$; $V = 0.223 \text{ m/s}$ (74 r/min)

Estimated measurement uncertainties at $Re = 162$.

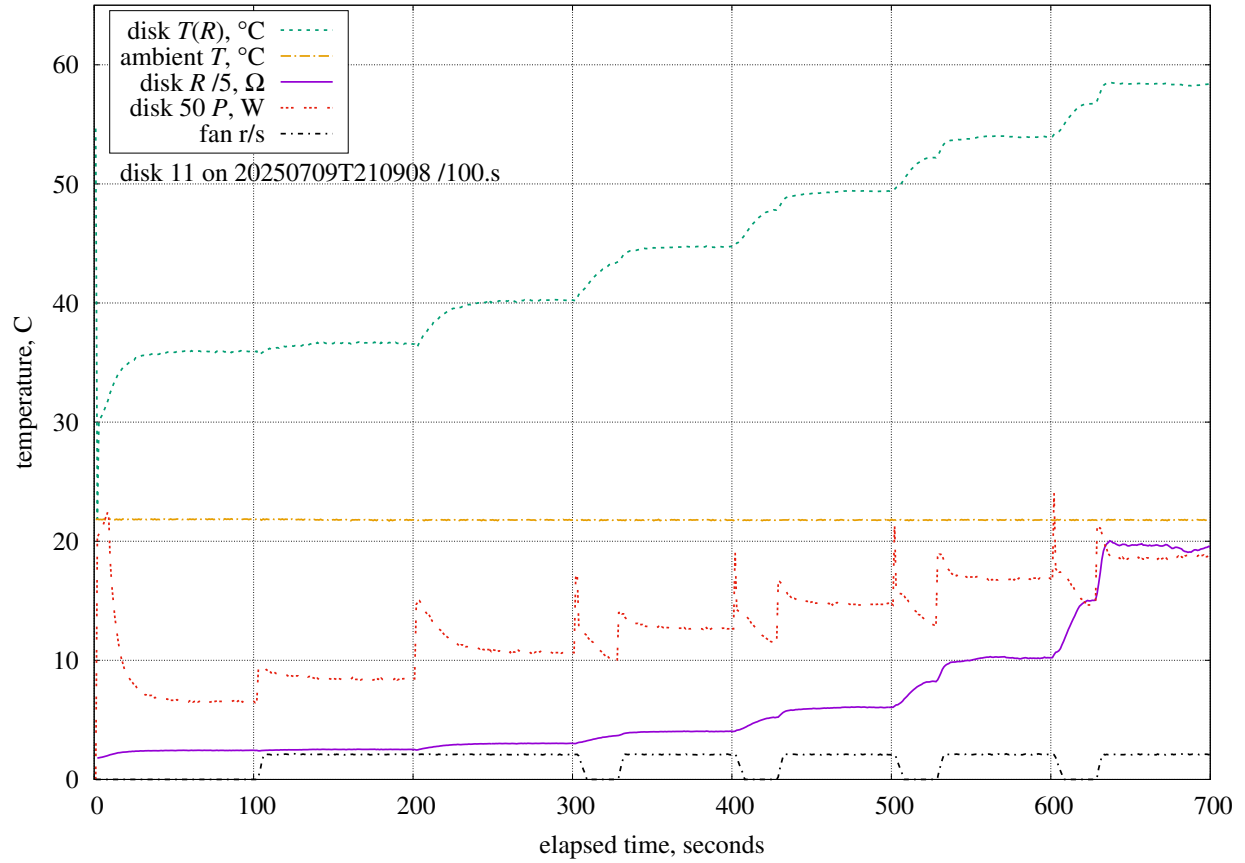
Symbol	Nominal	Sensitivity	Bias	Uncertainty	Component
ΔT	25.0.K	+3.86%/K	0.10.K	0.39%	LM35C differential
P	100.kPa	+0.0004%/Pa	1.5.kPa	0.62%	MPXH6115A6U air pressure
η	0.340	+145%	0.007	0.99%	anemometer calibration
Re_0	600	-0.014%	60	0.82%	integration lower-bound
C_B	0.541	+5.21%	0.100	0.52%	bypass coefficient
D_i	1.11.mm	+5937%/m	200.um	1.19%	tube inner diameter
D_g	166.um	-314%/m	750.um	0.24%	tube air gap
L_{wire}	38.0.mm	+1309%/m	500.um	0.65%	wire length
k_{ABS}	179. $\frac{\text{mW}}{\text{K}\cdot\text{m}}$	+0.153%/ $\frac{\text{mW}}{\text{K}\cdot\text{m}}$	9.0. $\frac{\text{mW}}{\text{K}\cdot\text{m}}$	1.37%	ABS thermal conductivity
d	12.0.mm	+4900%/m	100.um	0.49%	disk diameter
θ	50.0.m°	-1.37%/°	0.20.°	0.27%	plate angle
				2.56%	combined bias uncertainty
Symbol	Nominal	Sensitivity	Variability	Uncertainty	Component
ω	74.0.r/min	+0.666%/(r/min)	1.0.r/min	0.69%	fan rotation rate
				2.91%	RSS combined uncertainty



$\theta = 0.0^\circ$; $\psi = 180.0^\circ$; $V = 0.267$ m/s (88 r/min)

Estimated measurement uncertainties at $Re = 194$.

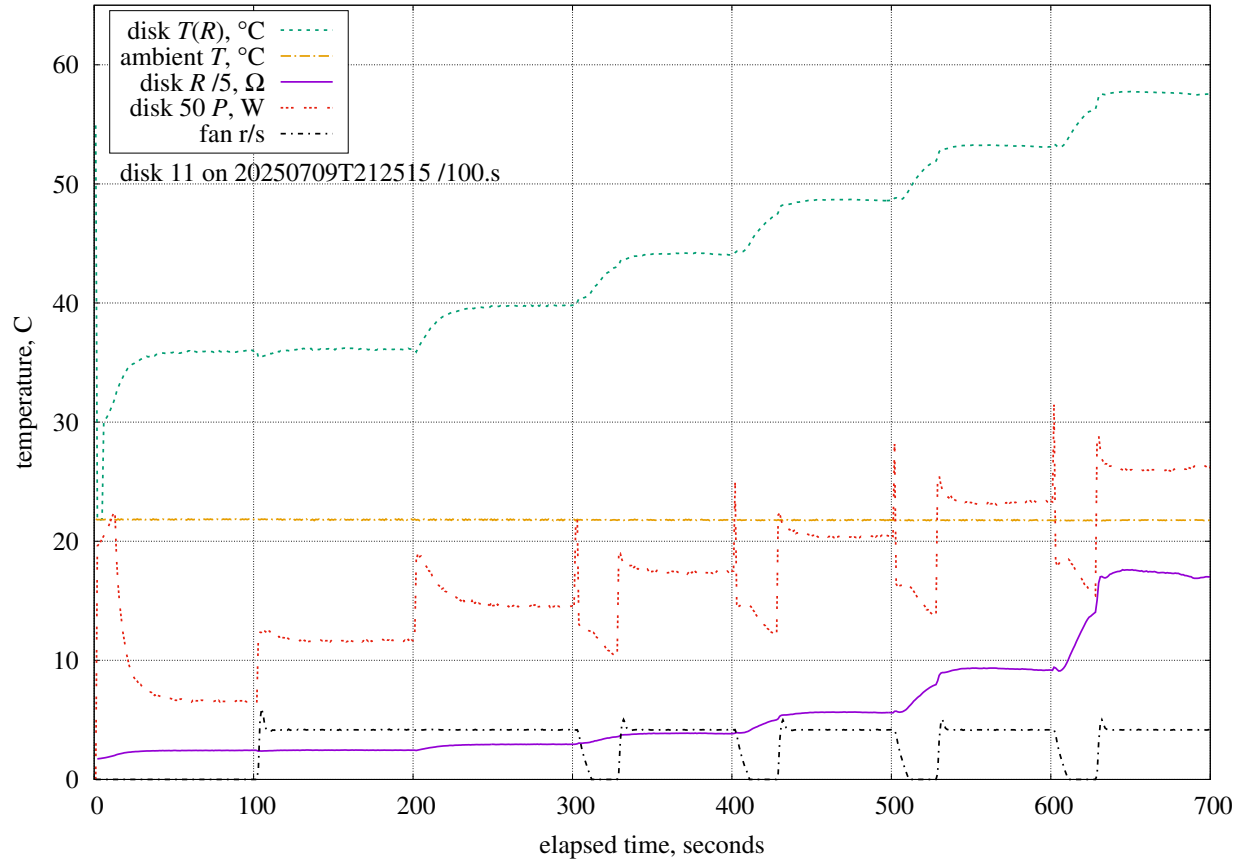
Symbol	Nominal	Sensitivity	Bias	Uncertainty	Component
ΔT	25.0.K	+3.88%/K	0.10.K	0.39%	LM35C differential
P	100.kPa	+0.0004%/Pa	1.5.kPa	0.64%	MPXH6115A6U air pressure
η	0.340	+145%	0.007	0.99%	anemometer calibration
Re_0	600	-0.013%	60	0.80%	integration lower-bound
C_B	0.541	+6.81%	0.100	0.68%	bypass coefficient
D_o	2.81.mm	-740%/m	500.um	0.37%	tube outer diameter
D_i	1.11.mm	+6466%/m	200.um	1.29%	tube inner diameter
D_g	166.um	-327%/m	750.um	0.25%	tube air gap
L_{wire}	38.0.mm	+1365%/m	500.um	0.68%	wire length
k_{ABS}	179. $\frac{\text{mW}}{\text{K}\cdot\text{m}}$	+0.152%/ $\frac{\text{mW}}{\text{K}\cdot\text{m}}$	9.0. $\frac{\text{mW}}{\text{K}\cdot\text{m}}$	1.36%	ABS thermal conductivity
d	12.0.mm	+5206%/m	100.um	0.52%	disk diameter
θ	50.0.m°	-1.20%/°	0.20.°	0.24%	plate angle
				2.68%	combined bias uncertainty
Symbol	Nominal	Sensitivity	Variability	Uncertainty	Component
ω	88.5.r/min	+0.559%/(r/min)	0.85.r/min	0.47%	fan rotation rate
				2.84%	RSS combined uncertainty



$\theta = 0.0^\circ$; $\psi = 180.0^\circ$; $V = 0.378$ m/s (126 r/min)

Estimated measurement uncertainties at $Re = 275$.

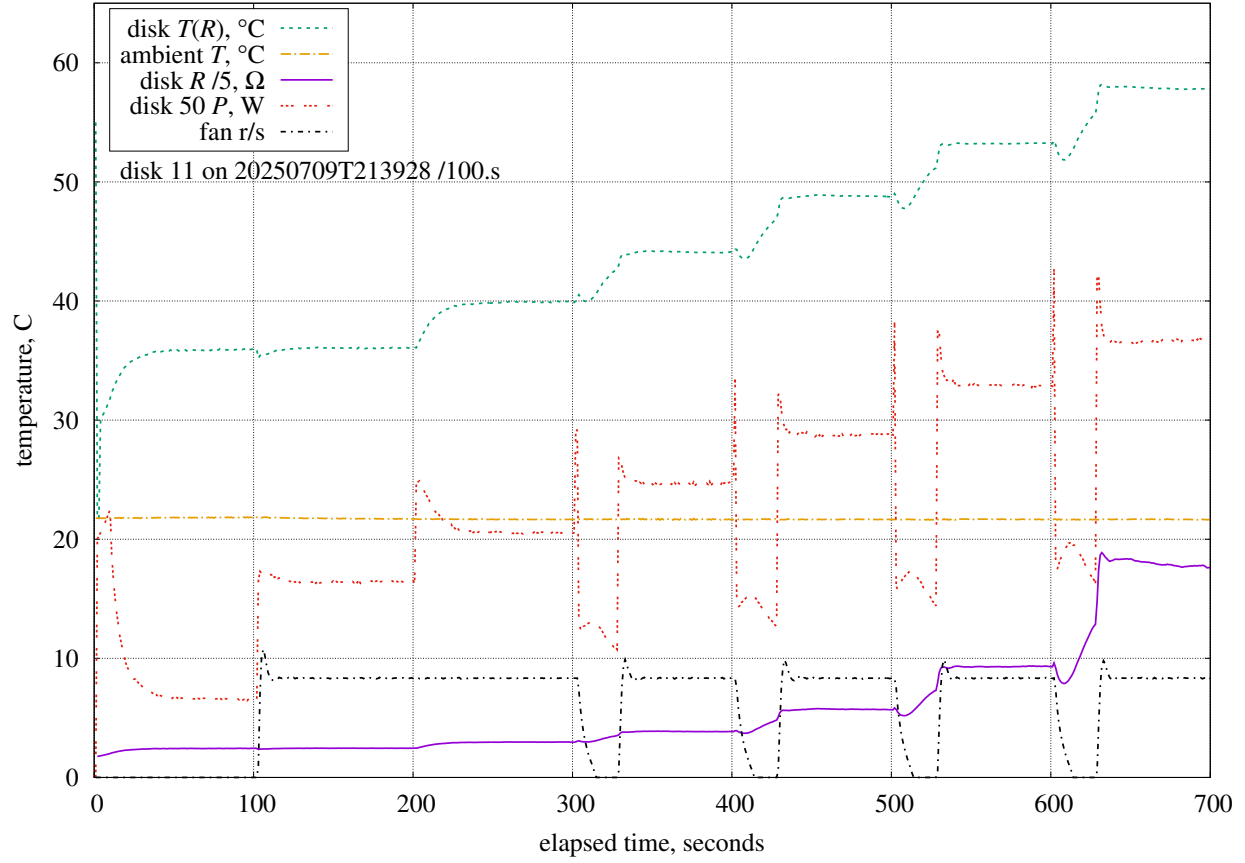
Symbol	Nominal	Sensitivity	Bias	Uncertainty	Component
ΔT	25.0.K	+3.91%/K	0.10.K	0.39%	LM35C differential
P	100.kPa	+0.0003%/Pa	1.5.kPa	0.40%	MPXH6115A6U air pressure
η	0.340	+95.0%	0.007	0.65%	anemometer calibration
Re_0	600	-0.012%	60	0.70%	integration lower-bound
C_B	0.541	+7.78%	0.100	0.78%	bypass coefficient
D_o	2.81.mm	-7176%/m	500.um	3.59%	tube outer diameter
D_i	1.11.mm	+6921%/m	200.um	1.38%	tube inner diameter
D_g	166.um	-341%/m	750.um	0.26%	tube air gap
L_{wire}	38.0.mm	+1421%/m	500.um	0.71%	wire length
k_{ABS}	179. $\frac{\text{mW}}{\text{K}\cdot\text{m}}$	+0.147%/ $\frac{\text{mW}}{\text{K}\cdot\text{m}}$	9.0. $\frac{\text{mW}}{\text{K}\cdot\text{m}}$	1.32%	ABS thermal conductivity
d	12.0.mm	+5722%/m	100.um	0.57%	disk diameter
				4.39%	combined bias uncertainty
Symbol	Nominal	Sensitivity	Variability	Uncertainty	Component
ω	126.r/min	+0.257%/(r/min)	1.2.r/min	0.31%	fan rotation rate
				4.44%	RSS combined uncertainty



$\theta = 0.0^\circ$; $\psi = 180.0^\circ$; $V = 0.748$ m/s (250 r/min)

Estimated measurement uncertainties at $Re = 545$.

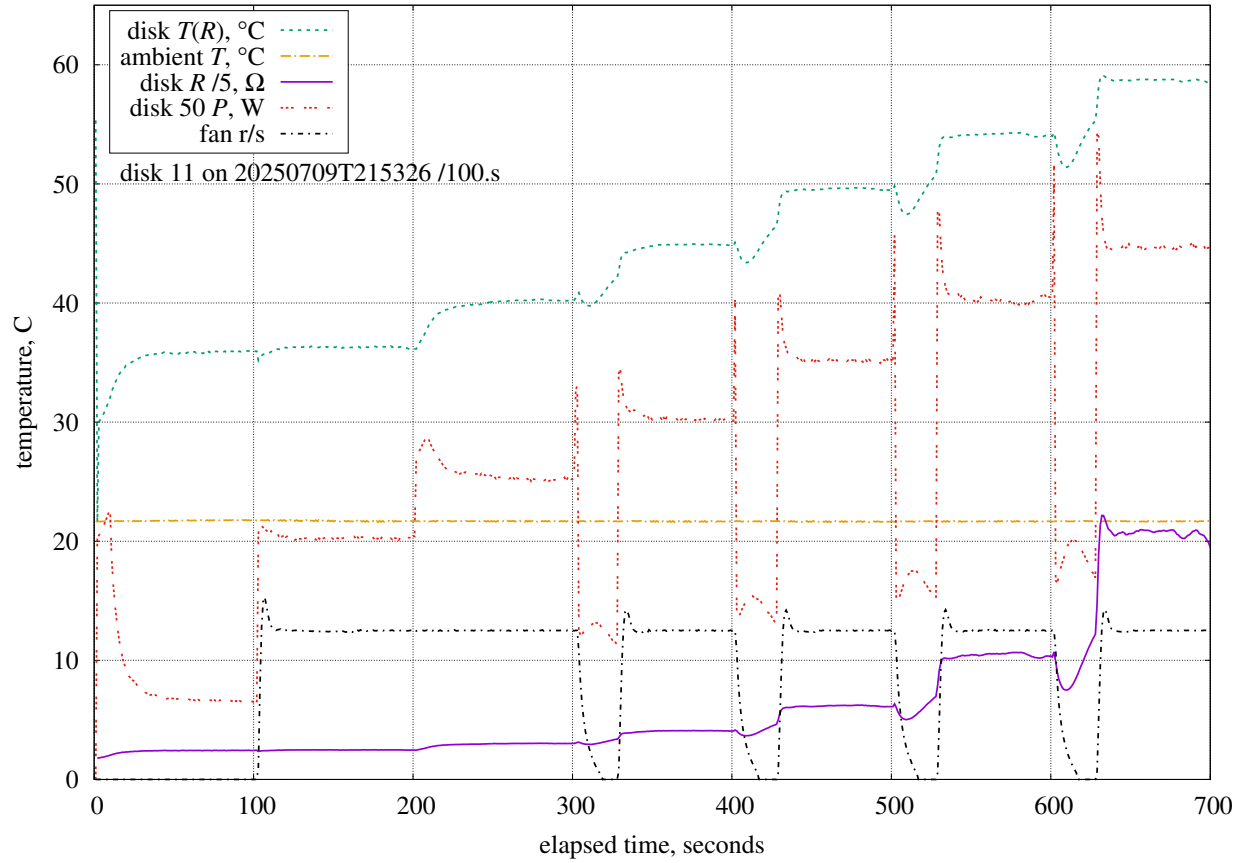
Symbol	Nominal	Sensitivity	Bias	Uncertainty	Component
ΔT	25.0.K	+3.96%/K	0.10.K	0.40%	LM35C differential
P	100.kPa	+0.0005%/Pa	1.5.kPa	0.81%	MPXH6115A6U air pressure
η	0.340	+167%	0.007	1.14%	anemometer calibration
Re_0	600	-0.0097%	60	0.58%	integration lower-bound
C_B	0.541	+8.56%	0.100	0.86%	bypass coefficient
D_o	2.81.mm	+1054%/m	500.um	0.53%	tube outer diameter
D_i	1.11.mm	+9337%/m	200.um	1.87%	tube inner diameter
D_g	166.um	-413%/m	750.um	0.31%	tube air gap
L_{wire}	38.0.mm	+1721%/m	500.um	0.86%	wire length
k_{ABS}	179. $\frac{\text{mW}}{\text{K}\cdot\text{m}}$	+0.150%/ $\frac{\text{mW}}{\text{K}\cdot\text{m}}$	9.0. $\frac{\text{mW}}{\text{K}\cdot\text{m}}$	1.34%	ABS thermal conductivity
d	12.0.mm	+6251%/m	100.um	0.63%	disk diameter
				3.16%	combined bias uncertainty
Symbol	Nominal	Sensitivity	Variability	Uncertainty	Component
ω	250.r/min	+0.227%/(r/min)	0.98.r/min	0.22%	fan rotation rate
				3.19%	RSS combined uncertainty



$\theta = 0.0^\circ$; $\psi = 180.0^\circ$; $V = 1.467 \text{ m/s}$ (500 r/min)

Estimated measurement uncertainties at $Re = 1068$.

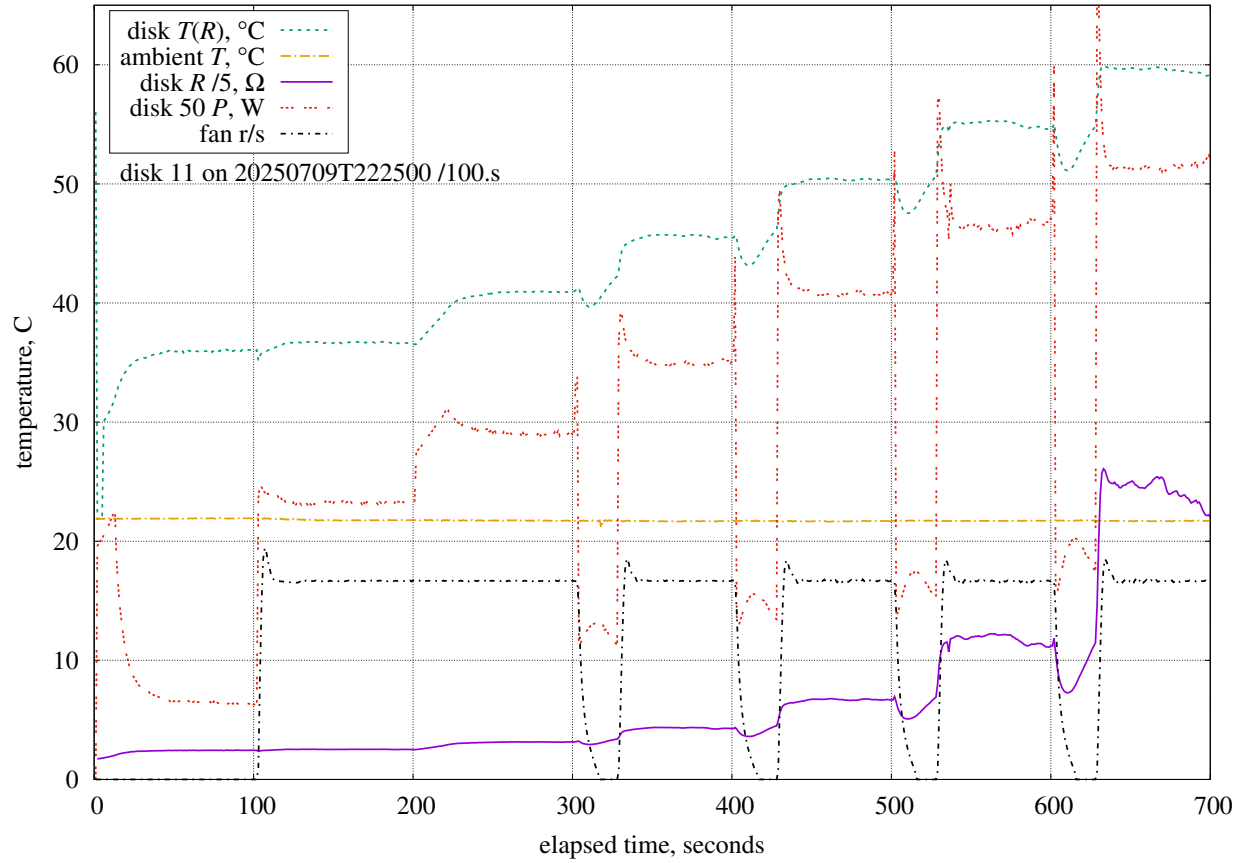
Symbol	Nominal	Sensitivity	Bias	Uncertainty	Component
ΔT	25.0.K	+4.04%/K	0.10.K	0.40%	LM35C differential
P	100.kPa	+0.0004%/Pa	1.5.kPa	0.59%	MPXH6115A6U air pressure
η	0.340	+108%	0.007	0.73%	anemometer calibration
Re_0	600	-0.0064%	60	0.39%	integration lower-bound
C_B	0.541	+7.01%	0.100	0.70%	bypass coefficient
D_o	2.81.mm	-4683%/m	500.um	2.34%	tube outer diameter
D_i	1.11.mm	+11760%/m	200.um	2.35%	tube inner diameter
D_g	166.um	-490%/m	750.um	0.37%	tube air gap
L_{wire}	38.0.mm	+2044%/m	500.um	1.02%	wire length
k_{ABS}	179. $\frac{\text{mW}}{\text{K}\cdot\text{m}}$	+0.154%/ $\frac{\text{mW}}{\text{K}\cdot\text{m}}$	9.0. $\frac{\text{mW}}{\text{K}\cdot\text{m}}$	1.38%	ABS thermal conductivity
d	12.0.mm	+6641%/m	100.um	0.66%	disk diameter
				4.03%	combined bias uncertainty
Symbol	Nominal	Sensitivity	Variability	Uncertainty	Component
ω	500.r/min	+0.073%/(r/min)	2.1.r/min	0.15%	fan rotation rate
				4.04%	RSS combined uncertainty



$\theta = 0.0^\circ$; $\psi = 180.0^\circ$; $V = 2.131 \text{ m/s}$ (750 r/min)

Estimated measurement uncertainties at $Re = 1552$.

Symbol	Nominal	Sensitivity	Bias	Uncertainty	Component
ΔT	25.0.K	+3.94%/K	0.10.K	0.39%	LM35C differential
P	100.kPa	+0.0004%/Pa	1.5.kPa	0.66%	MPXH6115A6U air pressure
η	0.340	+128%	0.007	0.87%	anemometer calibration
Re_0	600	-0.011%	60	0.67%	integration lower-bound
C_B	0.541	+9.80%	0.100	0.98%	bypass coefficient
D_o	2.81.mm	-5347%/m	500.um	2.67%	tube outer diameter
D_i	1.11.mm	+12313%/m	200.um	2.46%	tube inner diameter
D_g	166.um	-512%/m	750.um	0.38%	tube air gap
L_{wire}	38.0.mm	+2135%/m	500.um	1.07%	wire length
k_{ABS}	179. $\frac{\text{mW}}{\text{K}\cdot\text{m}}$	+0.150%/ $\frac{\text{mW}}{\text{K}\cdot\text{m}}$	9.0. $\frac{\text{mW}}{\text{K}\cdot\text{m}}$	1.35%	ABS thermal conductivity
d	12.0.mm	+7314%/m	100.um	0.73%	disk diameter
				4.43%	combined bias uncertainty
Symbol	Nominal	Sensitivity	Variability	Uncertainty	Component
ω	750.r/min	+0.058%/(r/min)	0.67.r/min	0.04%	fan rotation rate
				4.43%	RSS combined uncertainty



$\theta = 0.0^\circ$; $\psi = 180.0^\circ$; $V = 2.726$ m/s (1000 r/min)

Estimated measurement uncertainties at $Re = 1984$.

Symbol	Nominal	Sensitivity	Bias	Uncertainty	Component
ΔT	25.0.K	+3.96%/K	0.10.K	0.40%	LM35C differential
P	100.kPa	+0.0004%/Pa	1.5.kPa	0.67%	MPXH6115A6U air pressure
η	0.340	+117%	0.007	0.80%	anemometer calibration
Re_0	600	-0.011%	60	0.64%	integration lower-bound
C_B	0.541	+10.1%	0.100	1.01%	bypass coefficient
D_o	2.81.mm	-5567%/m	500.um	2.78%	tube outer diameter
D_i	1.11.mm	+12388%/m	200.um	2.48%	tube inner diameter
D_g	166.um	-518%/m	750.um	0.39%	tube air gap
L_{wire}	38.0.mm	+2157%/m	500.um	1.08%	wire length
k_{ABS}	179. $\frac{\text{mW}}{\text{K}\cdot\text{m}}$	+0.146%/ $\frac{\text{mW}}{\text{K}\cdot\text{m}}$	9.0. $\frac{\text{mW}}{\text{K}\cdot\text{m}}$	1.31%	ABS thermal conductivity
d	12.0.mm	+7668%/m	100.um	0.77%	disk diameter
				4.49%	combined bias uncertainty
Symbol	Nominal	Sensitivity	Variability	Uncertainty	Component
ω	1000.r/min	+0.040%/(r/min)	3.9.r/min	0.16%	fan rotation rate
				4.50%	RSS combined uncertainty