Lab1 Measurements

Always record the units in the cell below the quantity measured
Indicate adimensional quantities, by recording "-" in the cell reserved for units
At times, units are already filled in to make it clear what is desired in that column

Table 1. Open-loop bandwidth measurements in time domain

Measurements at low-frequency			Measurements at bandwidth frequency		
Peak-to-peak amplitude of output	Frequency	Frequency	Peak-to-peak amplitude of output	Frequency	Frequency
	Hz	rad/s		Hz	rad/s
3.1	3	18.85	2.1	68.44	430

Table 2. Closed-loop bandwidth measurements in time domain

Measurements at low-frequency			Measurements at bandwidth frequency		
Peak-to-peak amplitude of output	Frequency	Frequency	Peak-to-peak amplitude of output	Frequency	Frequency
	Hz	rad/s		Hz	rad/s
0.75	3	18.85	0.56	273.75	1720

Table 3. Summary of bandwidth results

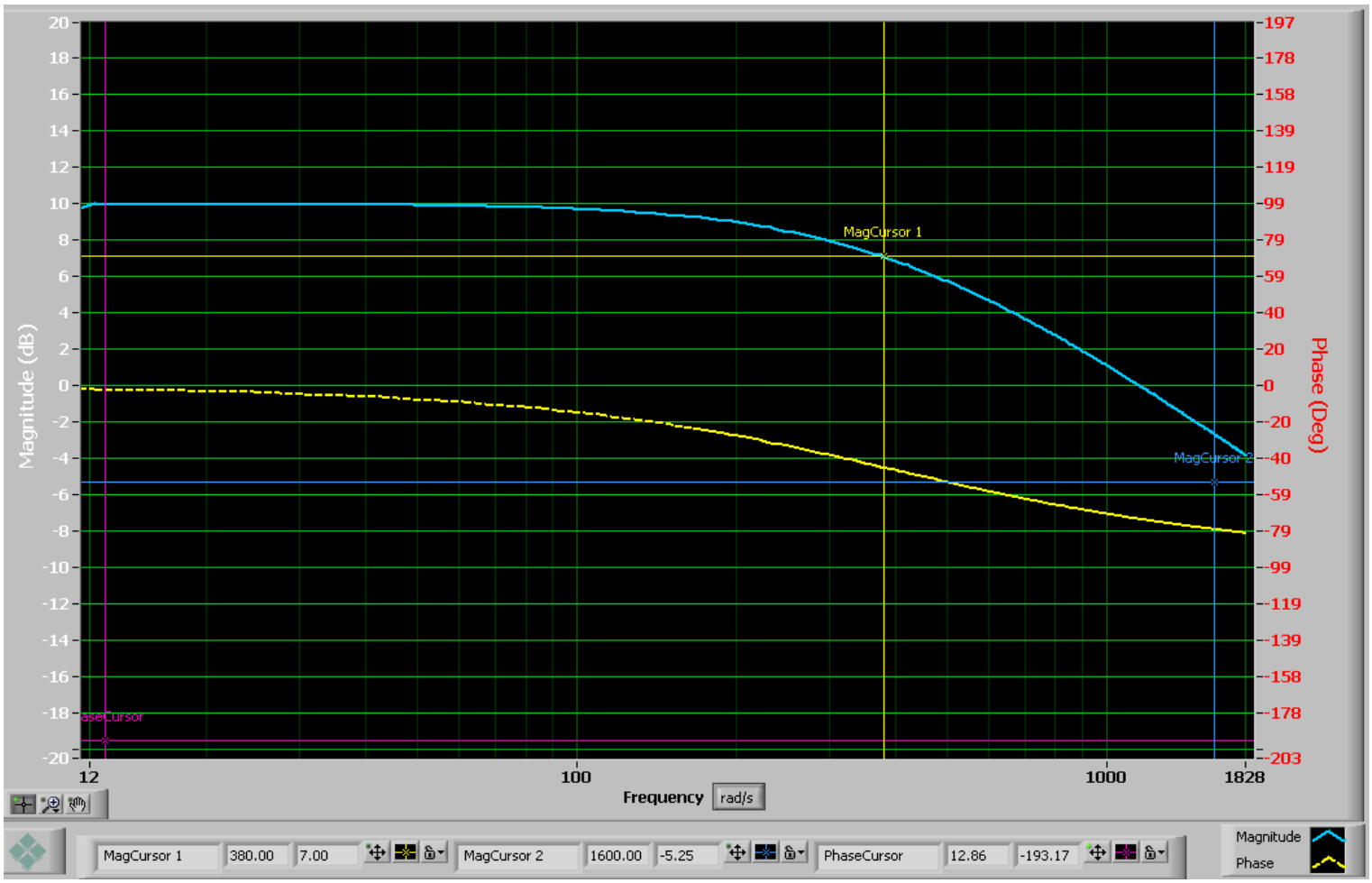
Configuration	Bandwidth in time domain	Bandwidth in freq domain	Bandwidth in Matlab	Bandwidth theoretical	Error Theor_TimeDom	Error Theor_FreqDom
	rad/s	rad/s	rad/s		%	%
Open-loop	430	380	410	360	4.65%	5.26%
Closed-loop	1720	1600	1600	1520	6.98%	5.00%

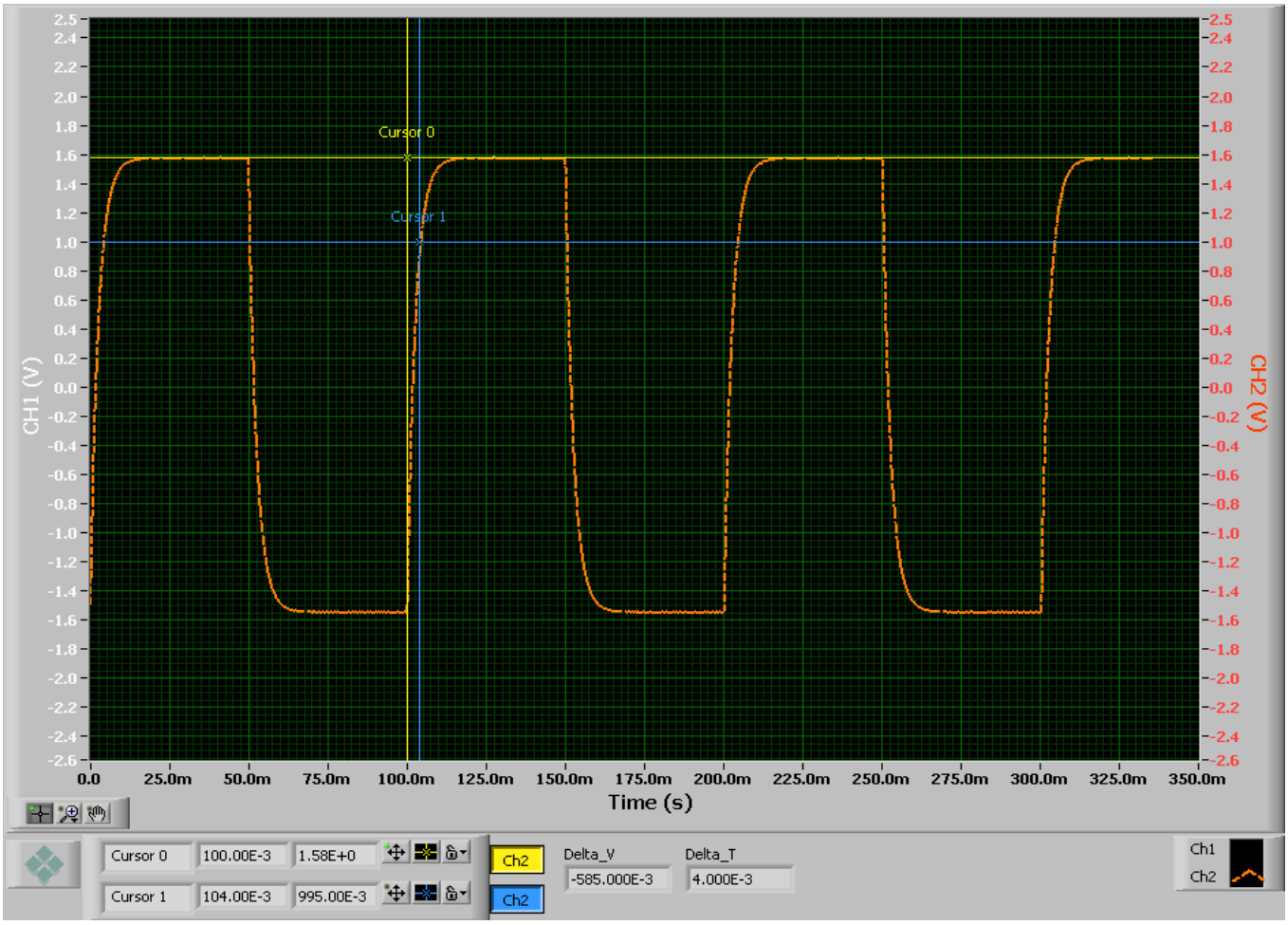
Table 4. Summary of time-constant results

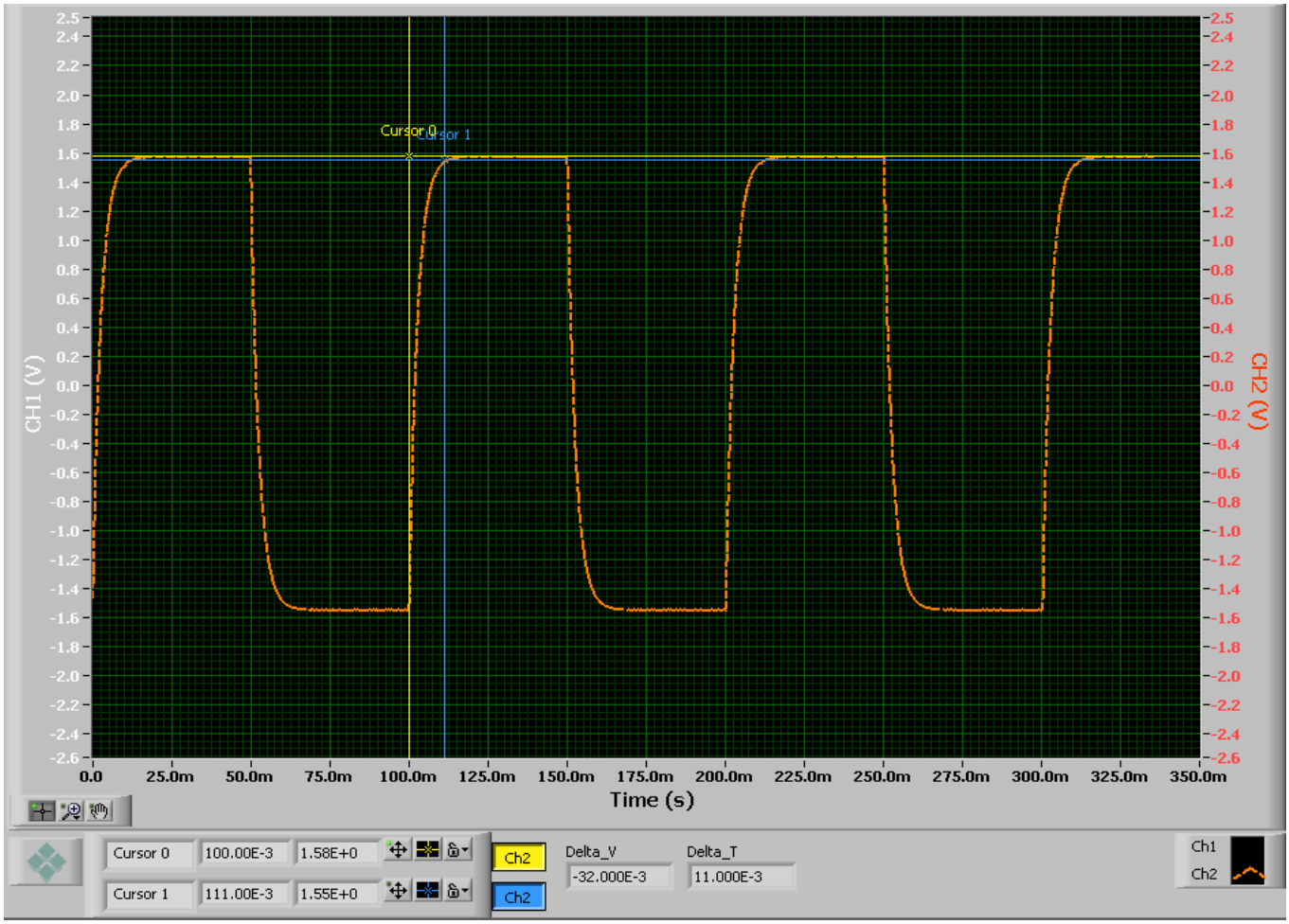
Configuration	Tau_Exp	Tau_Matlab	Tau_theor	Tau_Error Theor_Exp
	ms			%
Open-loop	4	4	4	0.00%
Closed-loop	11	10	10	9.09%

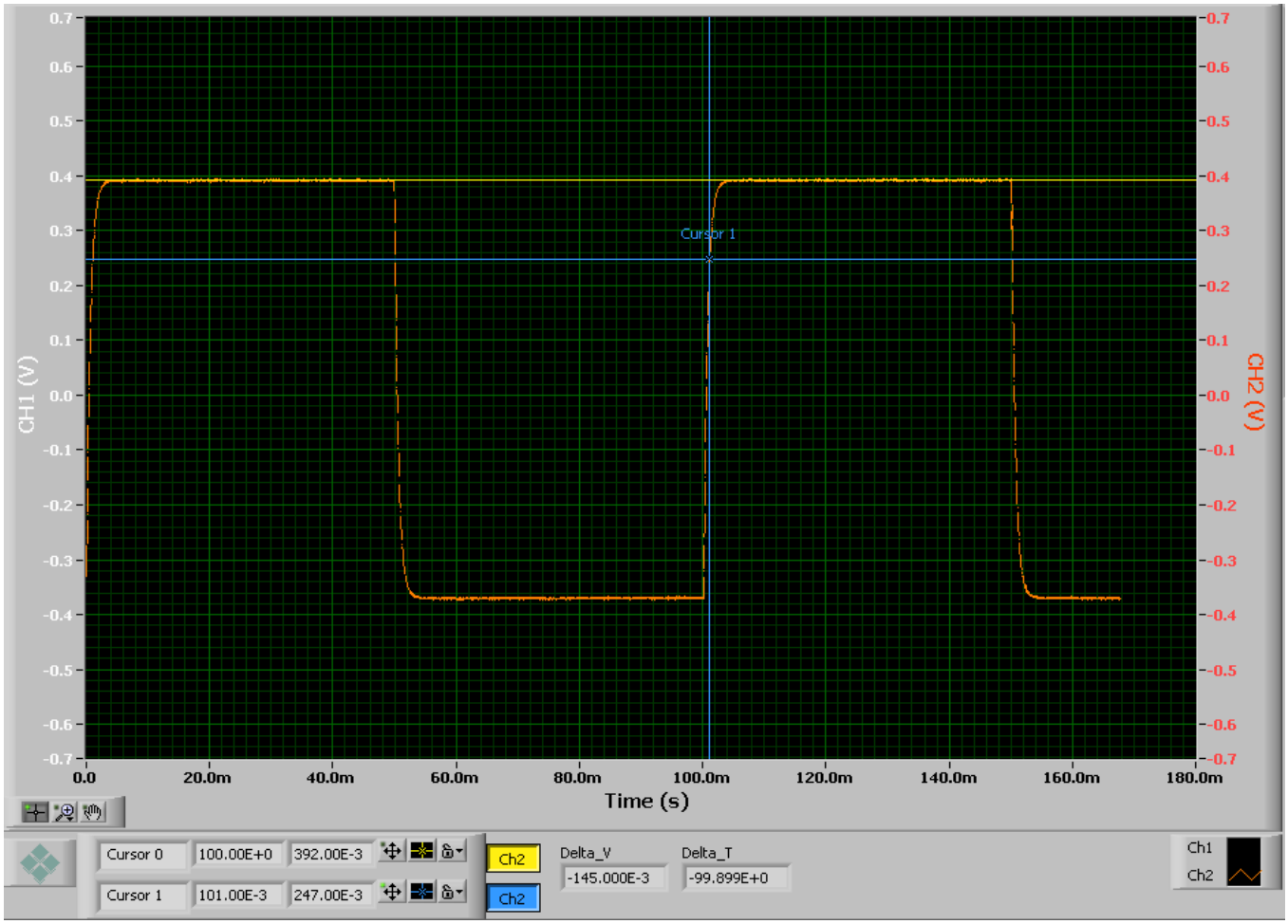
Table 5. Summary of 2% settling time results

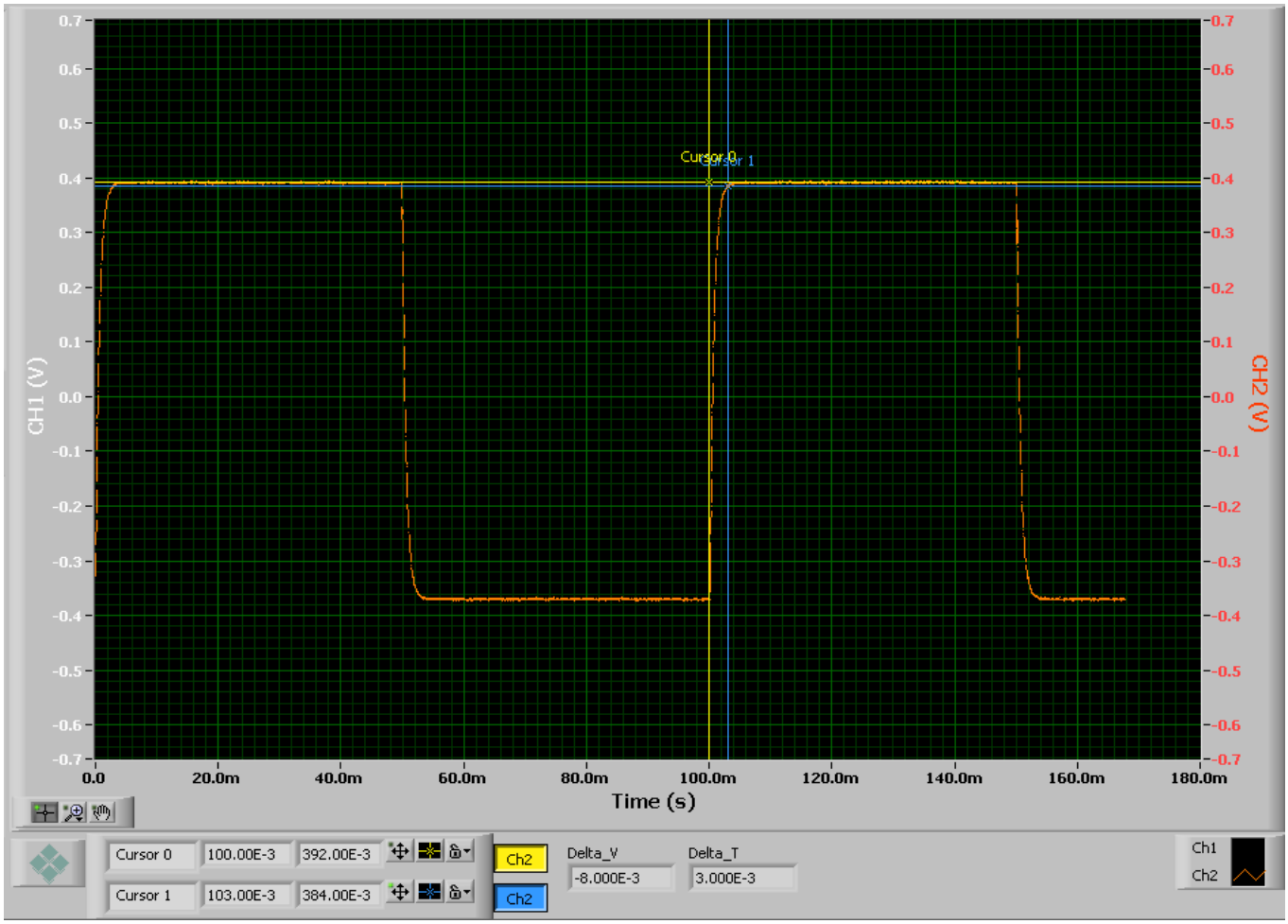
Configuration	Ts_Exp	Ts_Matlab	Ts_theor	Ts_Error Theor_Exp
				%
Open-loop	1	2	2	100.00%
Closed-loop	3	3	3	0.00%


Magnitude (dB)
Phase (Deg)
MagCursor 1
MagCursor 2
aseCursor
Frequency
rad/s
MagCursor 1
380.00
7.00
MagCursor 2
1600.00
-5.25
PhaseCursor
12.86
-193.17
Magnitude
Phase


Cursor 0
Cursor 1
CH1 (V)
CH2 (V)
Time (s)
0.0
25.0m
50.0m
75.0m
100.0m
125.0m
150.0m
175.0m
200.0m
225.0m
250.0m
275.0m
300.0m
325.0m
350.0m
Cursor 0
100.00E-3
1.58E+0
Cursor 1
104.00E-3
995.00E-3
Ch2
Ch2
Delta_V
-585.000E-3
Delta_T
4.000E-3
Ch1
Ch2


Cursor 0
Cursor 1
CH1 (V)
CH2 (V)
Time (s)
0.0
25.0m
50.0m
75.0m
100.0m
125.0m
150.0m
175.0m
200.0m
225.0m
250.0m
275.0m
300.0m
325.0m
350.0m
Cursor 0
100.00E-3
1.58E+0
Cursor 1
111.00E-3
1.55E+0
Ch2
Ch2
Delta_V
-32.000E-3
Delta_T
11.000E-3
Ch1
Ch2


Cursor 1
CH1 (V)
CH2 (V)
Time (s)
0.0
20.0m
40.0m
60.0m
80.0m
100.0m
120.0m
140.0m
160.0m
180.0m
Cursor 0
100.00E+0
392.00E-3
Cursor 1
101.00E-3
247.00E-3
Ch2
Ch2
Delta_V
-145.000E-3
Delta_T
-99.899E+0
Ch1
Ch2


Cursor 0
Cursor 1
CH1 (V)
CH2 (V)
Time (s)
0.0
20.0m
40.0m
60.0m
80.0m
100.0m
120.0m
140.0m
160.0m
180.0m
Cursor 0
100.00E-3
392.00E-3
Cursor 1
103.00E-3
384.00E-3
Ch2
Ch2
Delta_V
-8.000E-3
Delta_T
3.000E-3
Ch1
Ch2