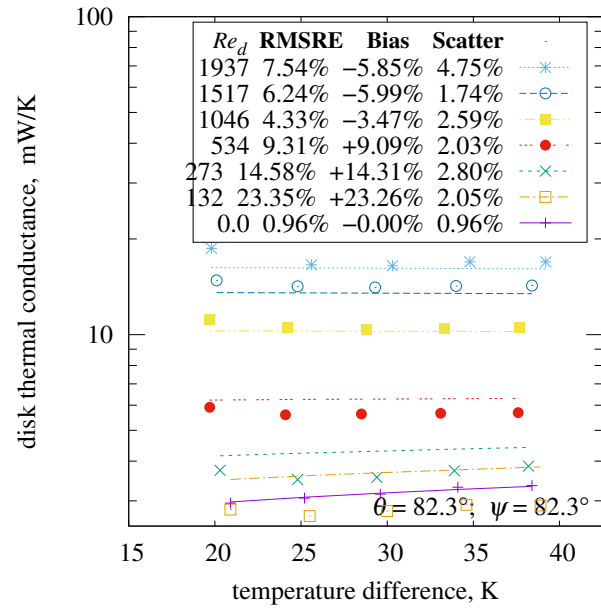
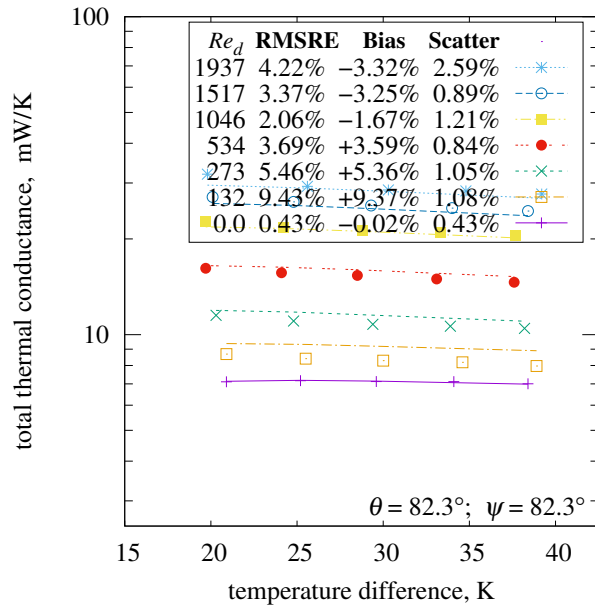
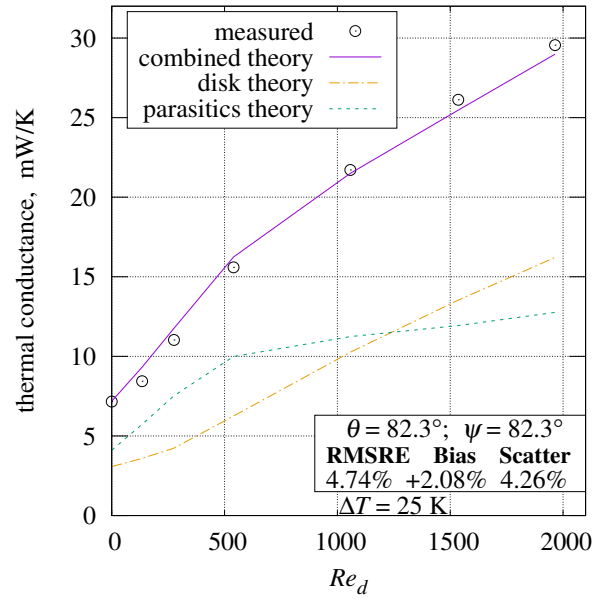
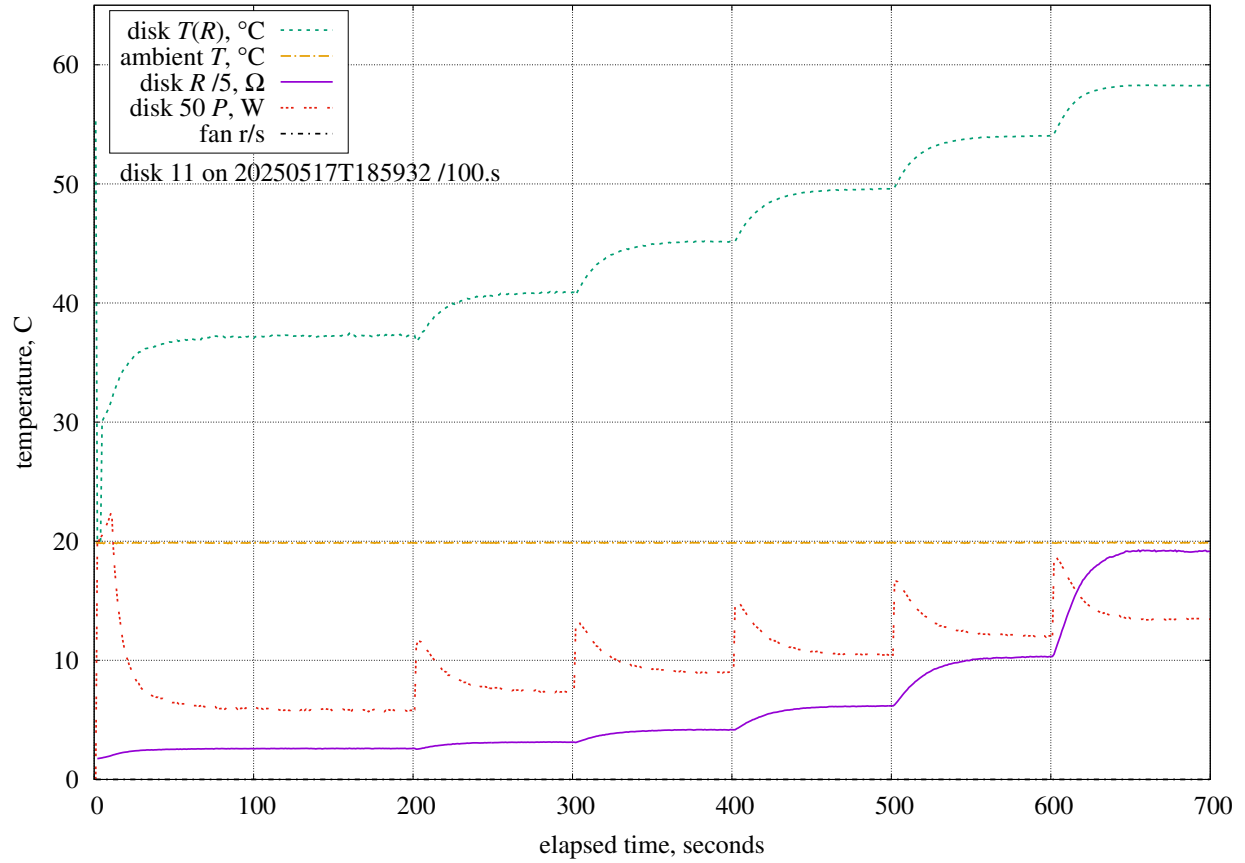


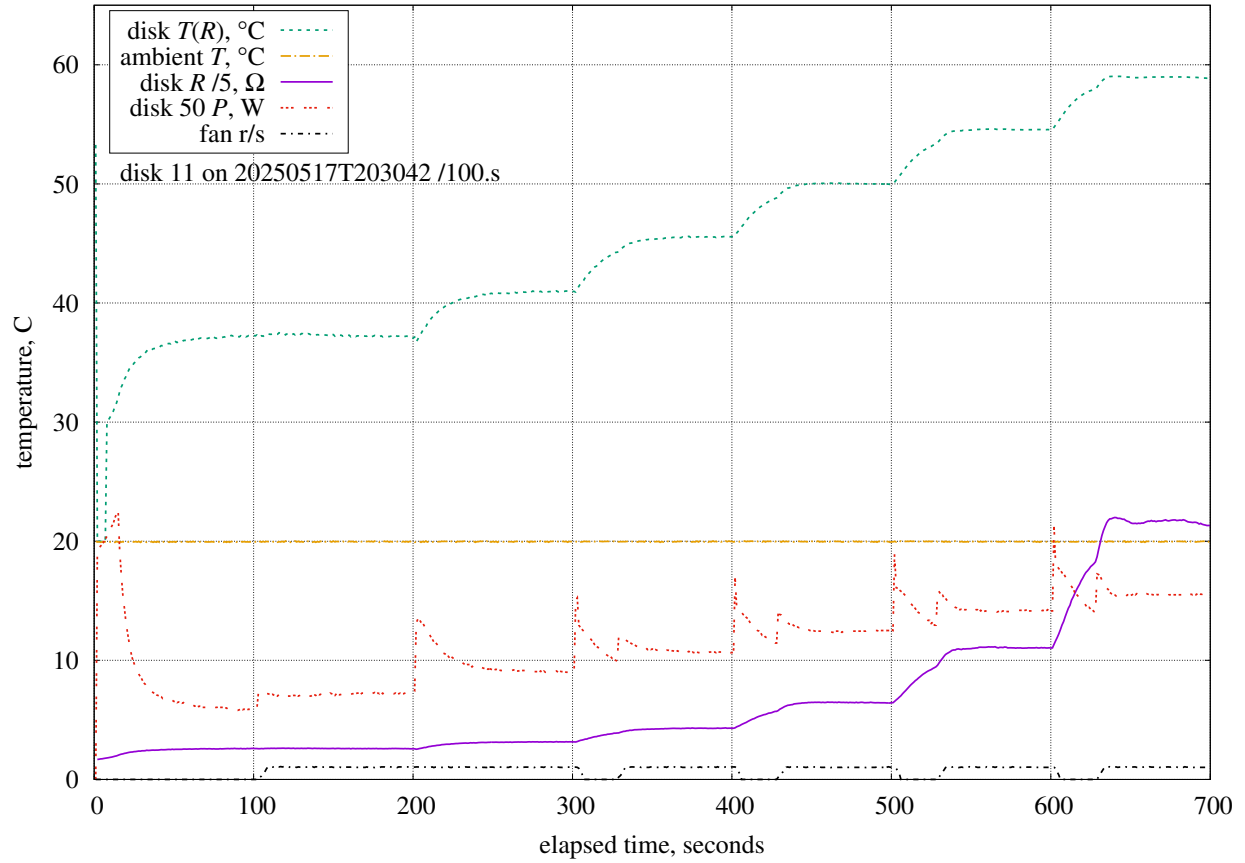




$\theta = 82.3^\circ$; $\psi = 82.3^\circ$; $V = 0.000$ m/s (0 r/min)

Estimated measurement uncertainties of natural convection at $\theta = 82.4$.

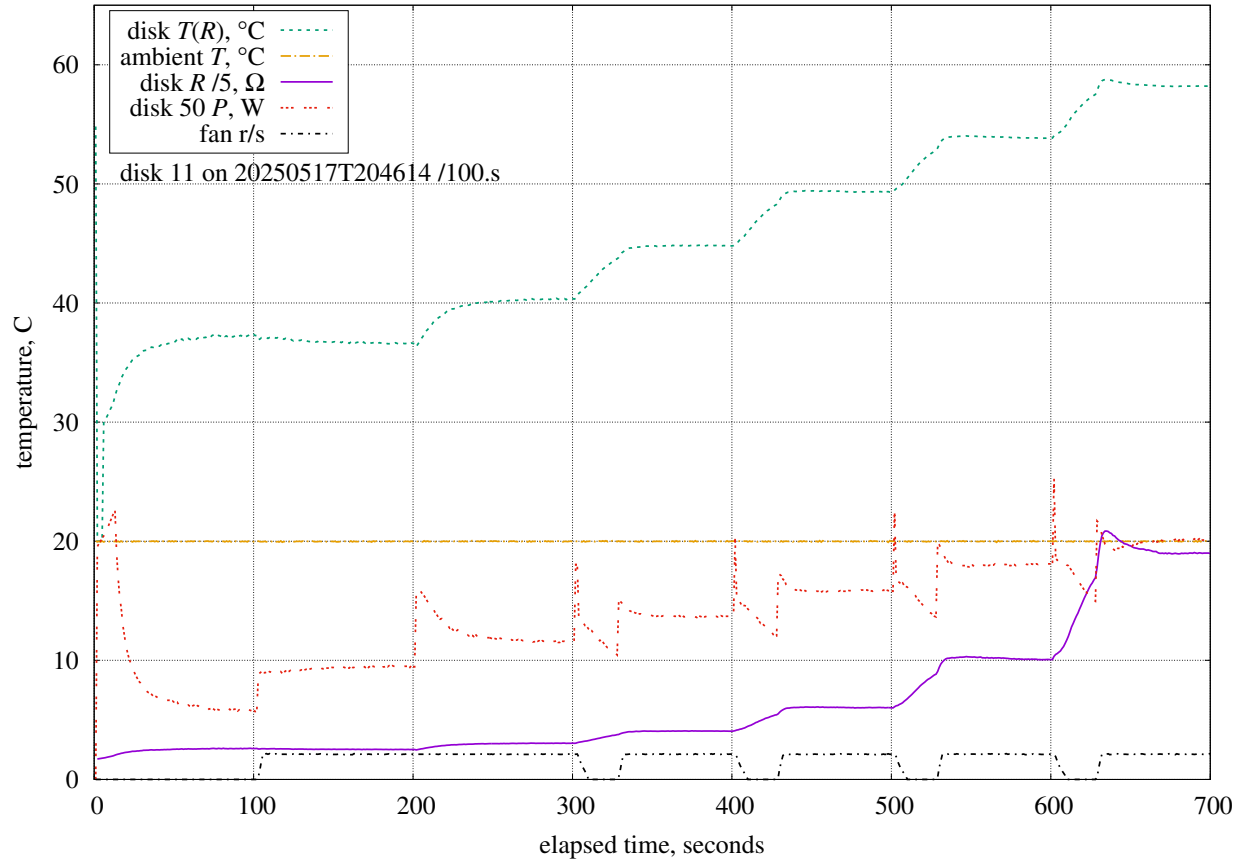
Symbol	Nominal	Sensitivity	Bias	Uncertainty	Component
ΔT	25.0.K	+4.33%/K	0.10.K	0.43%	LM35C differential
P	98.9.kPa	+0.0002%/Pa	1.5.kPa	0.23%	MPXH6115A6U air pressure
C_S	0.420	-7.85%	0.050	0.39%	rim shape factor
D_o	2.81.mm	+2781%/m	500.um	1.39%	tube outer diameter
D_i	1.11.mm	+6032%/m	200.um	1.21%	tube inner diameter
D_g	166.um	-285%/m	750.um	0.21%	tube air gap
L_{wire}	38.0.mm	+1187%/m	500.um	0.59%	wire length
k_{ABS}	179. $\frac{\text{mW}}{\text{K}\cdot\text{m}}$	+0.141%/ $\frac{\text{mW}}{\text{K}\cdot\text{m}}$	9.0. $\frac{\text{mW}}{\text{K}\cdot\text{m}}$	1.26%	ABS thermal conductivity
d	12.0.mm	+3856%/m	100.um	0.39%	disk diameter
				2.44%	combined bias uncertainty



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

Estimated measurement uncertainties at $Re = 135$.

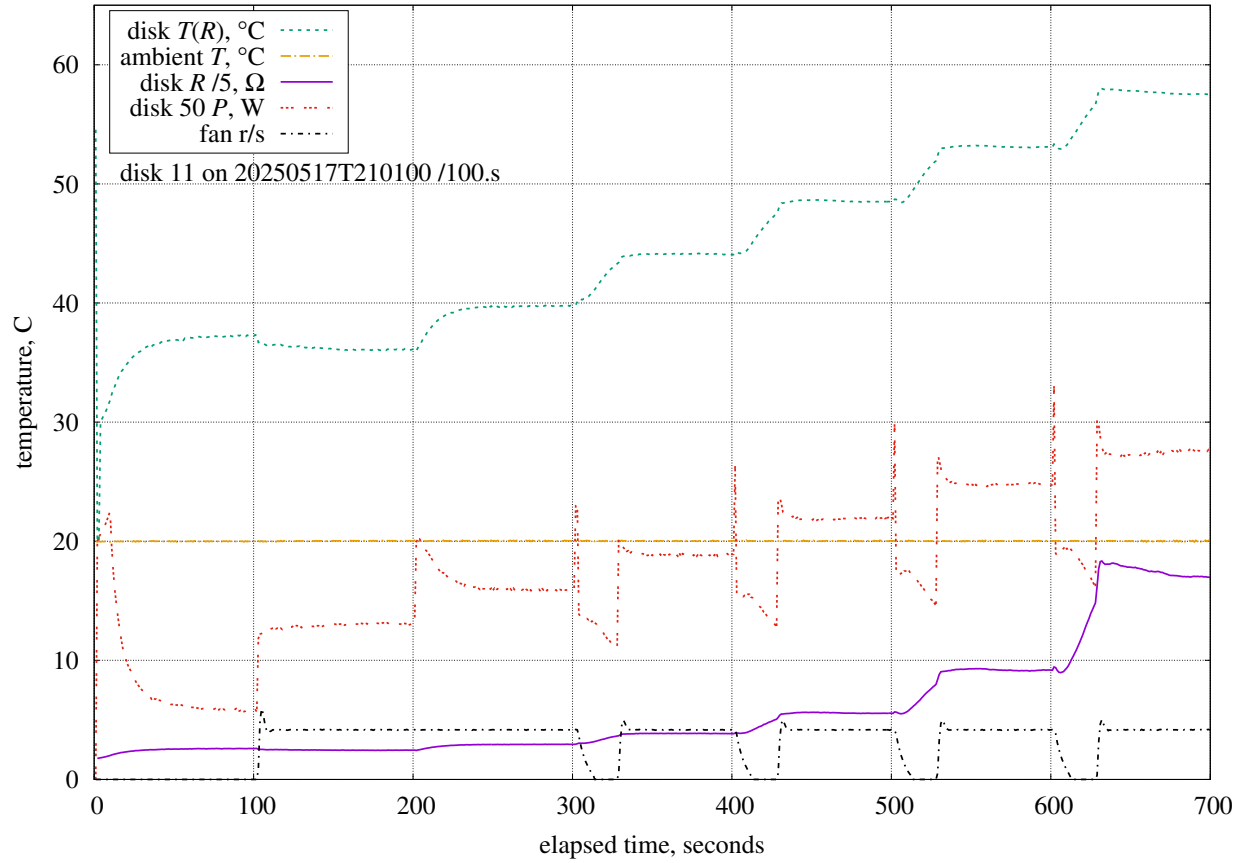
Symbol	Nominal	Sensitivity	Bias	Uncertainty	Component
ΔT	25.0.K	+4.15%/K	0.10.K	0.42%	LM35C differential
P	98.6.kPa	+0.0002%/Pa	1.5.kPa	0.36%	MPXH6115A6U air pressure
η	0.340	+51.2%	0.007	0.35%	anemometer calibration
C_S	0.420	-4.96%	0.050	0.25%	rim shape factor
D_i	1.11.mm	+8381%/m	200.um	1.68%	tube inner diameter
D_g	166.um	-381%/m	750.um	0.29%	tube air gap
L_{wire}	38.0.mm	+1589%/m	500.um	0.79%	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	+3678%/m	100.um	0.37%	disk diameter
				2.51%	combined bias uncertainty
Symbol	Nominal	Sensitivity	Variability	Uncertainty	Component
ω	61.9.r/min	+0.281%/(r/min)	1.0.r/min	0.28%	fan rotation rate
				2.57%	RSS combined uncertainty



$\theta = 82.3^\circ$; $\psi = 82.3^\circ$; $V = 0.382$ m/s (127 r/min)

Estimated measurement uncertainties at $Re = 276$.

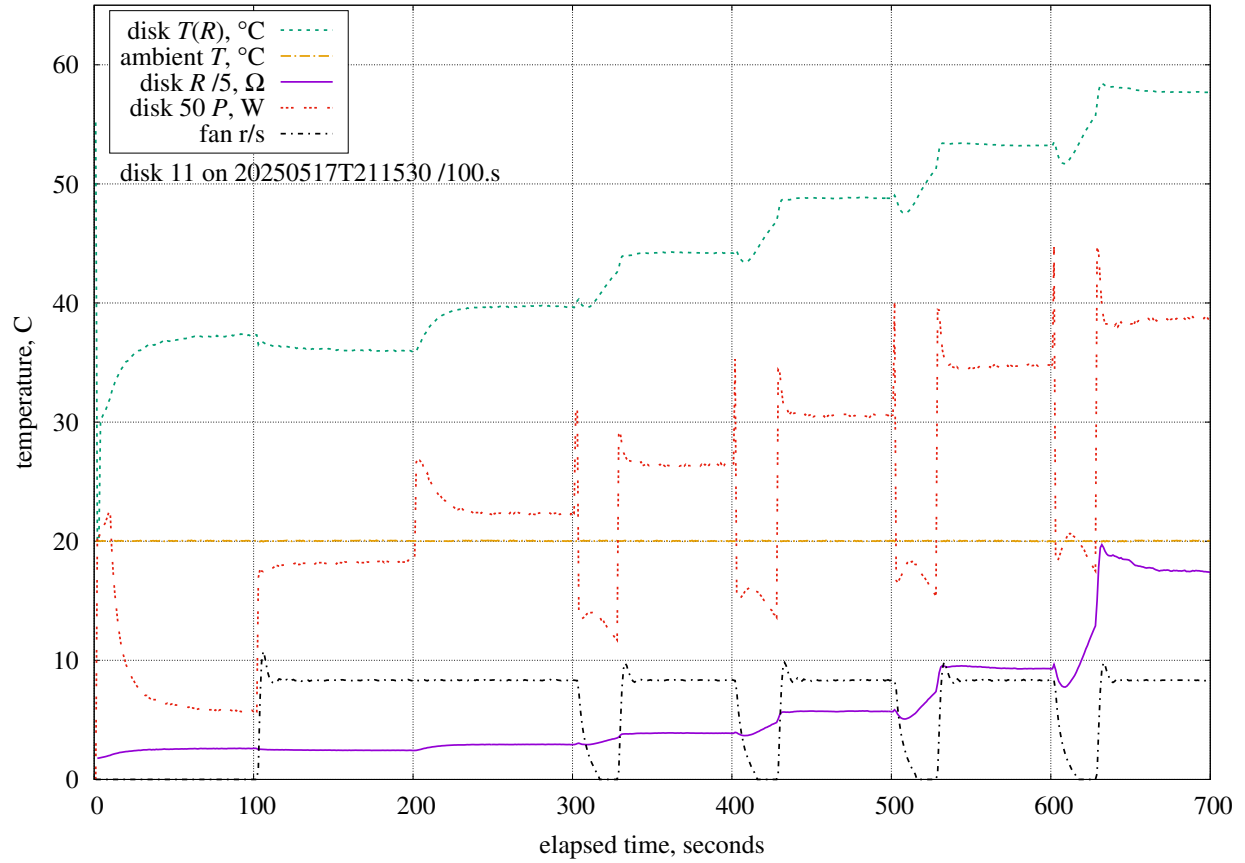
Symbol	Nominal	Sensitivity	Bias	Uncertainty	Component
ΔT	25.0.K	+4.06%/K	0.10.K	0.41%	LM35C differential
P	98.6.kPa	+0.0005%/Pa	1.5.kPa	0.76%	MPXH6115A6U air pressure
η	0.340	+143%	0.007	0.97%	anemometer calibration
Re_0	600	-0.0062%	60	0.37%	integration lower-bound
D_o	2.81.mm	+5126%/m	500.um	2.56%	tube outer diameter
D_i	1.11.mm	+11647%/m	200.um	2.33%	tube inner diameter
D_g	166.um	-487%/m	750.um	0.37%	tube air gap
L_{wire}	38.0.mm	+2031%/m	500.um	1.02%	wire length
k_{ABS}	179. $\frac{\text{mW}}{\text{K}\cdot\text{m}}$	+0.181%/ $\frac{\text{mW}}{\text{K}\cdot\text{m}}$	9.0. $\frac{\text{mW}}{\text{K}\cdot\text{m}}$	1.62%	ABS thermal conductivity
d	12.0.mm	+3959%/m	100.um	0.40%	disk diameter
				4.22%	combined bias uncertainty
Symbol	Nominal	Sensitivity	Variability	Uncertainty	Component
ω	127.r/min	+0.382%/(r/min)	1.1.r/min	0.42%	fan rotation rate
				4.30%	RSS combined uncertainty



$\theta = 82.3^\circ$; $\psi = 82.3^\circ$; $V = 0.748$ m/s (250 r/min)

Estimated measurement uncertainties at $Re = 540$.

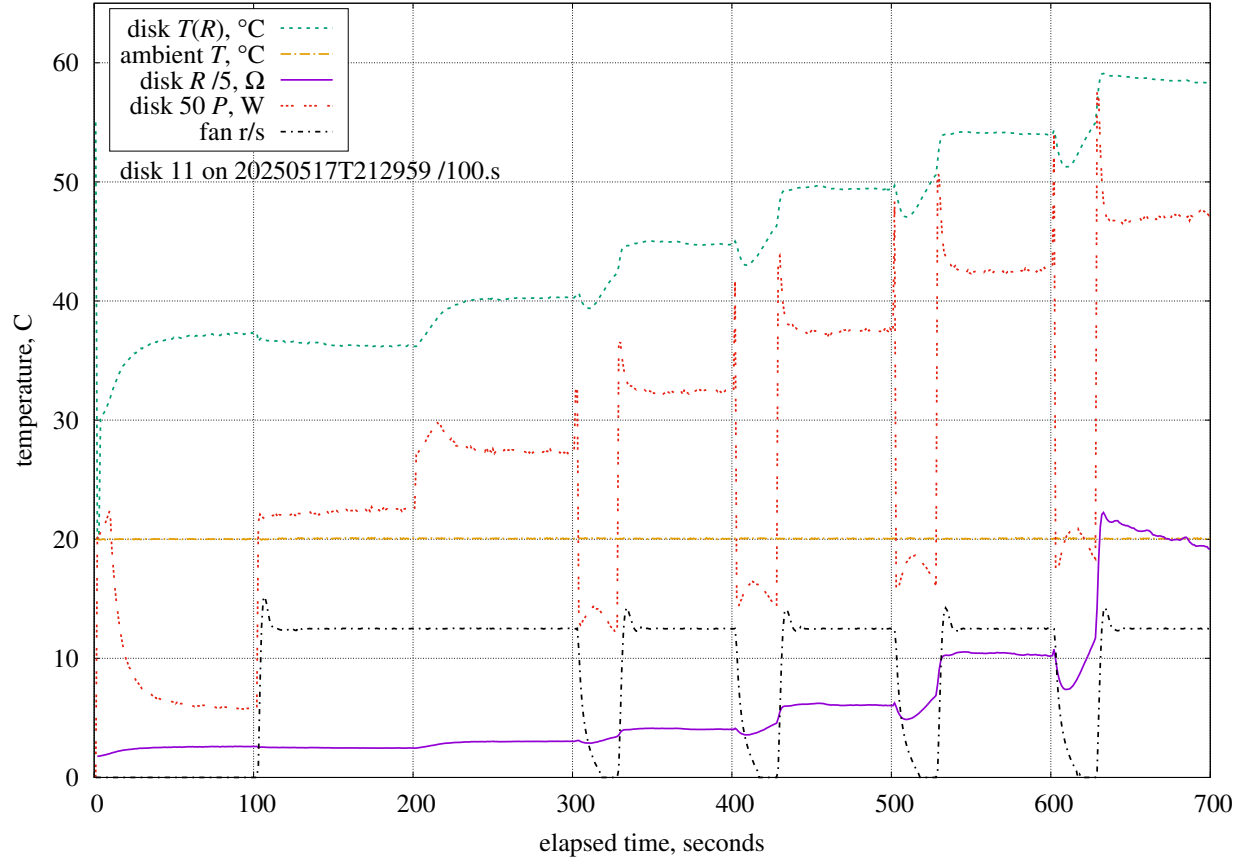
Symbol	Nominal	Sensitivity	Bias	Uncertainty	Component
ΔT	25.0.K	+4.00%/K	0.10.K	0.40%	LM35C differential
P	98.6.kPa	+0.0004%/Pa	1.5.kPa	0.57%	MPXH6115A6U air pressure
η	0.340	+113%	0.007	0.77%	anemometer calibration
Re_0	600	-0.0092%	60	0.55%	integration lower-bound
D_o	2.81.mm	-5118%/m	500.um	2.56%	tube outer diameter
D_i	1.11.mm	+14943%/m	200.um	2.99%	tube inner diameter
D_g	166.um	-588%/m	750.um	0.44%	tube air gap
L_{wire}	38.0.mm	+2449%/m	500.um	1.22%	wire length
k_{ABS}	179. $\frac{\text{mW}}{\text{K}\cdot\text{m}}$	+0.191%/ $\frac{\text{mW}}{\text{K}\cdot\text{m}}$	9.0. $\frac{\text{mW}}{\text{K}\cdot\text{m}}$	1.71%	ABS thermal conductivity
d	12.0.mm	+5130%/m	100.um	0.51%	disk diameter
				4.67%	combined bias uncertainty
Symbol	Nominal	Sensitivity	Variability	Uncertainty	Component
ω	250.r/min	+0.154%/(r/min)	1.2.r/min	0.18%	fan rotation rate
				4.68%	RSS combined uncertainty



$\theta = 82.3^\circ$; $\psi = 82.3^\circ$; $V = 1.466 \text{ m/s}$ (500 r/min)

Estimated measurement uncertainties at $Re = 1058$.

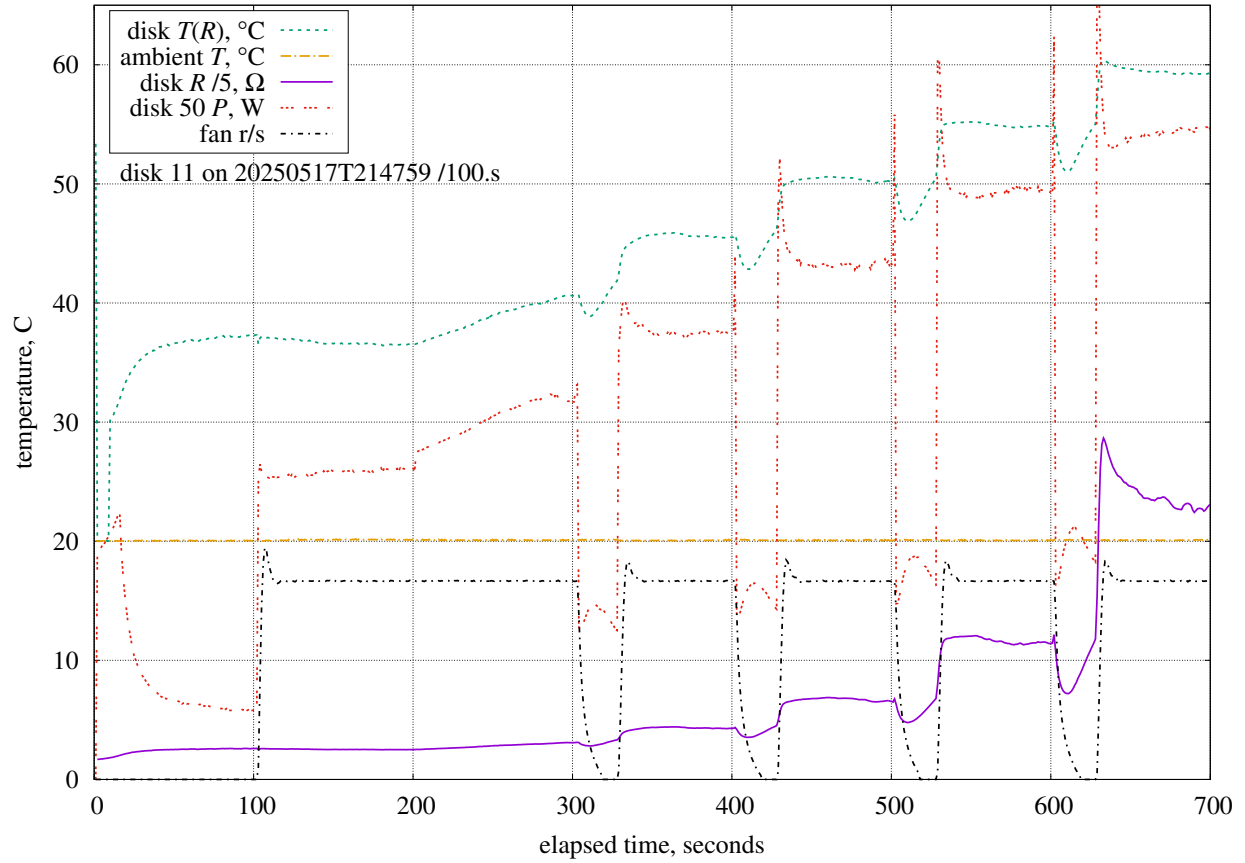
Symbol	Nominal	Sensitivity	Bias	Uncertainty	Component
ΔT	25.0.K	+3.98%/K	0.10.K	0.40%	LM35C differential
P	98.6.kPa	+0.0003%/Pa	1.5.kPa	0.48%	MPXH6115A6U air pressure
η	0.340	+96.5%	0.007	0.66%	anemometer calibration
Re_0	600	-0.010%	60	0.61%	integration lower-bound
D_o	2.81.mm	-9104%/m	500.um	4.55%	tube outer diameter
D_i	1.11.mm	+13063%/m	200.um	2.61%	tube inner diameter
D_g	166.um	-562%/m	750.um	0.42%	tube air gap
L_{wire}	38.0.mm	+2342%/m	500.um	1.17%	wire length
k_{ABS}	179. $\frac{\text{mW}}{\text{K}\cdot\text{m}}$	+0.164%/ $\frac{\text{mW}}{\text{K}\cdot\text{m}}$	9.0. $\frac{\text{mW}}{\text{K}\cdot\text{m}}$	1.47%	ABS thermal conductivity
d	12.0.mm	+6590%/m	100.um	0.66%	disk diameter
				5.74%	combined bias uncertainty
Symbol	Nominal	Sensitivity	Variability	Uncertainty	Component
ω	500.r/min	+0.066%/(r/min)	1.2.r/min	0.08%	fan rotation rate
				5.74%	RSS combined uncertainty



$\theta = 82.3^\circ$; $\psi = 82.3^\circ$; $V = 2.130 \text{ m/s}$ (750 r/min)

Estimated measurement uncertainties at $Re = 1536$.

Symbol	Nominal	Sensitivity	Bias	Uncertainty	Component
ΔT	25.0.K	+3.97%/K	0.10.K	0.40%	LM35C differential
P	98.6.kPa	+0.0004%/Pa	1.5.kPa	0.66%	MPXH6115A6U air pressure
η	0.340	+124%	0.007	0.84%	anemometer calibration
Re_0	600	-0.010%	60	0.61%	integration lower-bound
C_B	0.541	+2.11%	0.100	0.21%	bypass coefficient
D_o	2.81.mm	-5536%/m	500.um	2.77%	tube outer diameter
D_i	1.11.mm	+11700%/m	200.um	2.34%	tube inner diameter
D_g	166.um	-541%/m	750.um	0.41%	tube air gap
L_{wire}	38.0.mm	+2254%/m	500.um	1.13%	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	+7372%/m	100.um	0.74%	disk diameter
				4.31%	combined bias uncertainty
Symbol	Nominal	Sensitivity	Variability	Uncertainty	Component
ω	750.r/min	+0.056%/(r/min)	0.90.r/min	0.05%	fan rotation rate
				4.31%	RSS combined uncertainty



$\theta = 82.3^\circ$; $\psi = 82.3^\circ$; $V = 2.725$ m/s (1000 r/min)

Estimated measurement uncertainties at $Re = 1964$.

Symbol	Nominal	Sensitivity	Bias	Uncertainty	Component
ΔT	25.0.K	+3.97%/K	0.10.K	0.40%	LM35C differential
P	98.5.kPa	+0.0005%/Pa	1.5.kPa	0.70%	MPXH6115A6U air pressure
η	0.340	+120%	0.007	0.82%	anemometer calibration
Re_0	600	-0.0098%	60	0.59%	integration lower-bound
C_B	0.541	+2.48%	0.100	0.25%	bypass coefficient
D_o	2.81.mm	-5053%/m	500.um	2.53%	tube outer diameter
D_i	1.11.mm	+11571%/m	200.um	2.31%	tube inner diameter
D_g	166.um	-540%/m	750.um	0.40%	tube air gap
L_{wire}	38.0.mm	+2249%/m	500.um	1.12%	wire length
k_{ABS}	179. $\frac{\text{mW}}{\text{K}\cdot\text{m}}$	+0.140%/ $\frac{\text{mW}}{\text{K}\cdot\text{m}}$	9.0. $\frac{\text{mW}}{\text{K}\cdot\text{m}}$	1.26%	ABS thermal conductivity
d	12.0.mm	+7771%/m	100.um	0.78%	disk diameter
				4.14%	combined bias uncertainty
Symbol	Nominal	Sensitivity	Variability	Uncertainty	Component
ω	1000.r/min	+0.041%/(r/min)	1.6.r/min	0.06%	fan rotation rate
				4.14%	RSS combined uncertainty