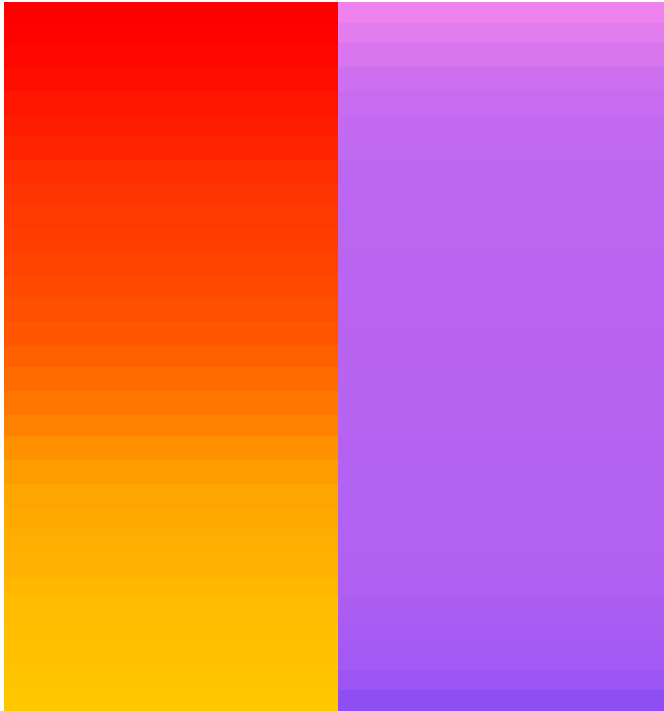


Chirped Mirror for Ultrashort Pulses

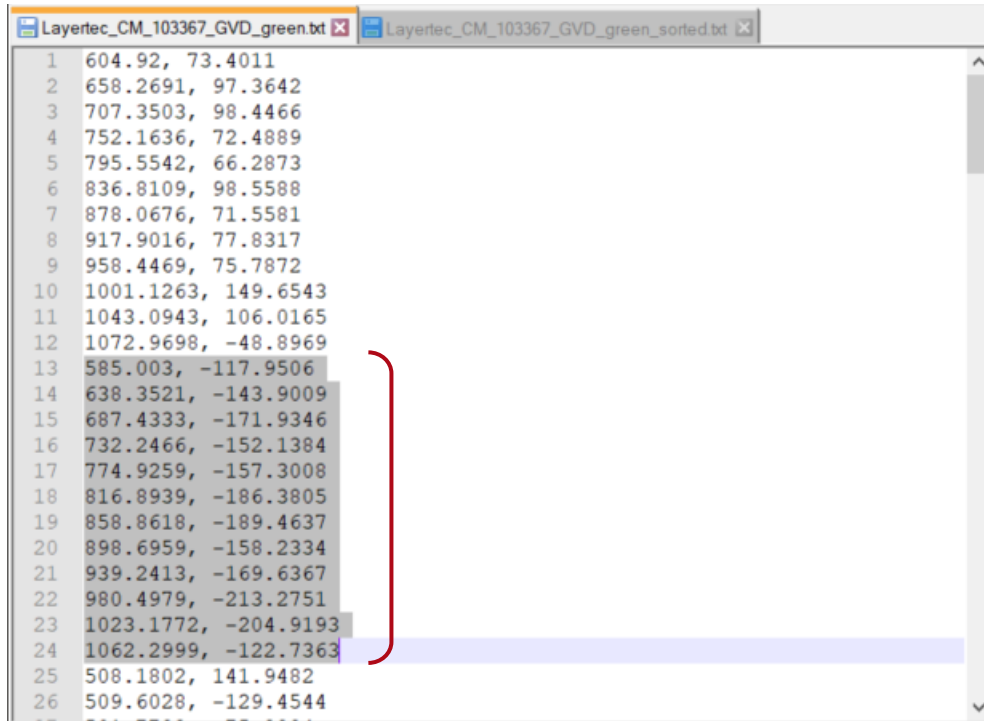
Abstract



In this demo we will show how to import measured chirped mirror data.

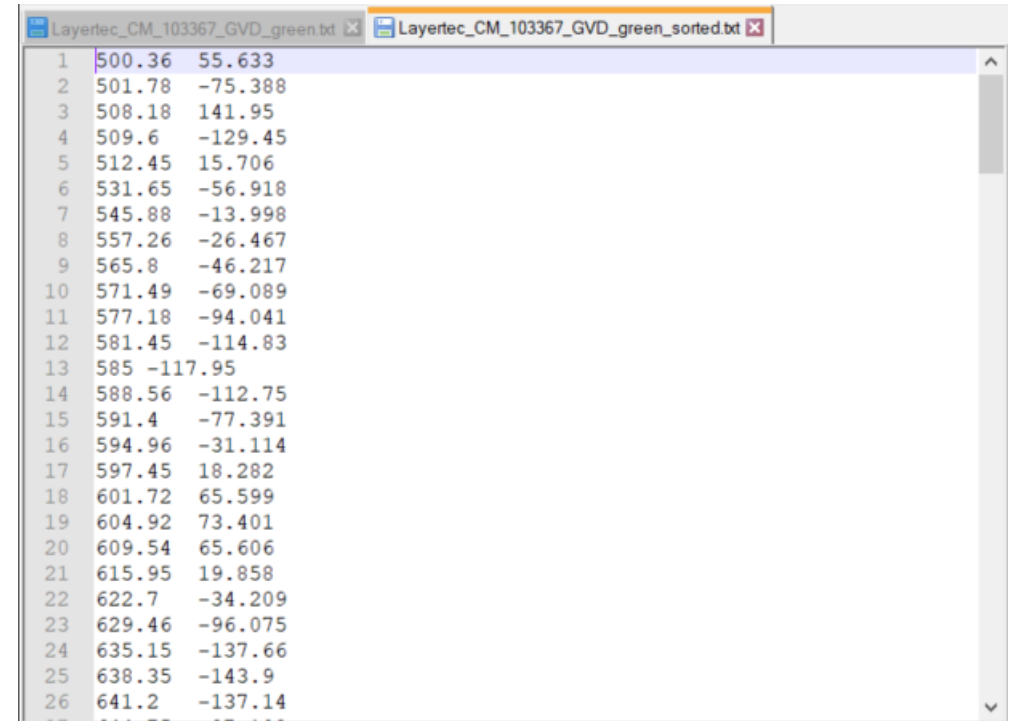
Prepare Data

original data for CM 103367



```
Layertec_CM_103367_GVD_green.bt x Layertec_CM_103367_GVD_green_sorted.bt x
1 604.92, 73.4011
2 658.2691, 97.3642
3 707.3503, 98.4466
4 752.1636, 72.4889
5 795.5542, 66.2873
6 836.8109, 98.5588
7 878.0676, 71.5581
8 917.9016, 77.8317
9 958.4469, 75.7872
10 1001.1263, 149.6543
11 1043.0943, 106.0165
12 1072.9698, -48.8969
13 585.003, -117.9506
14 638.3521, -143.9009
15 687.4333, -171.9346
16 732.2466, -152.1384
17 774.9259, -157.3008
18 816.8939, -186.3805
19 858.8618, -189.4637
20 898.6959, -158.2334
21 939.2413, -169.6367
22 980.4979, -213.2751
23 1023.1772, -204.9193
24 1062.2999, -122.7363
25 508.1802, 141.9482
26 509.6028, -129.4544
```

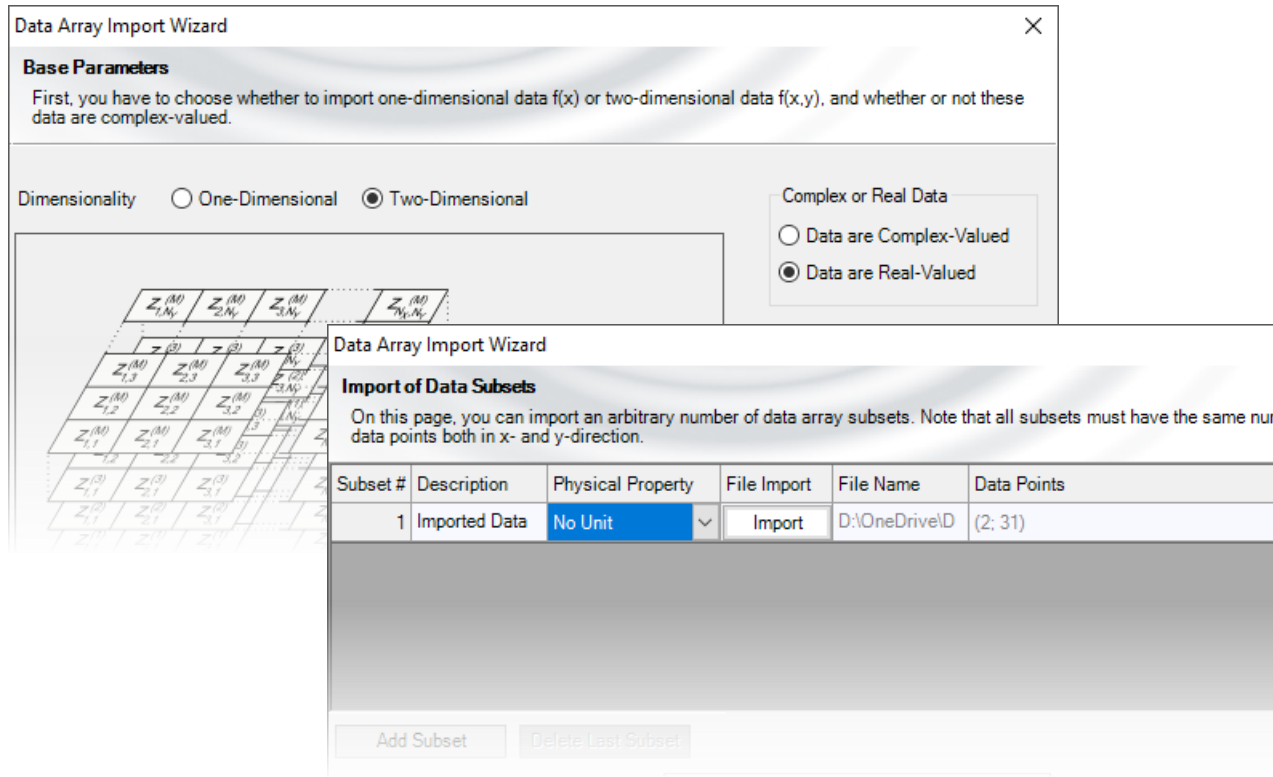
sorted data according to wavelength



```
Layertec_CM_103367_GVD_green.bt x Layertec_CM_103367_GVD_green_sorted.bt x
1 500.36 55.633
2 501.78 -75.388
3 508.18 141.95
4 509.6 -129.45
5 512.45 15.706
6 531.65 -56.918
7 545.88 -13.998
8 557.26 -26.467
9 565.8 -46.217
10 571.49 -69.089
11 577.18 -94.041
12 581.45 -114.83
13 585 -117.95
14 588.56 -112.75
15 591.4 -77.391
16 594.96 -31.114
17 597.45 18.282
18 601.72 65.599
19 604.92 73.401
20 609.54 65.606
21 615.95 19.858
22 622.7 -34.209
23 629.46 -96.075
24 635.15 -137.66
25 638.35 -143.9
26 641.2 -137.14
```

It seems that the original GDDs data are not always sorted according to wavelength. That would lead to certain difficulty for VirtualLab interpretation. Some preparation is then needed.

Import of Measured Chirped Mirror Data



Data Array Import Wizard

Base Parameters
First, you have to choose whether to import one-dimensional data $f(x)$ or two-dimensional data $f(x,y)$, and whether or not these data are complex-valued.

Dimensionality One-Dimensional Two-Dimensional

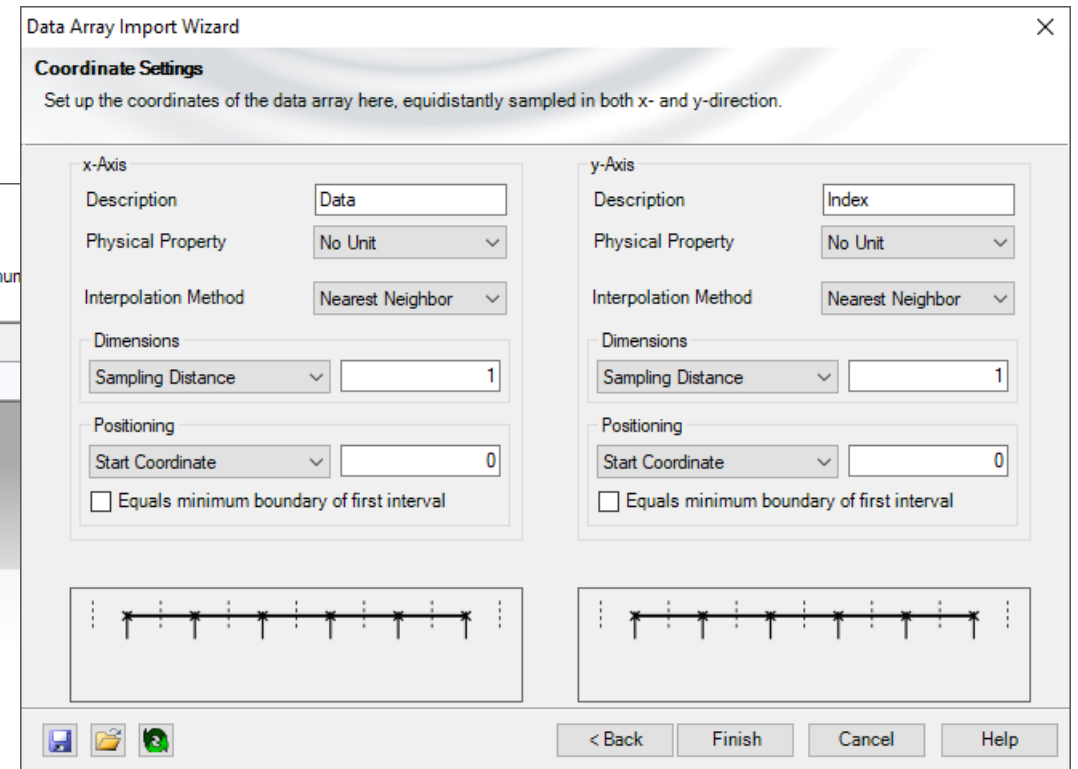
Complex or Real Data
 Data are Complex-Valued
 Data are Real-Valued

Import of Data Subsets
On this page, you can import an arbitrary number of data array subsets. Note that all subsets must have the same number of data points both in x- and y-direction.

Subset #	Description	Physical Property	File Import	File Name	Data Points
1	Imported Data	No Unit	Import	D:\OneDrive\ID	(2; 31)

Buttons: Add Subset, Delete Last Subset

First import the GDDs data as a 2D data array



Data Array Import Wizard

Coordinate Settings
Set up the coordinates of the data array here, equidistantly sampled in both x- and y-direction.

x-Axis

Description: Data
Physical Property: No Unit
Interpolation Method: Nearest Neighbor

Dimensions
Sampling Distance: 1

Positioning
Start Coordinate: 0
 Equals minimum boundary of first interval

y-Axis

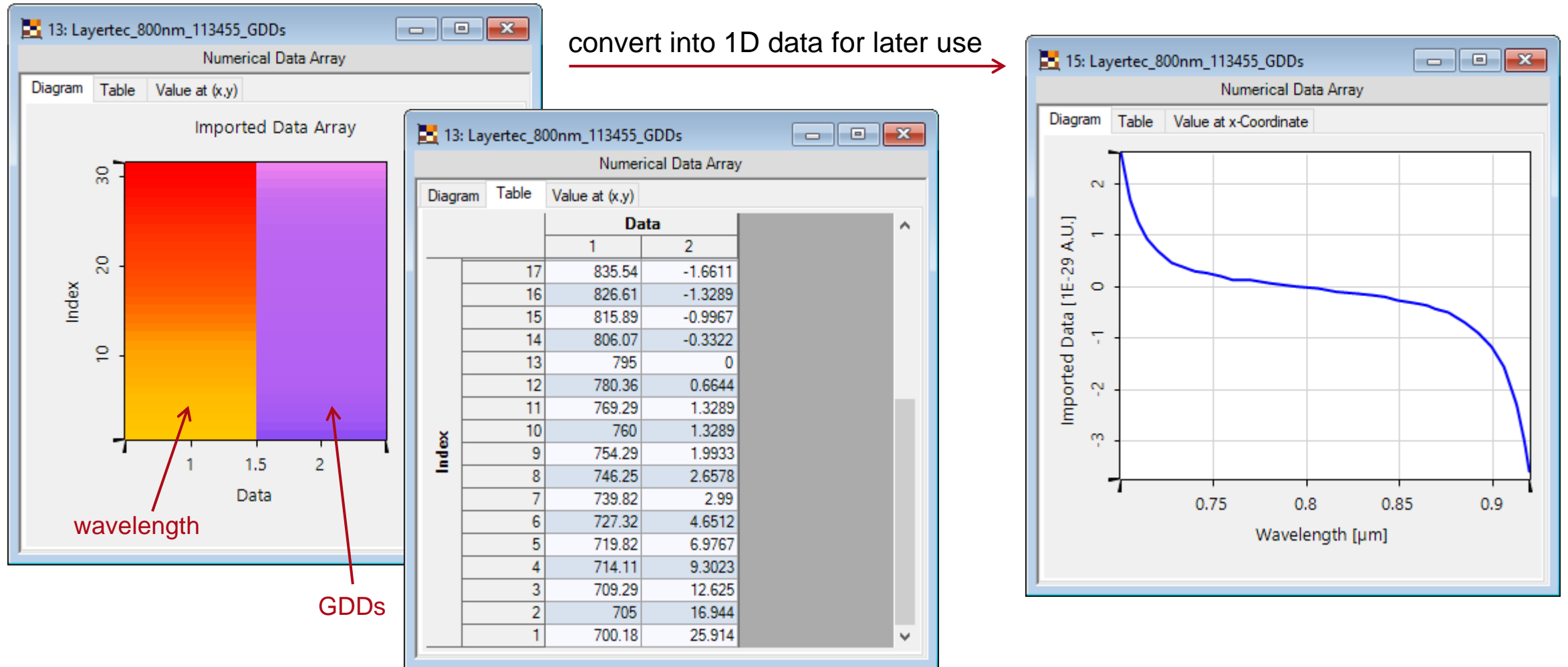
Description: Index
Physical Property: No Unit
Interpolation Method: Nearest Neighbor

Dimensions
Sampling Distance: 1

Positioning
Start Coordinate: 0
 Equals minimum boundary of first interval

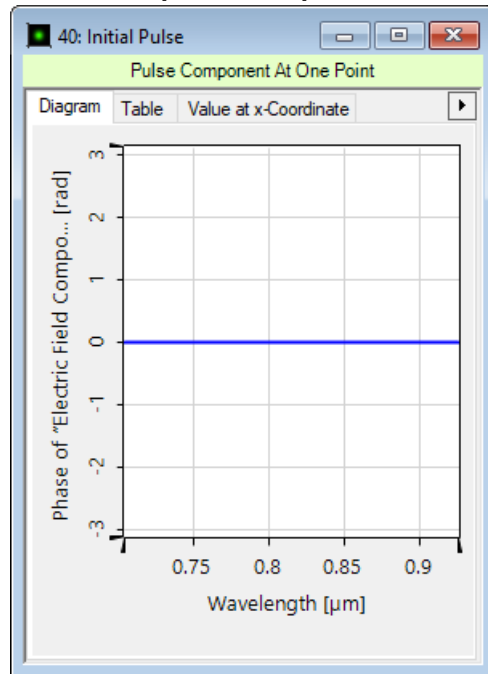
Buttons: < Back, Finish, Cancel, Help

Further Processing of Imported Data

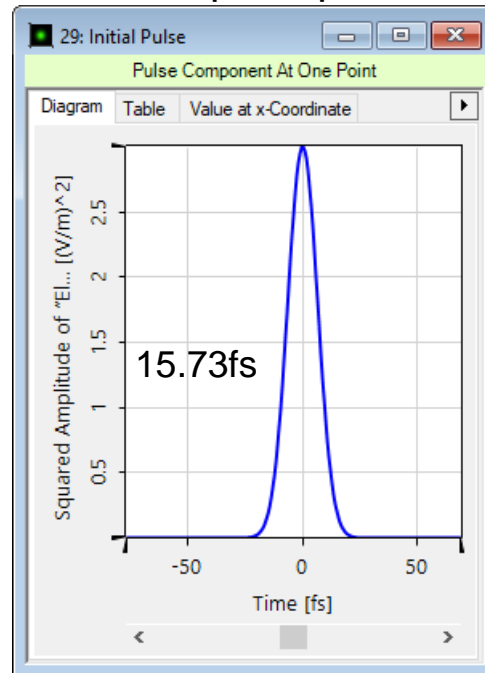


Example: Layertec 113455

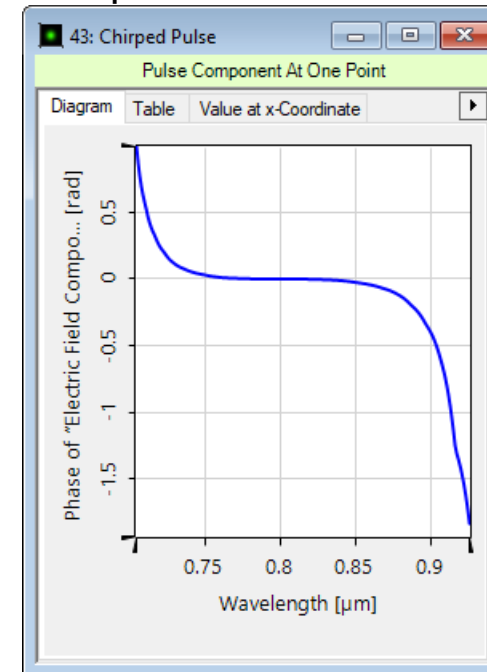
initial spectral phase



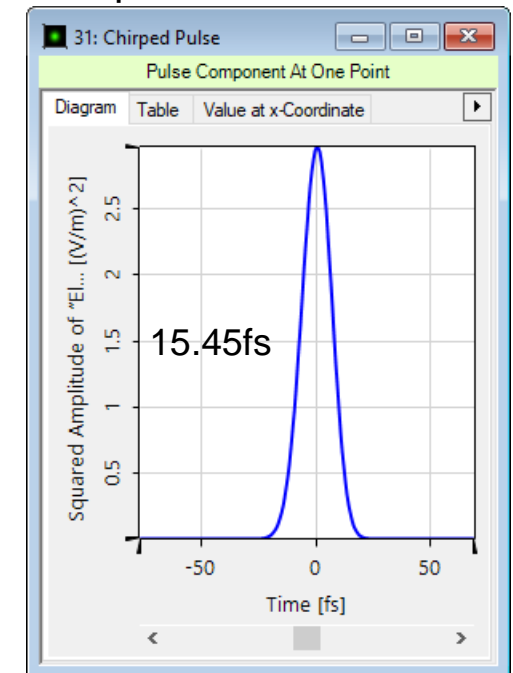
initial temporal pulse



spectral phase after chirped mirror

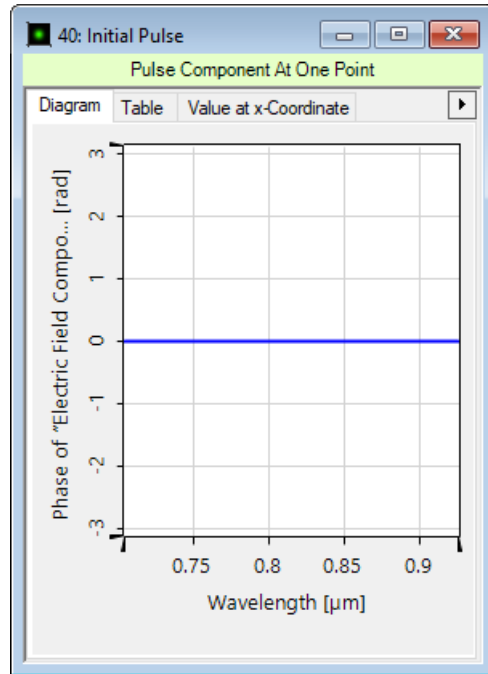


temporal pulse after chirped mirror

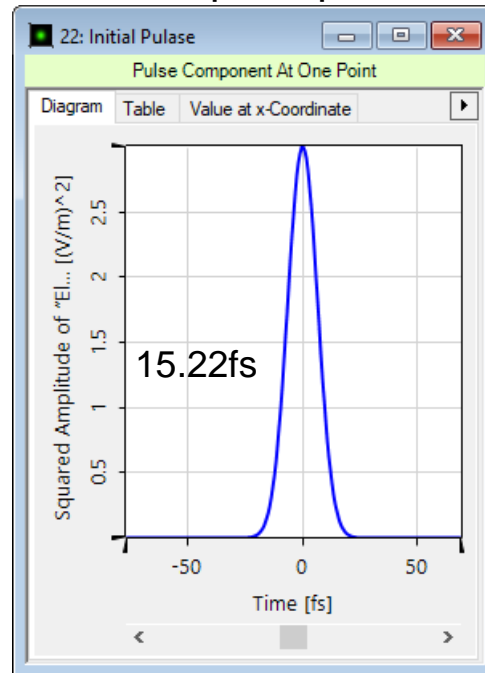


Example: Layertec 103367

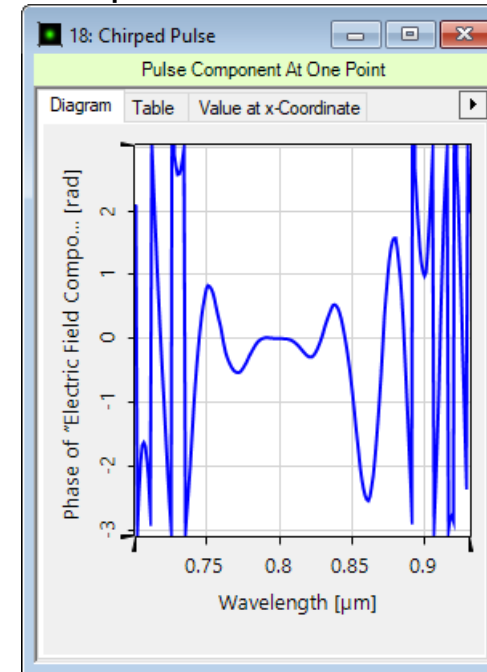
initial spectral phase



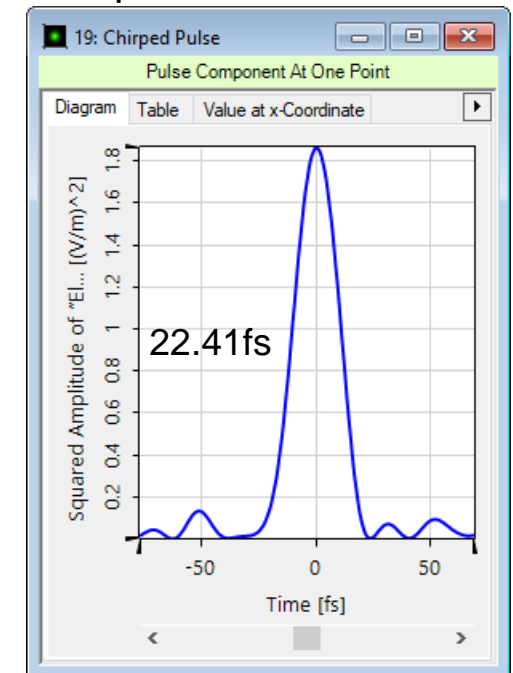
initial temporal pulse



spectral phase after chirped mirror



temporal pulse after chirped mirror



Document Information

title	Chirped Mirror for Ultrashort Pulses
document code	Demo.13
version	1.0
VL version used for simulations	VirtualLab Fusion Summer Release 2019 (7.6.1.18)
category	Demo
further reading	- Grating Stretcher for Ultrashort Pulses
