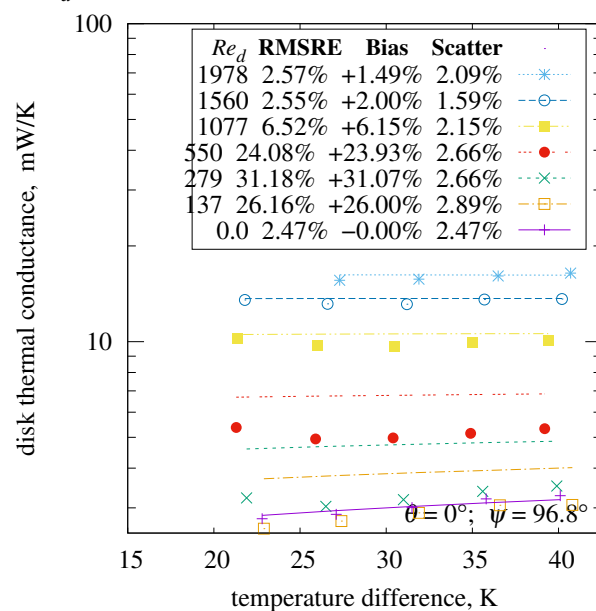
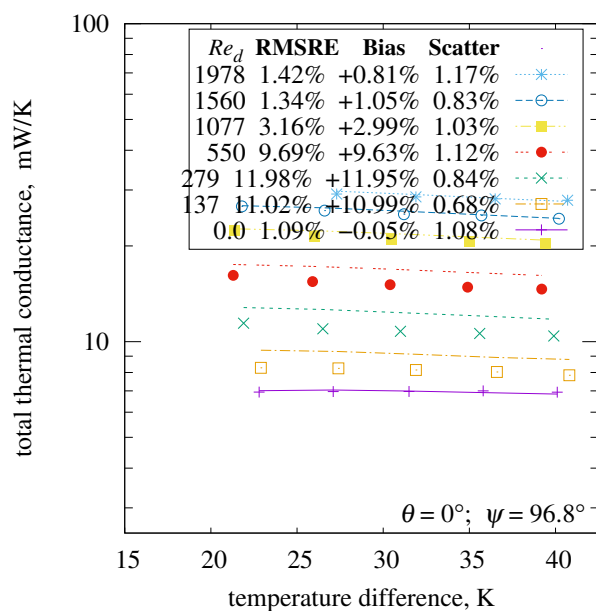
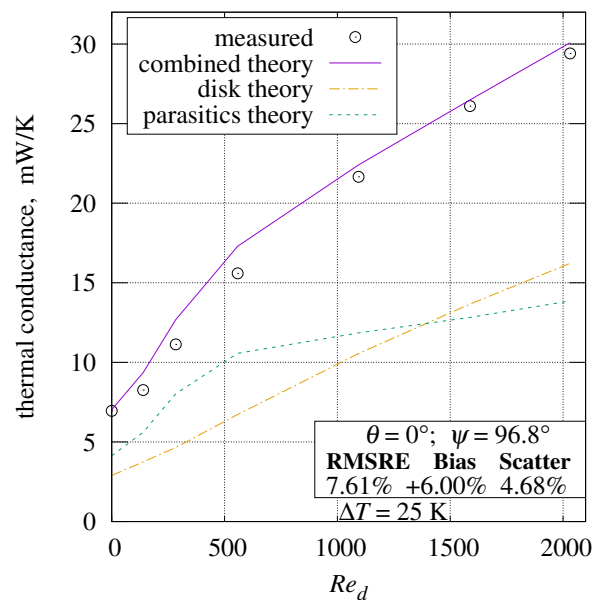
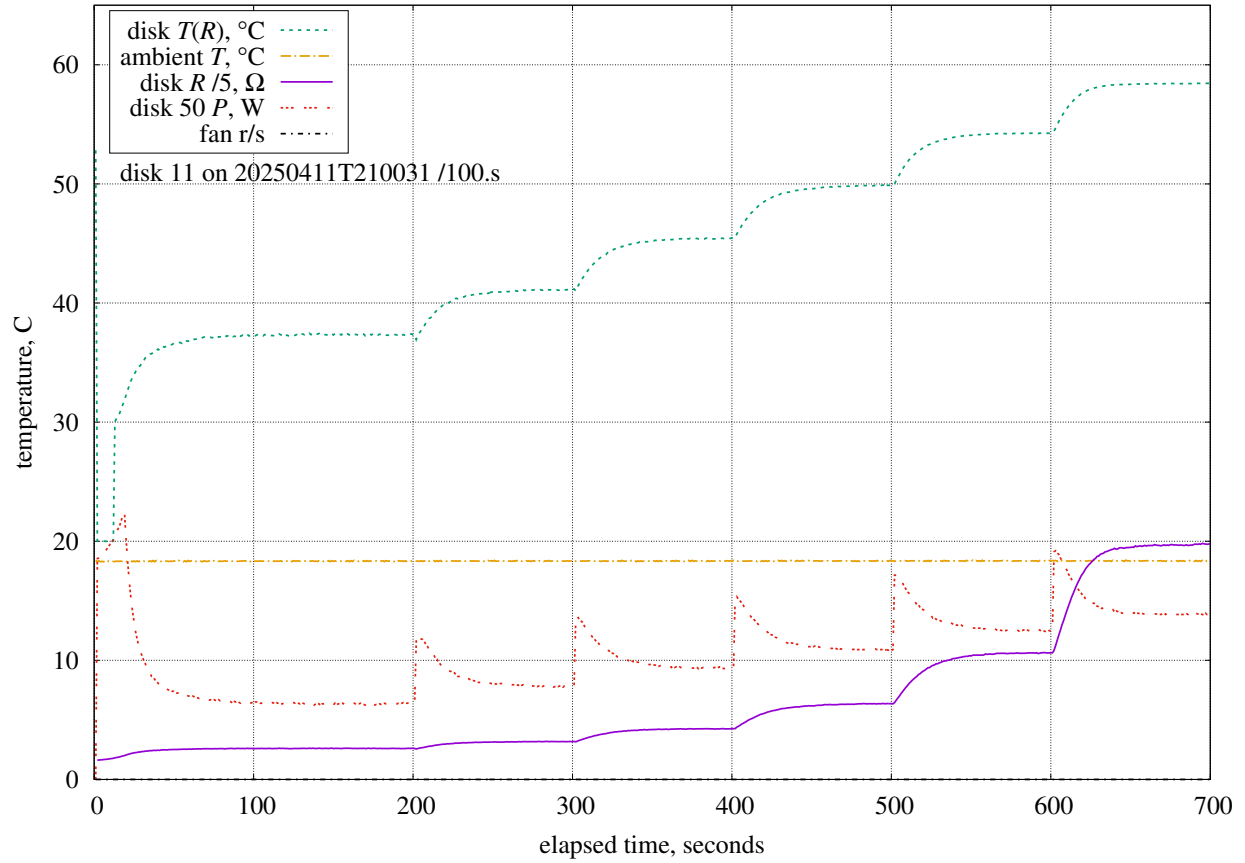


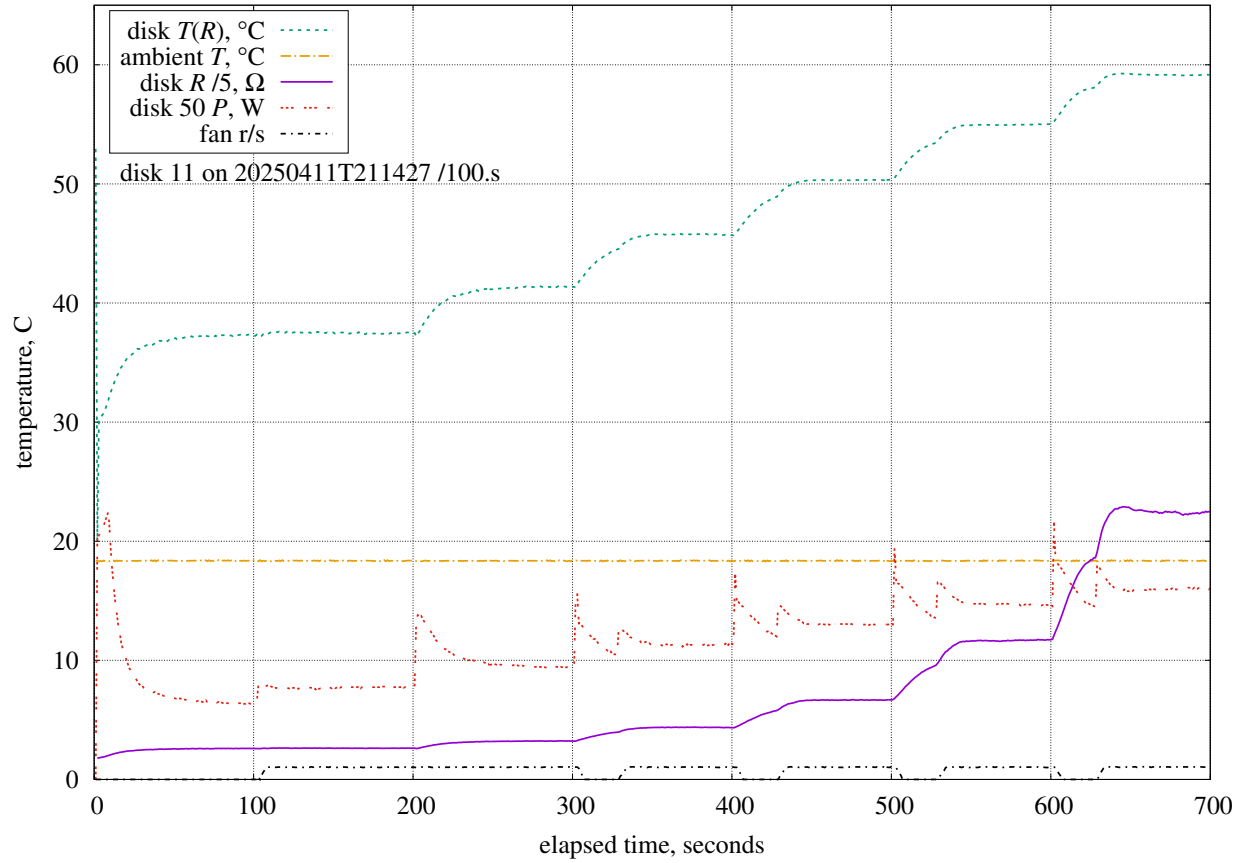




$\theta = 0.0^\circ$; $\psi = 96.8^\circ$; $V = 0.000 \text{ m/s}$ (0 r/min)

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

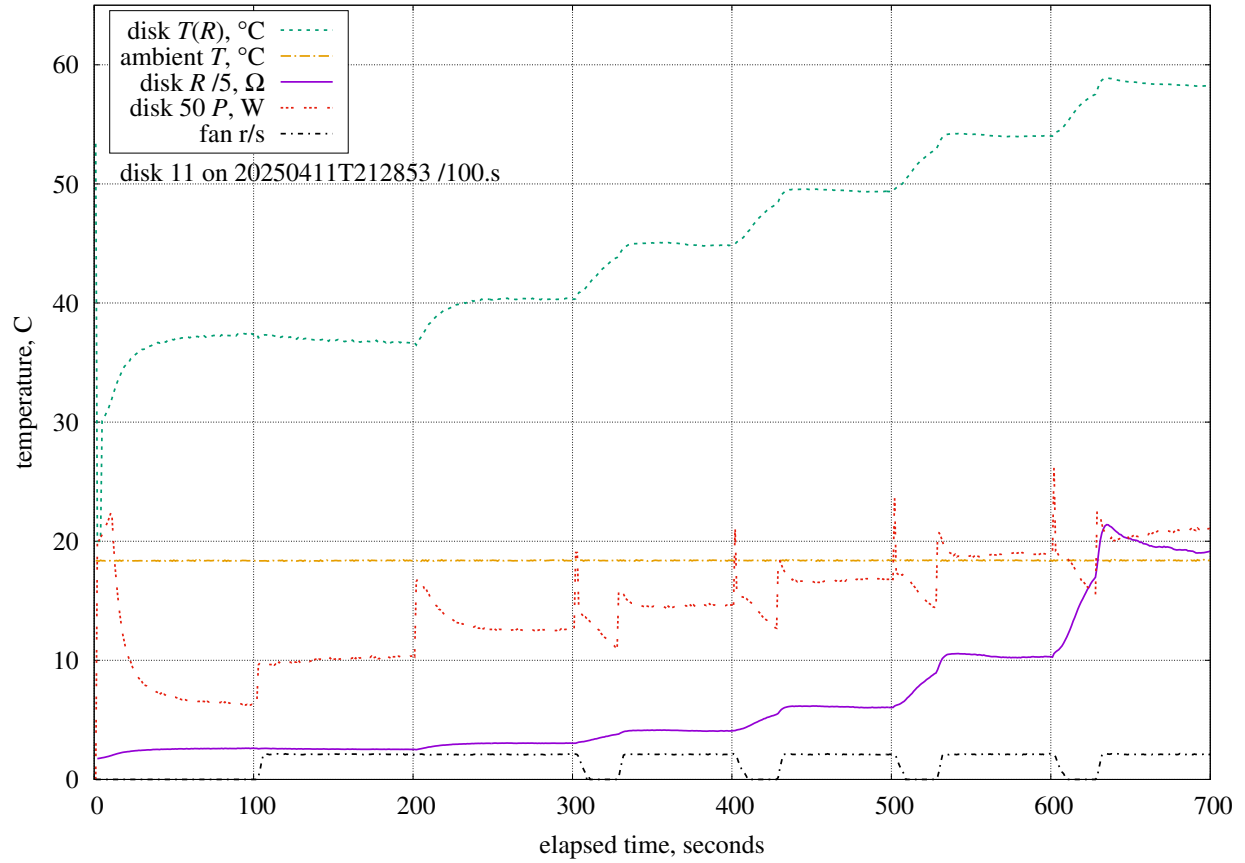
Symbol	Nominal	Sensitivity	Bias	Uncertainty	Component
ΔT	25.0.K	+4.36%/K	0.10.K	0.44%	LM35C differential
P	101.kPa	+0.0002%/Pa	1.5.kPa	0.24%	MPXH6115A6U air pressure
D_o	2.81.mm	+3778%/m	500.um	1.89%	tube outer diameter
D_i	1.11.mm	+3989%/m	200.um	0.80%	tube inner diameter
L_{wire}	38.0.mm	+1052%/m	500.um	0.53%	wire length
k_{ABS}	179. $\frac{\text{mW}}{\text{K}\cdot\text{m}}$	+0.125%/ $\frac{\text{mW}}{\text{K}\cdot\text{m}}$	9.0. $\frac{\text{mW}}{\text{K}\cdot\text{m}}$	1.12%	ABS thermal conductivity
d	12.0.mm	+4296%/m	100.um	0.43%	disk diameter
θ	50.0.m°	+3.66%/°	0.20.°	0.73%	plate angle
				2.60%	combined bias uncertainty



$\theta = 0.0^\circ$; $\psi = 96.8^\circ$; $V = 0.187 \text{ m/s}$ (62 r/min)

Estimated measurement uncertainties at $Re = 139$.

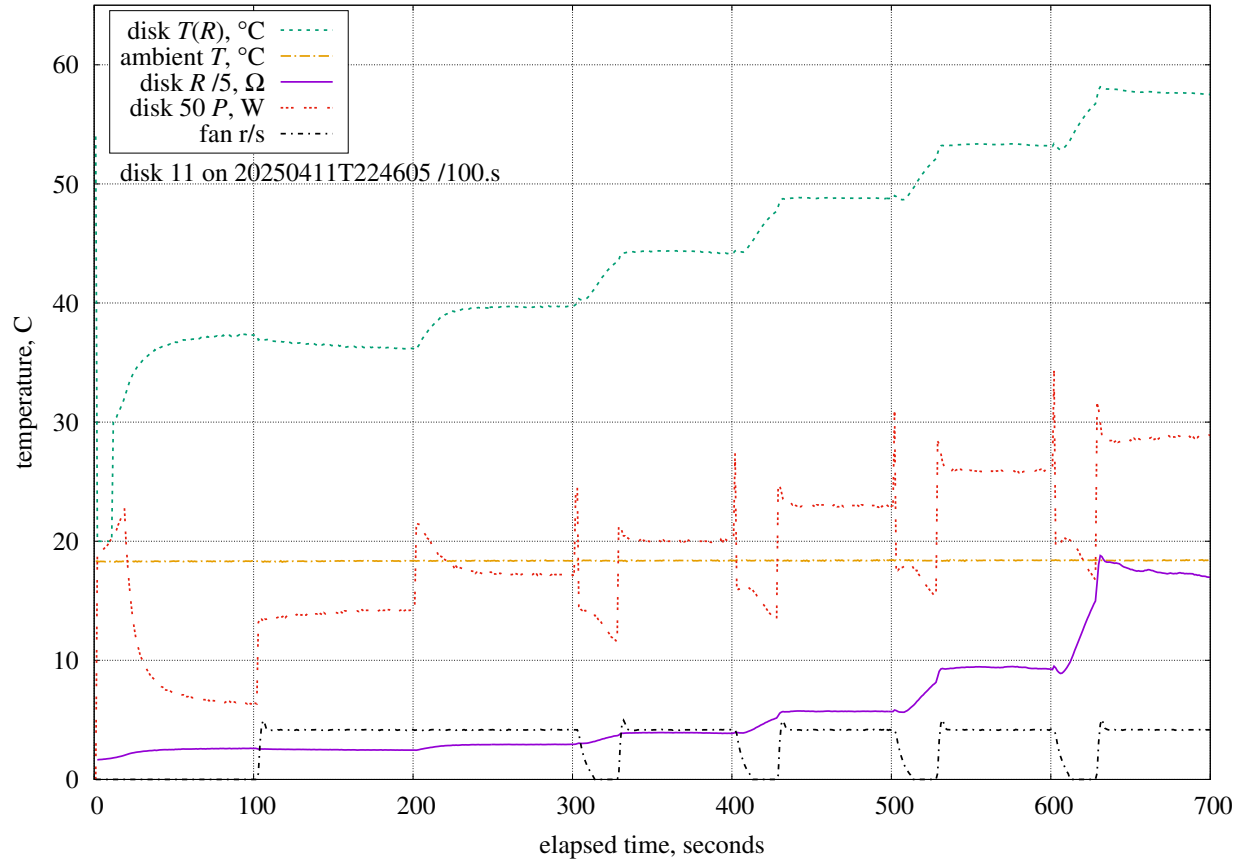
Symbol	Nominal	Sensitivity	Bias	Uncertainty	Component
ΔT	25.0.K	+4.10%/K	0.10.K	0.41%	LM35C differential
P	101.kPa	+0.0003%/Pa	1.5.kPa	0.46%	MPXH6115A6U air pressure
η	0.340	+81.2%	0.007	0.55%	anemometer calibration
Re_0	600	-0.0049%	60	0.30%	integration lower-bound
D_o	2.81.mm	+717%/m	500.um	0.36%	tube outer diameter
D_i	1.11.mm	+6528%/m	200.um	1.31%	tube inner diameter
D_g	166.um	-336%/m	750.um	0.25%	tube air gap
L_{wire}	38.0.mm	+1400%/m	500.um	0.70%	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	+4567%/m	100.um	0.46%	disk diameter
θ	50.0.m°	+6.11%/°	0.20.°	1.22%	plate angle
				2.57%	combined bias uncertainty
Symbol	Nominal	Sensitivity	Variability	Uncertainty	Component
ω	62.0.r/min	+0.445%/(r/min)	0.90.r/min	0.40%	fan rotation rate
				2.69%	RSS combined uncertainty



$\theta = 0.0^\circ$; $\psi = 96.8^\circ$; $V = 0.380$ m/s (126 r/min)

Estimated measurement uncertainties at $Re = 284$.

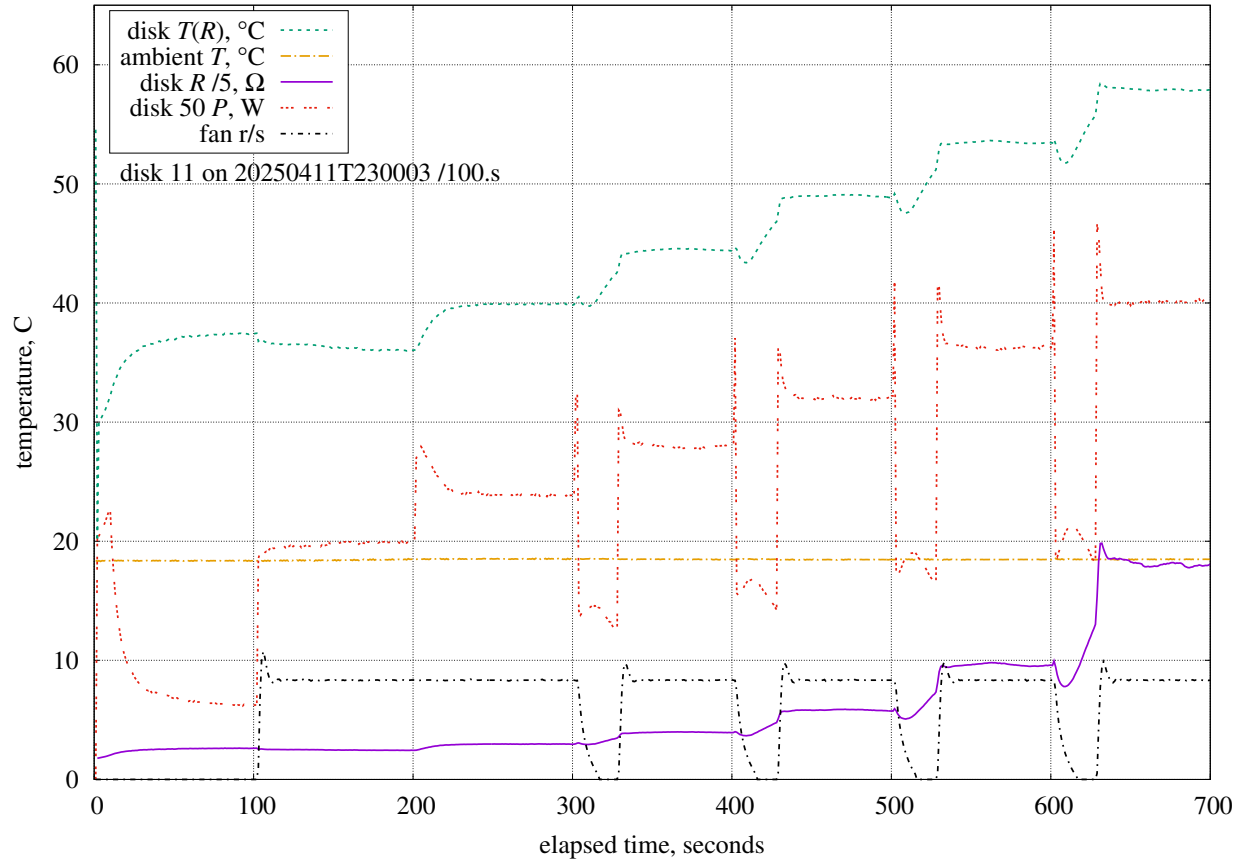
Symbol	Nominal	Sensitivity	Bias	Uncertainty	Component
ΔT	25.0.K	+4.07%/K	0.10.K	0.41%	LM35C differential
P	101.kPa	+0.0005%/Pa	1.5.kPa	0.81%	MPXH6115A6U air pressure
η	0.340	+155%	0.007	1.05%	anemometer calibration
Re_0	600	-0.0065%	60	0.39%	integration lower-bound
D_o	2.81.mm	+5721%/m	500.um	2.86%	tube outer diameter
D_i	1.11.mm	+10780%/m	200.um	2.16%	tube inner diameter
D_g	166.um	-467%/m	750.um	0.35%	tube air gap
L_{wire}	38.0.mm	+1947%/m	500.um	0.97%	wire length
k_{ABS}	179. $\frac{\text{mW}}{\text{K}\cdot\text{m}}$	+0.172%/ $\frac{\text{mW}}{\text{K}\cdot\text{m}}$	9.0. $\frac{\text{mW}}{\text{K}\cdot\text{m}}$	1.54%	ABS thermal conductivity
d	12.0.mm	+4621%/m	100.um	0.46%	disk diameter
θ	50.0.m°	+2.58%/°	0.20.°	0.52%	plate angle
				4.34%	combined bias uncertainty
Symbol	Nominal	Sensitivity	Variability	Uncertainty	Component
ω	126.r/min	+0.416%/(r/min)	1.0.r/min	0.43%	fan rotation rate
				4.43%	RSS combined uncertainty



$\theta = 0.0^\circ$; $\psi = 96.8^\circ$; $V = 0.748$ m/s (250 r/min)

Estimated measurement uncertainties at $Re = 558$.

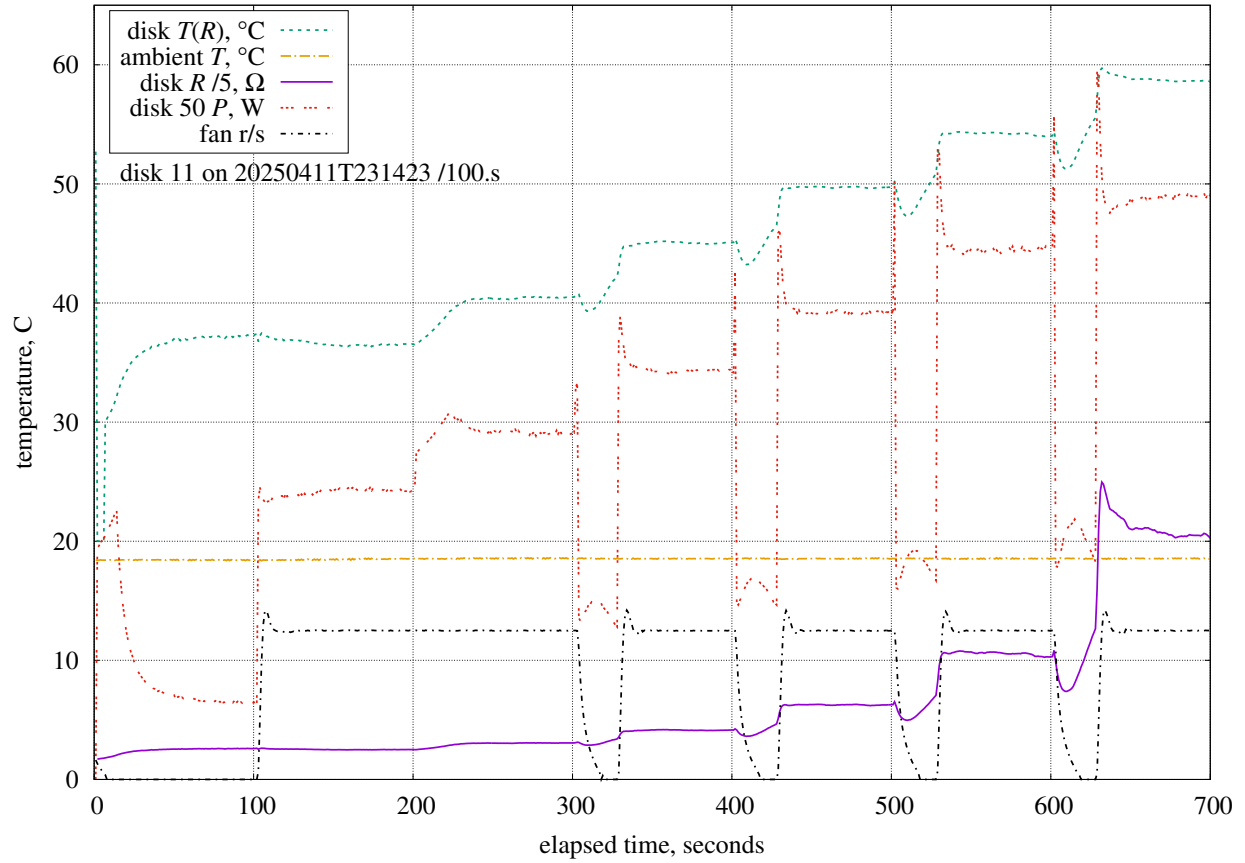
Symbol	Nominal	Sensitivity	Bias	Uncertainty	Component
ΔT	25.0.K	+4.04%/K	0.10.K	0.40%	LM35C differential
P	101.kPa	+0.0004%/Pa	1.5.kPa	0.54%	MPXH6115A6U air pressure
η	0.340	+105%	0.007	0.72%	anemometer calibration
Re_0	600	-0.0076%	60	0.46%	integration lower-bound
C_B	0.541	+4.84%	0.100	0.48%	bypass coefficient
D_o	2.81.mm	-5120%/m	500.um	2.56%	tube outer diameter
D_i	1.11.mm	+13900%/m	200.um	2.78%	tube inner diameter
D_g	166.um	-573%/m	750.um	0.43%	tube air gap
L_{wire}	38.0.mm	+2386%/m	500.um	1.19%	wire length
k_{ABS}	179. $\frac{\text{mW}}{\text{K}\cdot\text{m}}$	+0.182%/ $\frac{\text{mW}}{\text{K}\cdot\text{m}}$	9.0. $\frac{\text{mW}}{\text{K}\cdot\text{m}}$	1.63%	ABS thermal conductivity
d	12.0.mm	+5428%/m	100.um	0.54%	disk diameter
θ	50.0.m°	+1.14%/°	0.20.°	0.23%	plate angle
				4.51%	combined bias uncertainty
Symbol	Nominal	Sensitivity	Variability	Uncertainty	Component
ω	250.r/min	+0.143%/(r/min)	1.1.r/min	0.15%	fan rotation rate
				4.52%	RSS combined uncertainty



$\theta = 0.0^\circ$; $\psi = 96.8^\circ$; $V = 1.467 \text{ m/s}$ (500 r/min)

Estimated measurement uncertainties at $Re = 1094$.

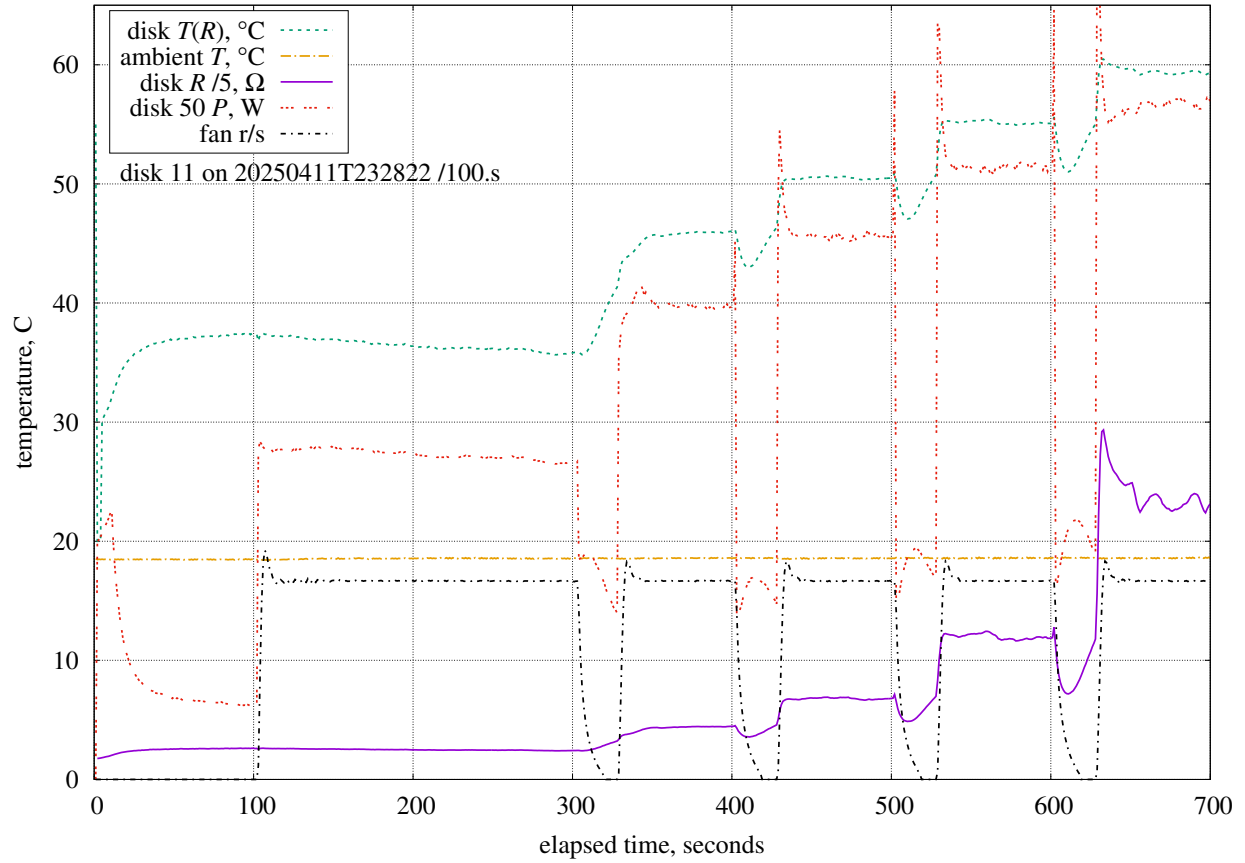
Symbol	Nominal	Sensitivity	Bias	Uncertainty	Component
ΔT	25.0.K	+4.01%/K	0.10.K	0.40%	LM35C differential
P	101.kPa	+0.0003%/Pa	1.5.kPa	0.47%	MPXH6115A6U air pressure
η	0.340	+92.5%	0.007	0.63%	anemometer calibration
Re_0	600	-0.0085%	60	0.51%	integration lower-bound
C_B	0.541	+7.14%	0.100	0.71%	bypass coefficient
D_o	2.81.mm	-8761%/m	500.um	4.38%	tube outer diameter
D_i	1.11.mm	+12535%/m	200.um	2.51%	tube inner diameter
D_g	166.um	-558%/m	750.um	0.42%	tube air gap
L_{wire}	38.0.mm	+2326%/m	500.um	1.16%	wire length
k_{ABS}	179. $\frac{\text{mW}}{\text{K}\cdot\text{m}}$	+0.161%/ $\frac{\text{mW}}{\text{K}\cdot\text{m}}$	9.0. $\frac{\text{mW}}{\text{K}\cdot\text{m}}$	1.44%	ABS thermal conductivity
d	12.0.mm	+6642%/m	100.um	0.66%	disk diameter
				5.58%	combined bias uncertainty
Symbol	Nominal	Sensitivity	Variability	Uncertainty	Component
ω	500.r/min	+0.063%/(r/min)	1.5.r/min	0.10%	fan rotation rate
				5.58%	RSS combined uncertainty



$\theta = 0.0^\circ$; $\psi = 96.8^\circ$; $V = 2.130$ m/s (750 r/min)

Estimated measurement uncertainties at $Re = 1588$.

Symbol	Nominal	Sensitivity	Bias	Uncertainty	Component
ΔT	25.0.K	+4.00%/K	0.10.K	0.40%	LM35C differential
P	101.kPa	+0.0004%/Pa	1.5.kPa	0.64%	MPXH6115A6U air pressure
η	0.340	+119%	0.007	0.81%	anemometer calibration
Re_0	600	-0.0086%	60	0.52%	integration lower-bound
C_B	0.541	+8.21%	0.100	0.82%	bypass coefficient
D_o	2.81.mm	-5518%/m	500.um	2.76%	tube outer diameter
D_i	1.11.mm	+11945%/m	200.um	2.39%	tube inner diameter
D_g	166.um	-553%/m	750.um	0.41%	tube air gap
L_{wire}	38.0.mm	+2305%/m	500.um	1.15%	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	+7259%/m	100.um	0.73%	disk diameter
				4.40%	combined bias uncertainty
Symbol	Nominal	Sensitivity	Variability	Uncertainty	Component
ω	750.r/min	+0.054%/(r/min)	0.97.r/min	0.05%	fan rotation rate
				4.40%	RSS combined uncertainty



$\theta = 0.0^\circ$; $\psi = 96.8^\circ$; $V = 2.726$ m/s (1000 r/min)

Estimated measurement uncertainties at $Re = 2031$.

Symbol	Nominal	Sensitivity	Bias	Uncertainty	Component
ΔT	25.0.K	+4.00%/K	0.10.K	0.40%	LM35C differential
P	101.kPa	+0.0004%/Pa	1.5.kPa	0.65%	MPXH6115A6U air pressure
η	0.340	+111%	0.007	0.76%	anemometer calibration
Re_0	600	-0.0084%	60	0.50%	integration lower-bound
C_B	0.541	+8.80%	0.100	0.88%	bypass coefficient
D_o	2.81.mm	-5517%/m	500.um	2.76%	tube outer diameter
D_i	1.11.mm	+11940%/m	200.um	2.39%	tube inner diameter
D_g	166.um	-567%/m	750.um	0.43%	tube air gap
L_{wire}	38.0.mm	+2363%/m	500.um	1.18%	wire length
k_{ABS}	179. $\frac{\text{mW}}{\text{K}\cdot\text{m}}$	+0.145%/ $\frac{\text{mW}}{\text{K}\cdot\text{m}}$	9.0. $\frac{\text{mW}}{\text{K}\cdot\text{m}}$	1.30%	ABS thermal conductivity
d	12.0.mm	+7569%/m	100.um	0.76%	disk diameter
				4.40%	combined bias uncertainty
Symbol	Nominal	Sensitivity	Variability	Uncertainty	Component
ω	1.00.kr/min	+0.038%/(r/min)	1.5.r/min	0.06%	fan rotation rate
				4.40%	RSS combined uncertainty