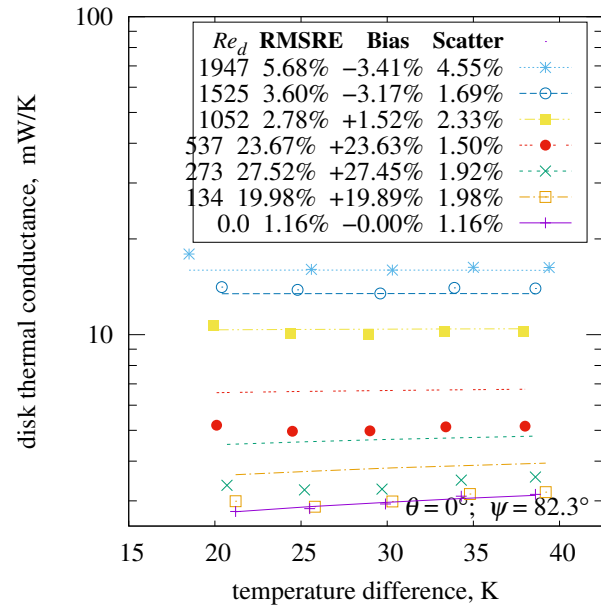
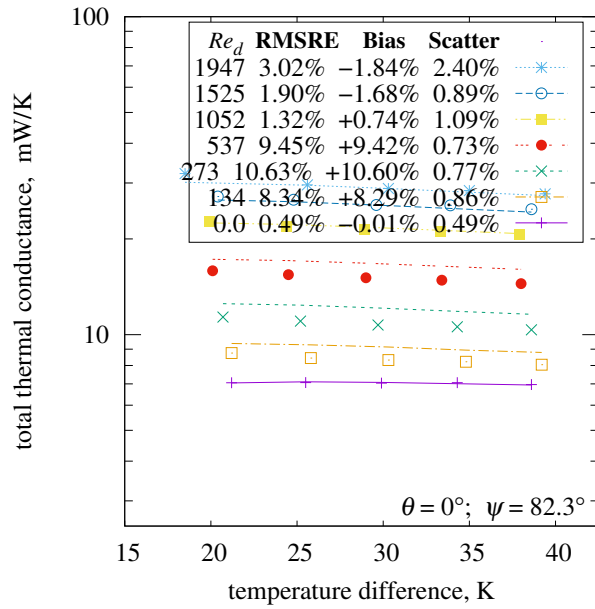
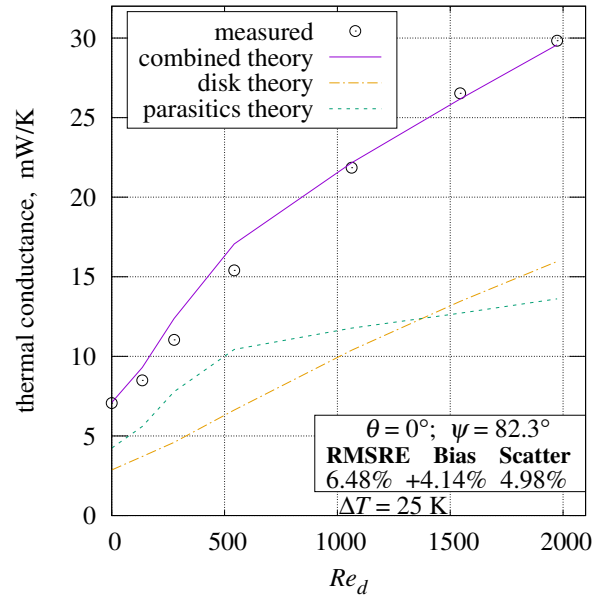
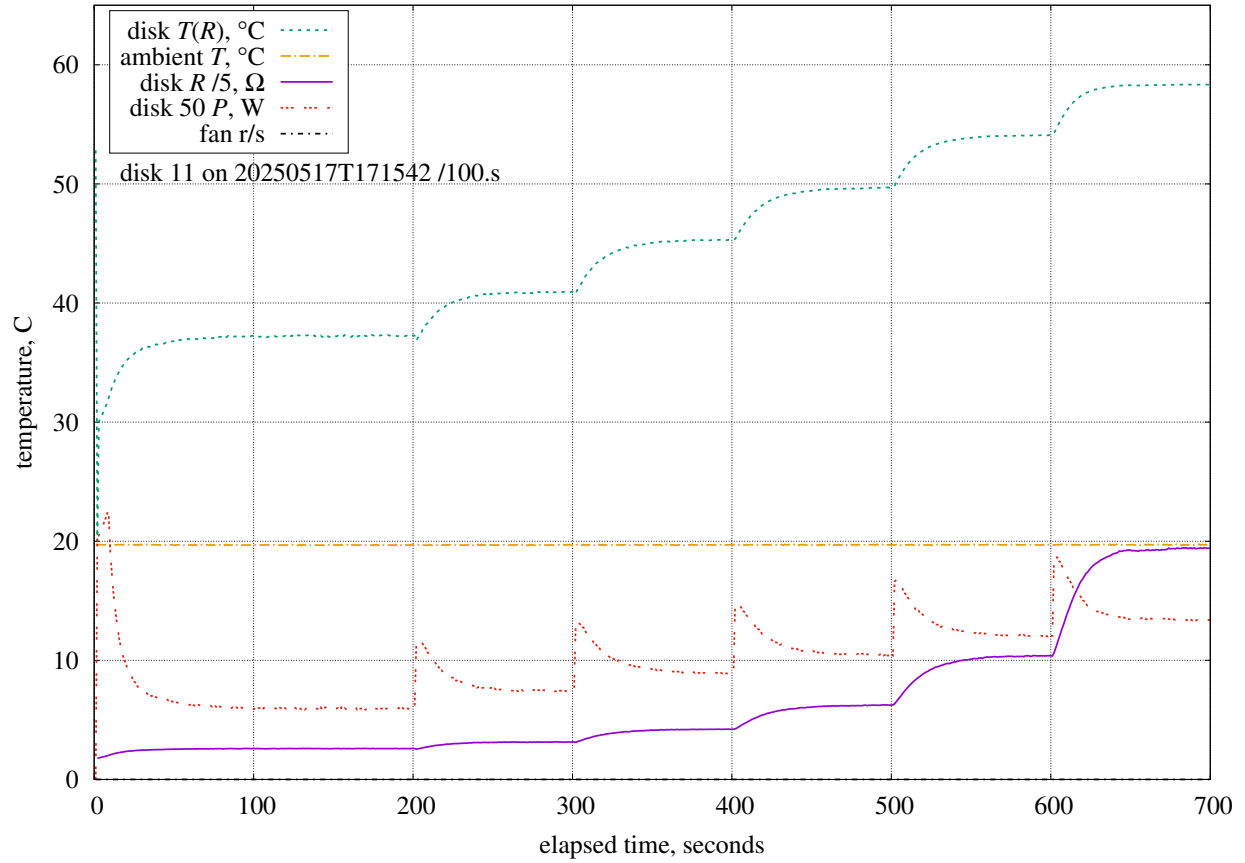


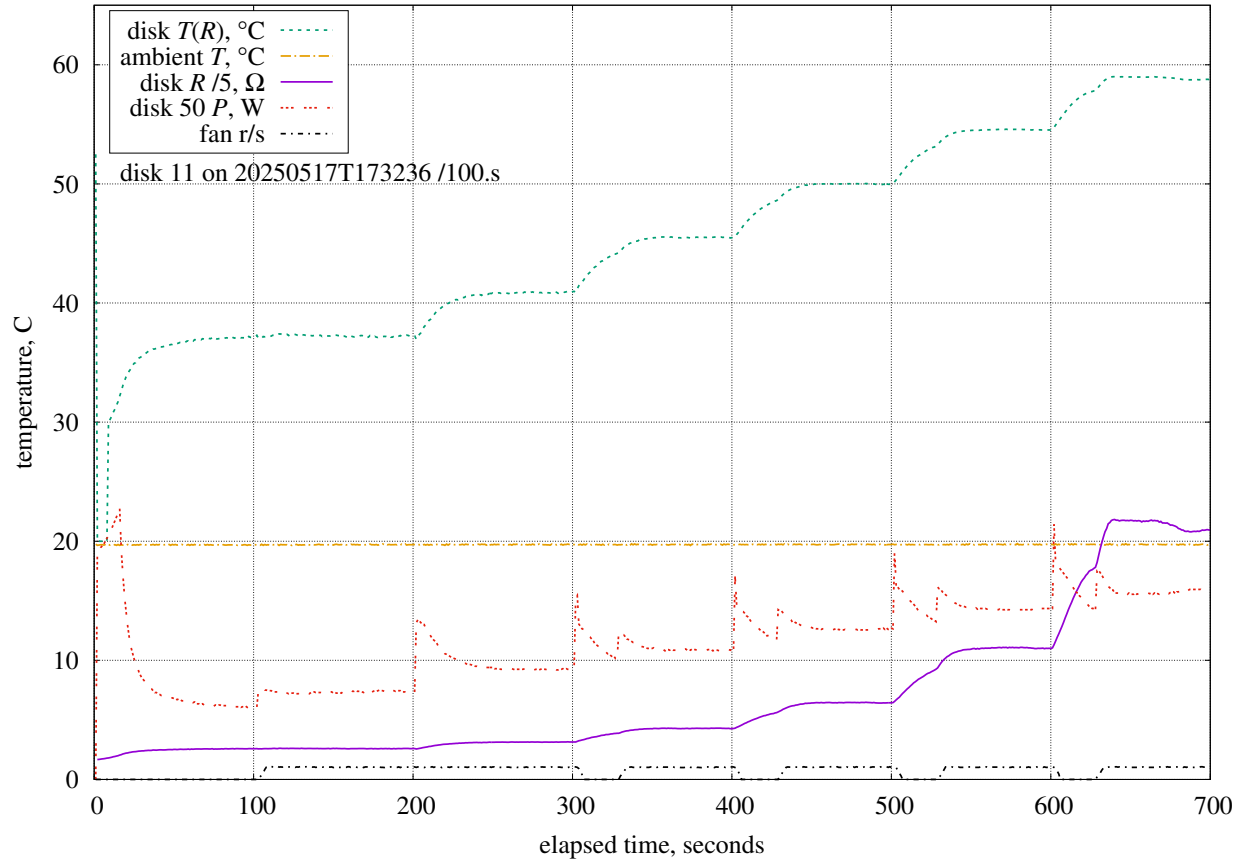




$\theta = 0.0^\circ$; $\psi = 82.3^\circ$; $V = 0.000 \text{ m/s}$ (0 r/min)

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

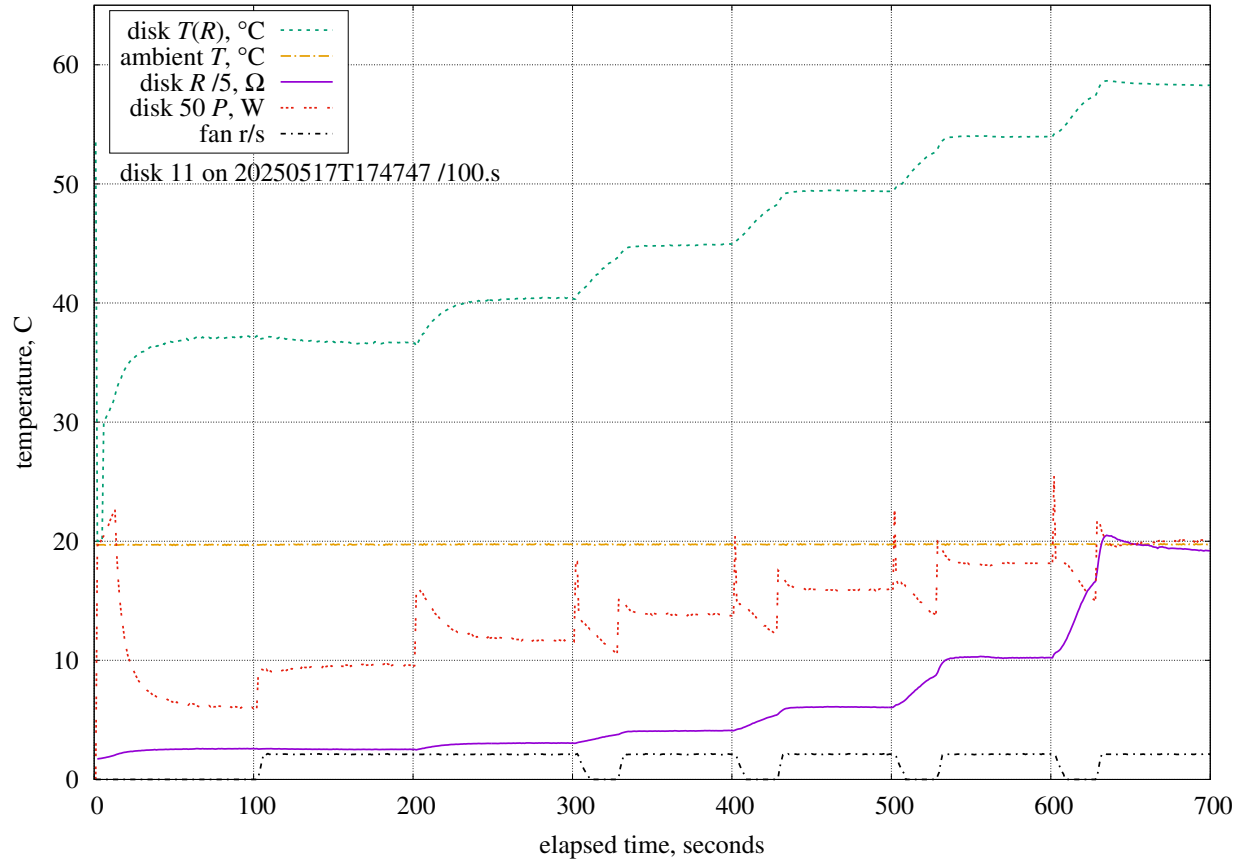
Symbol	Nominal	Sensitivity	Bias	Uncertainty	Component
ΔT	25.0.K	+4.37%/K	0.10.K	0.44%	LM35C differential
P	99.1.kPa	+0.0002%/Pa	1.5.kPa	0.26%	MPXH6115A6U air pressure
D_o	2.81.mm	+3801%/m	500.um	1.90%	tube outer diameter
D_i	1.11.mm	+3996%/m	200.um	0.80%	tube inner diameter
L_{wire}	38.0.mm	+1013%/m	500.um	0.51%	wire length
k_{ABS}	179. $\frac{\text{mW}}{\text{K}\cdot\text{m}}$	+0.123%/ $\frac{\text{mW}}{\text{K}\cdot\text{m}}$	9.0. $\frac{\text{mW}}{\text{K}\cdot\text{m}}$	1.10%	ABS thermal conductivity
d	12.0.mm	+4487%/m	100.um	0.45%	disk diameter
θ	50.0.m°	+3.65%/°	0.20.°	0.73%	plate angle
				2.60%	combined bias uncertainty



$\theta = 0.0^\circ$; $\psi = 82.3^\circ$; $V = 0.186 \text{ m/s}$ (62 r/min)

Estimated measurement uncertainties at $Re = 135$.

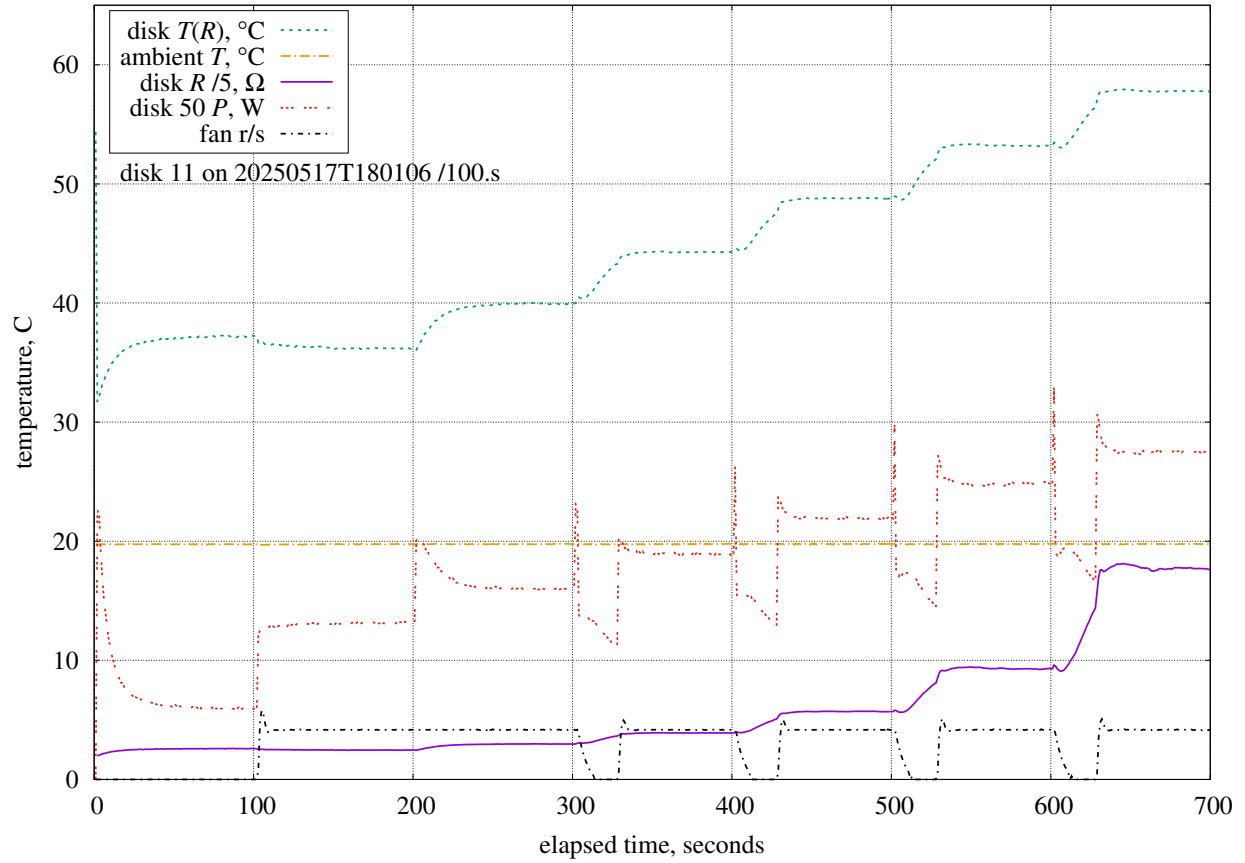
Symbol	Nominal	Sensitivity	Bias	Uncertainty	Component
ΔT	25.0.K	+4.11%/K	0.10.K	0.41%	LM35C differential
P	99.0.kPa	+0.0003%/Pa	1.5.kPa	0.46%	MPXH6115A6U air pressure
η	0.340	+77.2%	0.007	0.52%	anemometer calibration
Re_0	600	-0.0045%	60	0.27%	integration lower-bound
D_o	2.81.mm	+641%/m	500.um	0.32%	tube outer diameter
D_i	1.11.mm	+6487%/m	200.um	1.30%	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. $\frac{\text{mW}}{\text{K}\cdot\text{m}}$	+0.147%/ $\frac{\text{mW}}{\text{K}\cdot\text{m}}$	9.0. $\frac{\text{mW}}{\text{K}\cdot\text{m}}$	1.31%	ABS thermal conductivity
d	12.0.mm	+4620%/m	100.um	0.46%	disk diameter
θ	50.0.m°	+6.09%/°	0.20.°	1.22%	plate angle
				2.54%	combined bias uncertainty
Symbol	Nominal	Sensitivity	Variability	Uncertainty	Component
ω	61.9.r/min	+0.424%/(r/min)	0.99.r/min	0.42%	fan rotation rate
				2.68%	RSS combined uncertainty



$\theta = 0.0^\circ$; $\psi = 82.3^\circ$; $V = 0.381 \text{ m/s}$ (127 r/min)

Estimated measurement uncertainties at $Re = 277$.

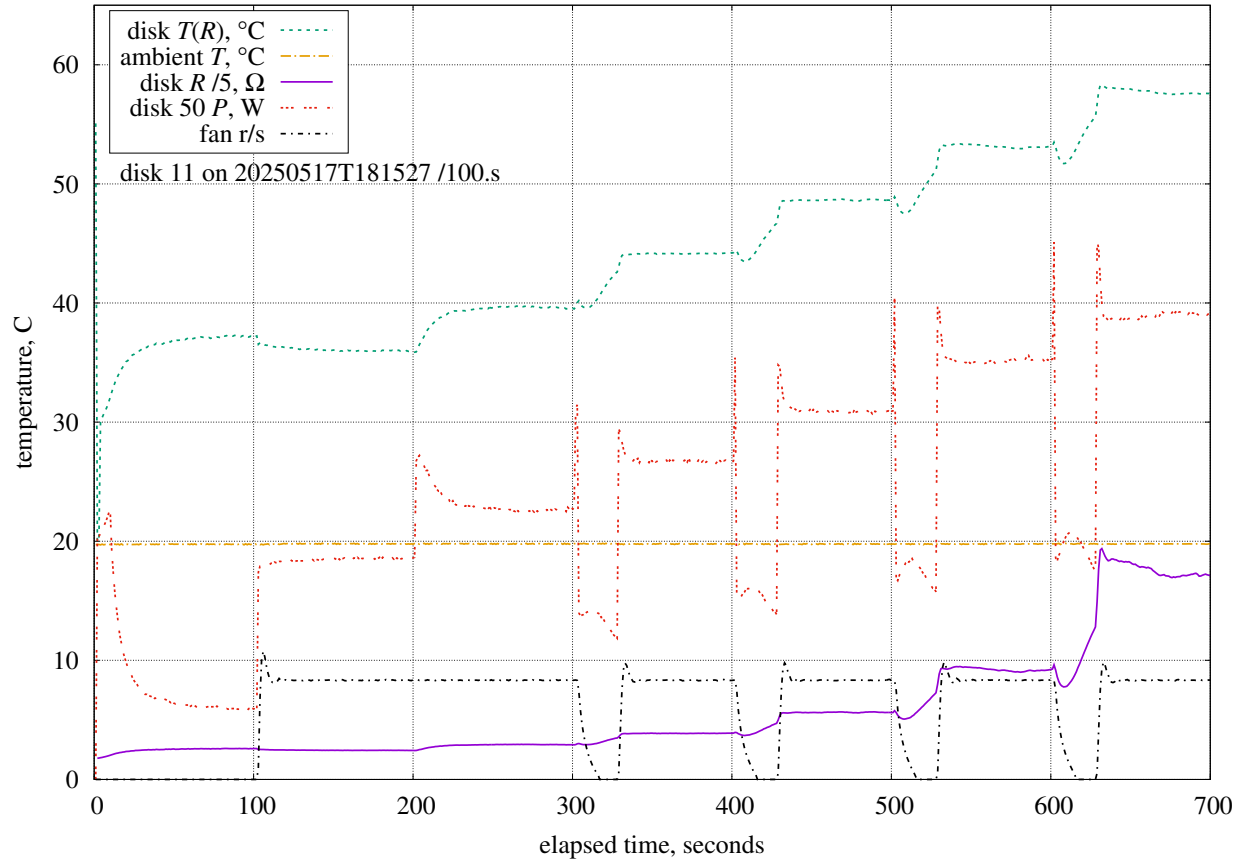
Symbol	Nominal	Sensitivity	Bias	Uncertainty	Component
ΔT	25.0.K	+4.07%/K	0.10.K	0.41%	LM35C differential
P	99.0.kPa	+0.0005%/Pa	1.5.kPa	0.81%	MPXH6115A6U air pressure
η	0.340	+151%	0.007	1.03%	anemometer calibration
Re_0	600	−0.0065%	60	0.39%	integration lower-bound
D_o	2.81.mm	+5359%/m	500.um	2.68%	tube outer diameter
D_i	1.11.mm	+10379%/m	200.um	2.08%	tube inner diameter
D_g	166.um	−445%/m	750.um	0.33%	tube air gap
L_{wire}	38.0.mm	+1853%/m	500.um	0.93%	wire length
k_{ABS}	179. $\frac{\text{mW}}{\text{K}\cdot\text{m}}$	+0.168%/ $\frac{\text{mW}}{\text{K}\cdot\text{m}}$	9.0. $\frac{\text{mW}}{\text{K}\cdot\text{m}}$	1.51%	ABS thermal conductivity
d	12.0.mm	+4716%/m	100.um	0.47%	disk diameter
θ	50.0.m°	+2.75%/°	0.20.°	0.55%	plate angle
				4.16%	combined bias uncertainty
Symbol	Nominal	Sensitivity	Variability	Uncertainty	Component
ω	127.r/min	+0.405%/(r/min)	1.0.r/min	0.41%	fan rotation rate
				4.24%	RSS combined uncertainty



$\theta = 0.0^\circ$; $\psi = 82.3^\circ$; $V = 0.749$ m/s (250 r/min)

Estimated measurement uncertainties at $Re = 543$.

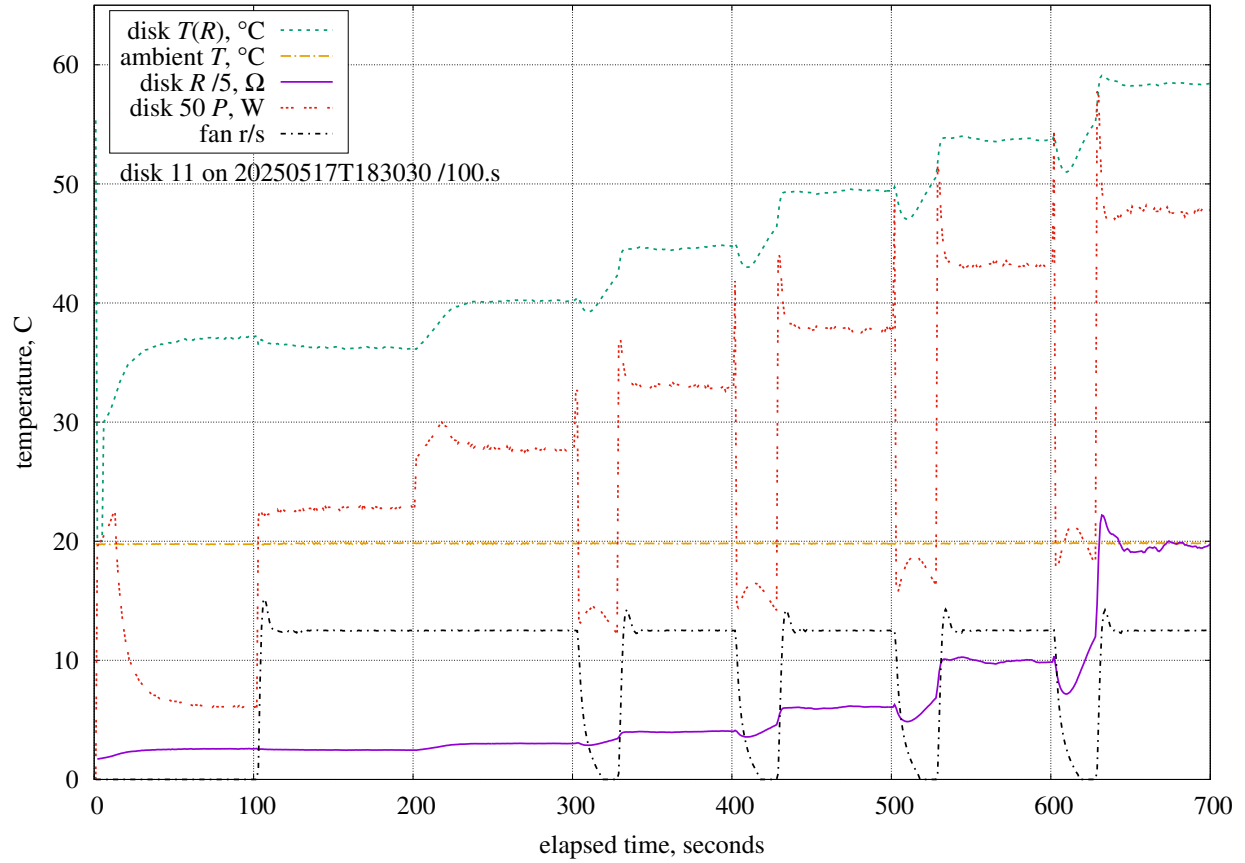
Symbol	Nominal	Sensitivity	Bias	Uncertainty	Component
ΔT	25.0.K	+4.04%/K	0.10.K	0.40%	LM35C differential
P	99.0.kPa	+0.0004%/Pa	1.5.kPa	0.56%	MPXH6115A6U air pressure
η	0.340	+106%	0.007	0.72%	anemometer calibration
Re_0	600	-0.0076%	60	0.46%	integration lower-bound
C_B	0.541	+4.78%	0.100	0.48%	bypass coefficient
D_o	2.81.mm	-5074%/m	500.um	2.54%	tube outer diameter
D_i	1.11.mm	+14036%/m	200.um	2.81%	tube inner diameter
D_g	166.um	-559%/m	750.um	0.42%	tube air gap
L_{wire}	38.0.mm	+2328%/m	500.um	1.16%	wire length
k_{ABS}	179. $\frac{\text{mW}}{\text{K}\cdot\text{m}}$	+0.183%/ $\frac{\text{mW}}{\text{K}\cdot\text{m}}$	9.0. $\frac{\text{mW}}{\text{K}\cdot\text{m}}$	1.64%	ABS thermal conductivity
d	12.0.mm	+5460%/m	100.um	0.55%	disk diameter
θ	50.0.m $^\circ$	+1.11%/°	0.20.°	0.22%	plate angle
				4.51%	combined bias uncertainty
Symbol	Nominal	Sensitivity	Variability	Uncertainty	Component
ω	250.r/min	+0.144%/(r/min)	1.3.r/min	0.19%	fan rotation rate
				4.52%	RSS combined uncertainty



$\theta = 0.0^\circ$; $\psi = 82.3^\circ$; $V = 1.467 \text{ m/s}$ (500 r/min)

Estimated measurement uncertainties at $Re = 1063$.

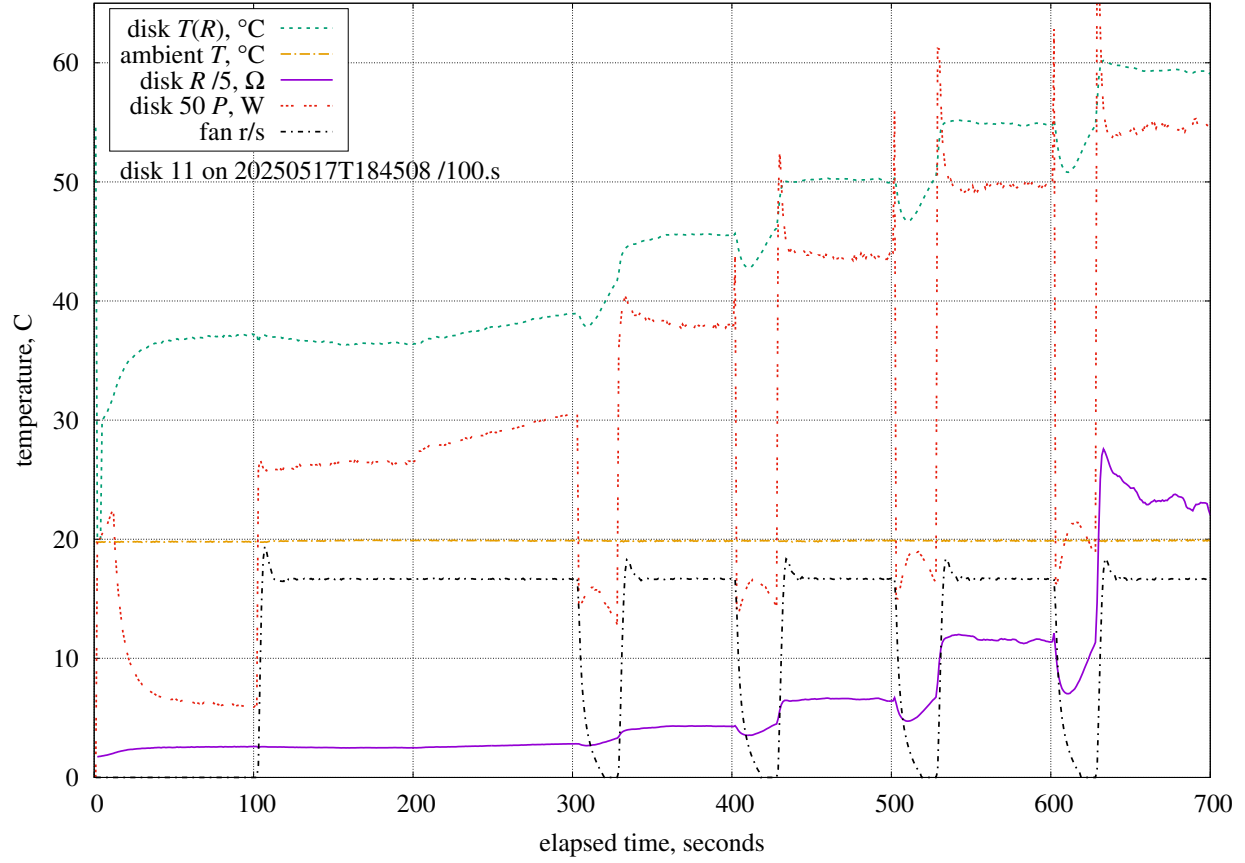
Symbol	Nominal	Sensitivity	Bias	Uncertainty	Component
ΔT	25.0.K	+4.01%/K	0.10.K	0.40%	LM35C differential
P	98.9.kPa	+0.0003%/Pa	1.5.kPa	0.47%	MPXH6115A6U air pressure
η	0.340	+90.7%	0.007	0.62%	anemometer calibration
Re_0	600	-0.0085%	60	0.51%	integration lower-bound
C_B	0.541	+7.08%	0.100	0.71%	bypass coefficient
D_o	2.81.mm	-9016%/m	500.um	4.51%	tube outer diameter
D_i	1.11.mm	+12769%/m	200.um	2.55%	tube inner diameter
D_g	166.um	-550%/m	750.um	0.41%	tube air gap
L_{wire}	38.0.mm	+2291%/m	500.um	1.15%	wire length
k_{ABS}	179. $\frac{\text{mW}}{\text{K}\cdot\text{m}}$	+0.162%/ $\frac{\text{mW}}{\text{K}\cdot\text{m}}$	9.0. $\frac{\text{mW}}{\text{K}\cdot\text{m}}$	1.45%	ABS thermal conductivity
d	12.0.mm	+6646%/m	100.um	0.66%	disk diameter
				5.70%	combined bias uncertainty
Symbol	Nominal	Sensitivity	Variability	Uncertainty	Component
ω	500.r/min	+0.062%/(r/min)	1.4.r/min	0.08%	fan rotation rate
				5.70%	RSS combined uncertainty



$\theta = 0.0^\circ$; $\psi = 82.3^\circ$; $V = 2.131 \text{ m/s}$ (750 r/min)

Estimated measurement uncertainties at $Re = 1544$.

Symbol	Nominal	Sensitivity	Bias	Uncertainty	Component
ΔT	25.0.K	+4.00%/K	0.10.K	0.40%	LM35C differential
P	98.9.kPa	+0.0004%/Pa	1.5.kPa	0.65%	MPXH6115A6U air pressure
η	0.340	+119%	0.007	0.81%	anemometer calibration
Re_0	600	-0.0087%	60	0.52%	integration lower-bound
C_B	0.541	+8.17%	0.100	0.82%	bypass coefficient
D_o	2.81.mm	-5561%/m	500.um	2.78%	tube outer diameter
D_i	1.11.mm	+12035%/m	200.um	2.41%	tube inner diameter
D_g	166.um	-543%/m	750.um	0.41%	tube air gap
L_{wire}	38.0.mm	+2265%/m	500.um	1.13%	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	+7273%/m	100.um	0.73%	disk diameter
				4.42%	combined bias uncertainty
Symbol	Nominal	Sensitivity	Variability	Uncertainty	Component
ω	750.r/min	+0.054%/(r/min)	0.84.r/min	0.05%	fan rotation rate
				4.42%	RSS combined uncertainty



$\theta = 0.0^\circ$; $\psi = 82.3^\circ$; $V = 2.726$ m/s (1000 r/min)

Estimated measurement uncertainties at $Re = 1974$.

Symbol	Nominal	Sensitivity	Bias	Uncertainty	Component
ΔT	25.0.K	+4.00%/K	0.10.K	0.40%	LM35C differential
P	98.9.kPa	+0.0004%/Pa	1.5.kPa	0.67%	MPXH6115A6U air pressure
η	0.340	+113%	0.007	0.77%	anemometer calibration
Re_0	600	-0.0085%	60	0.51%	integration lower-bound
C_B	0.541	+8.80%	0.100	0.88%	bypass coefficient
D_o	2.81.mm	-5546%/m	500.um	2.77%	tube outer diameter
D_i	1.11.mm	+12154%/m	200.um	2.43%	tube inner diameter
D_g	166.um	-548%/m	750.um	0.41%	tube air gap
L_{wire}	38.0.mm	+2285%/m	500.um	1.14%	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	+7618%/m	100.um	0.76%	disk diameter
				4.43%	combined bias uncertainty
Symbol	Nominal	Sensitivity	Variability	Uncertainty	Component
ω	1000.r/min	+0.038%/(r/min)	2.1.r/min	0.08%	fan rotation rate
				4.43%	RSS combined uncertainty