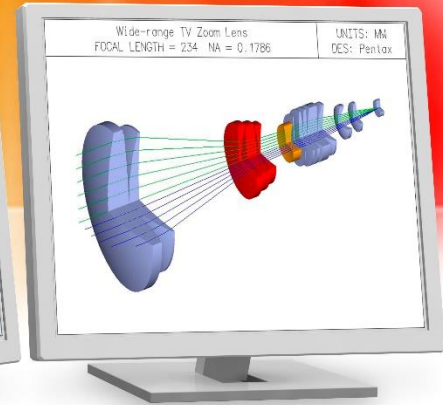
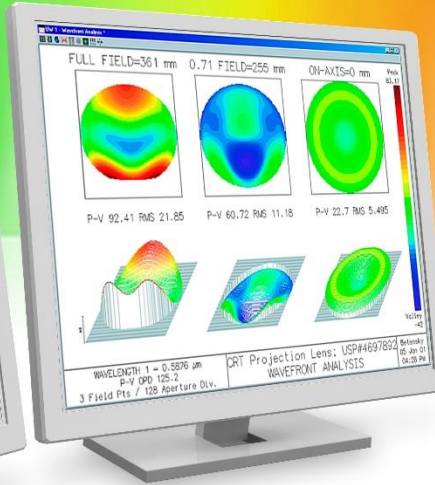
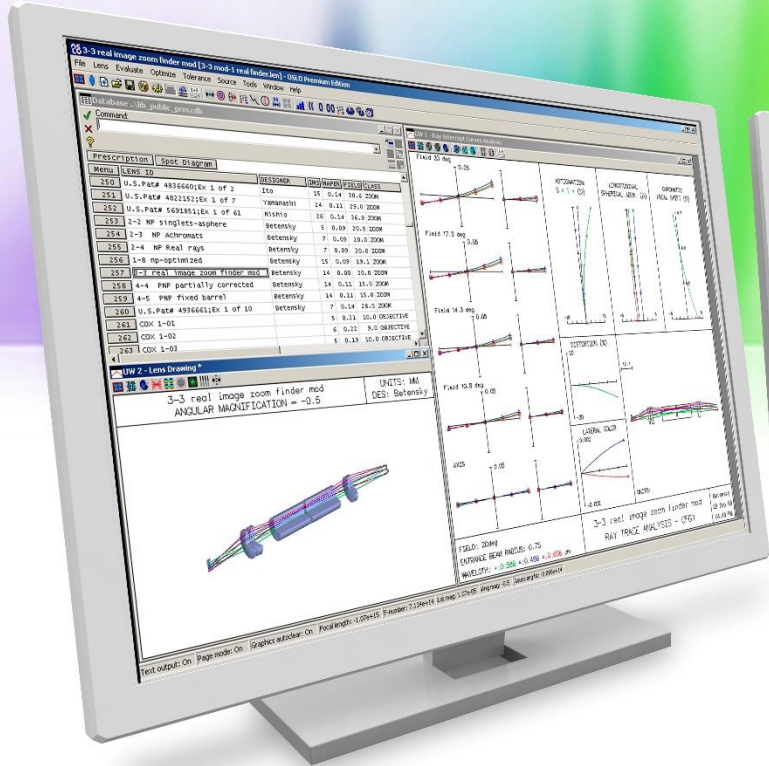


OSLO



LENS SPREADSHEET EDITOR

Top Level Lens Editing Functionality

Richard N. Youngworth - Presenter

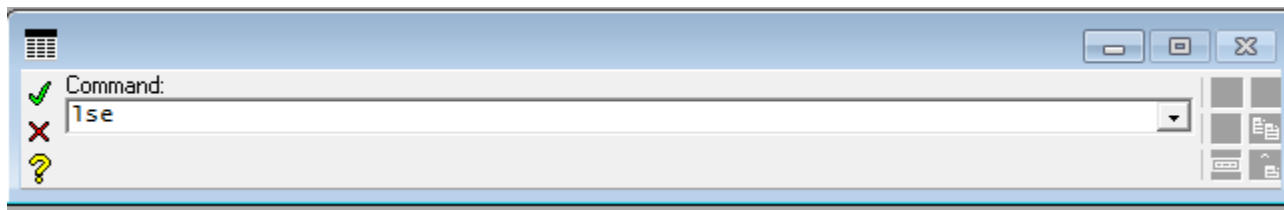
Accessing the surface data spreadsheet editor

SRF	RADIUS	THICKNESS	APERTURE RADIUS	GLASS	SPECIAL
OBJ	0.000000	125.000000	1.0000e-06	AIR	C
1	-250.000000	-125.000000	50.000000	REFL_HATCH	
AST	0.000000	125.000000	12.500000	REFL_HATCH	CD
3	-250.000000	-125.000000	50.000000	REFLECT	
IMS	0.000000	0.000000	25.000000		

- Spreadsheets are a primary editing tool in OSLO
- The most prominent spreadsheet that you will use most often is the surface data spreadsheet editor, also called the lens spreadsheet editor
- The lens spreadsheet has a lot of built in functionality and is one way to access to other spreadsheets in the program

Accessing the surface data spreadsheet editor

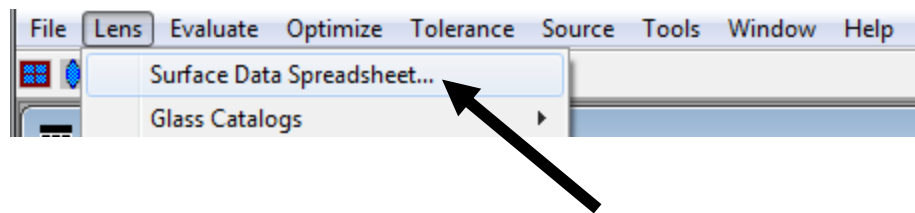
- The three most common way to access the lens data spreadsheet:
 - Command 'lse'



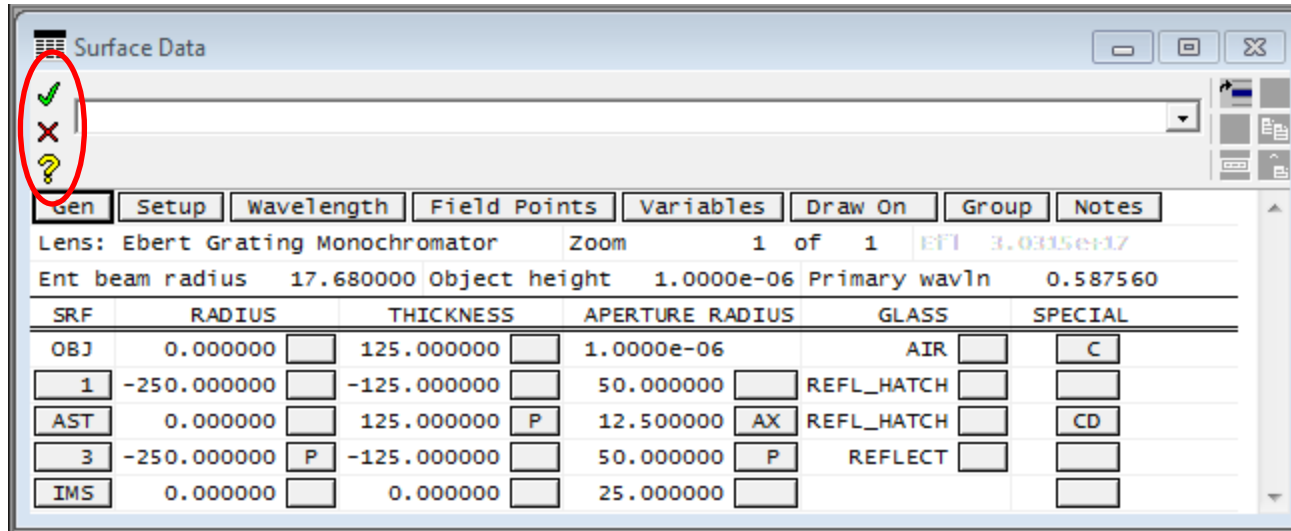
- The blue lens on the main button list



- The menu menu under Lens >> Surface Data Spreadsheet

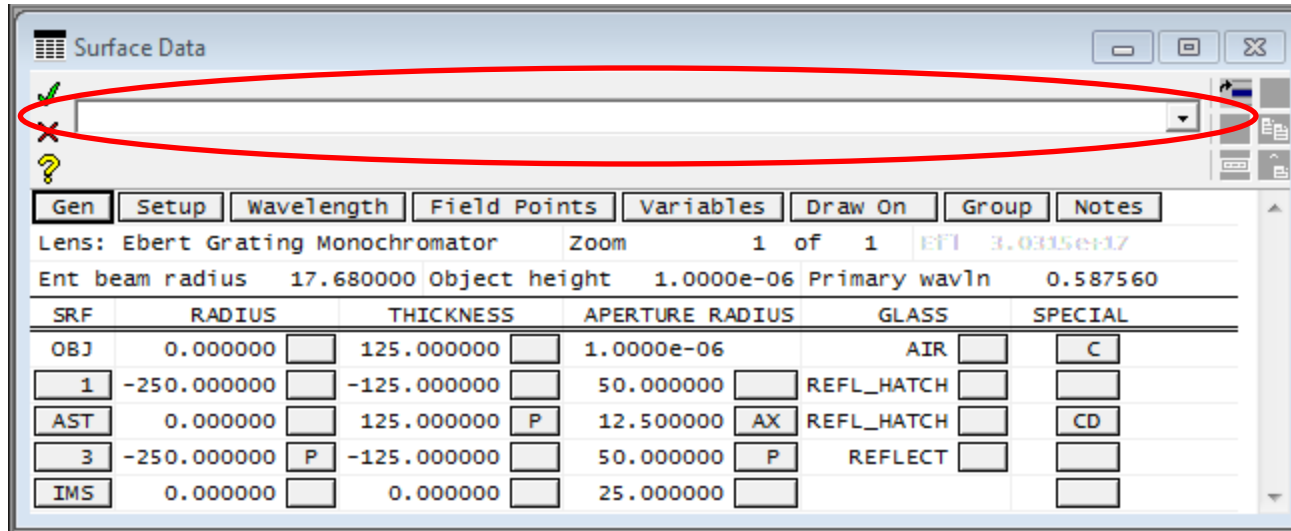


Accept and reject changes, help button



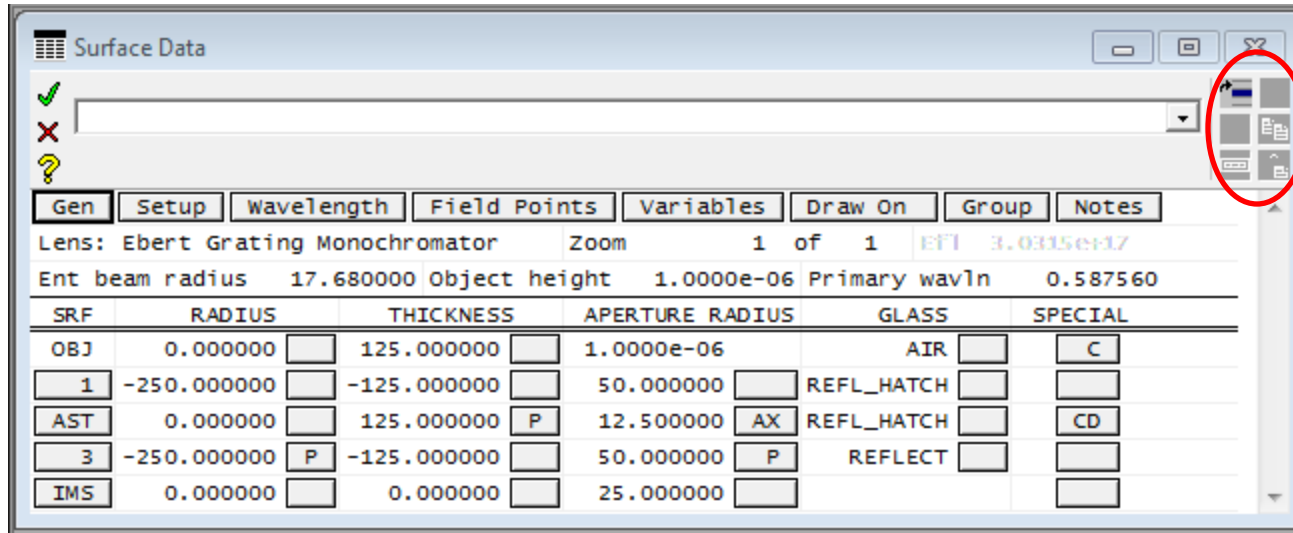
- The green check and red x-mark operate as normal
- Remember that you can access the help section for this spreadsheet with the yellow ?

The command line is embedded



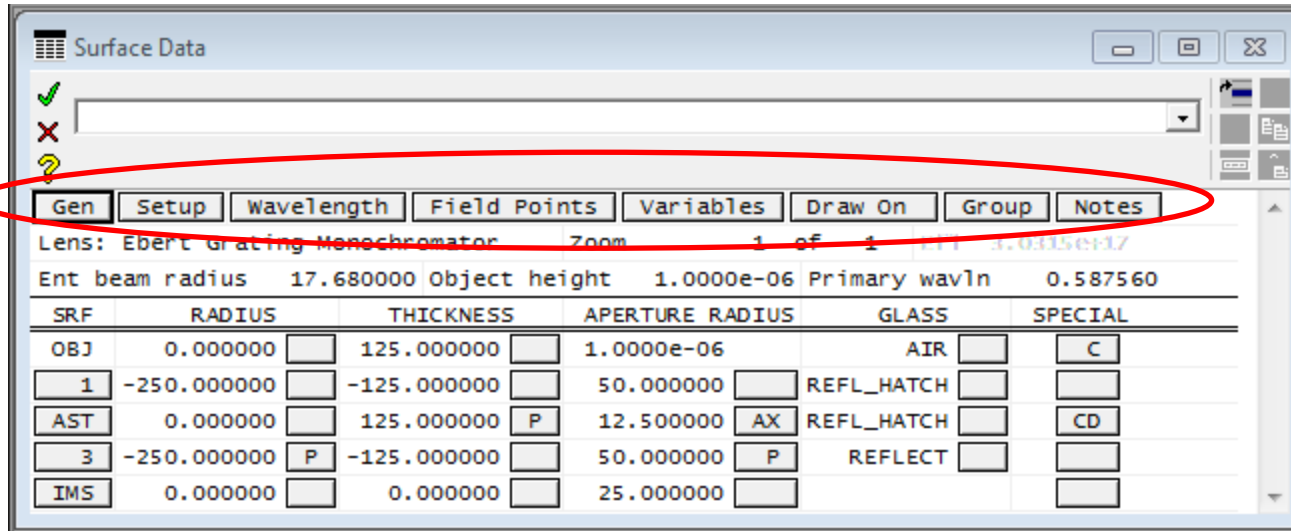
- The command line is embedded in the spreadsheet
- You retain access to it
- Commands not related to the spreadsheet entry protocol are stored in the history that can be accessed by the down arrow on the right of the command line

Editing buttons are available



- Six editing buttons are available
- Inserting a line is always available
- Cutting, reversing order, copying, and pasting available when at least one line is selected
- The show selected database button only is used with databases to limit the number of lines shown

Mid button row – various features



- The mid button row provides access to a number of other spreadsheets
- It also has a toggle button for the autodraw (“Draw On” or “Draw Off” depending on state)
- The group toggle button allows you to see specific surface data for groups
- Notes can be recorded for the lens with the right-most button

Mid spreadsheet data

Gen	Setup	wavelength	Field Points	Variables	Draw On	Group	Notes
Lens: Ebert Grating Monochromator		Zoom	1 of 1		EFL	3.0315e+17	
Ent beam radius	17.680000	Object height	1.0000e-06		Primary wavln	0.587560	
SRF	RADIUS	THICKNESS	APERTURE RADIUS	GLASS	SPECIAL		
OBJ	0.000000	125.000000	1.0000e-06	AIR	C		
1	-250.000000	-125.000000	50.000000	REFL_HATCH			
AST	0.000000	125.000000	12.500000	AX	REFL_HATCH	CD	
3	-250.000000	-125.000000	50.000000	P	REFLECT		
IMS	0.000000	0.000000	25.000000				

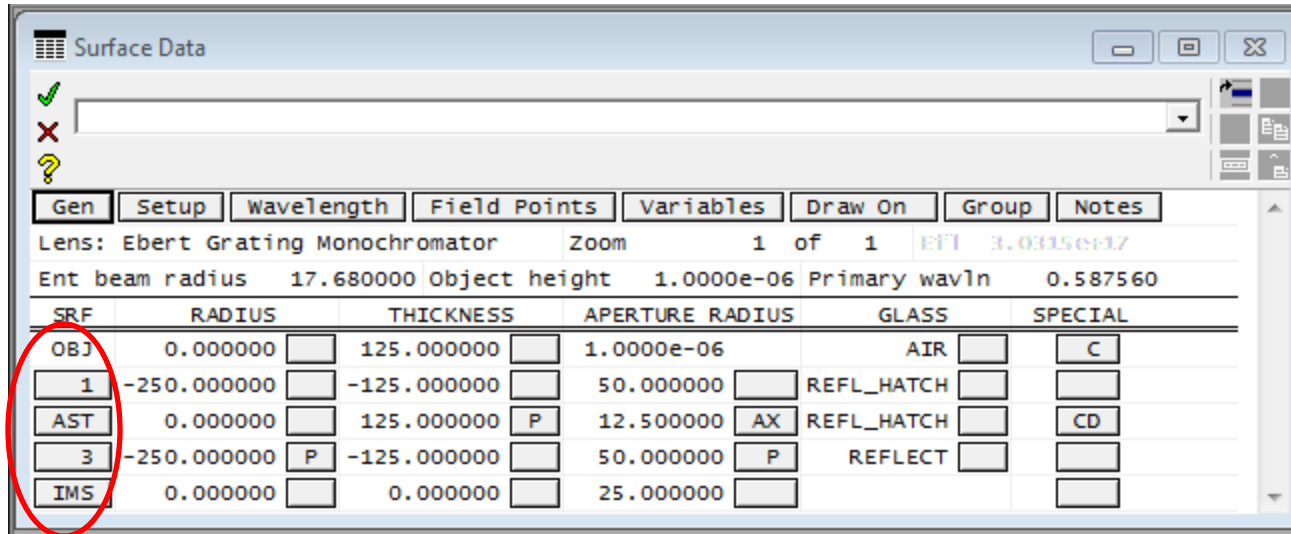
- The mid spreadsheet data is a mixture of different fields
- All of the fields can be edited here except for the EFL which is a calculated quantity for the lens data entered

Lower data entry and buttons

SRF	RADIUS	THICKNESS	APERTURE RADIUS	GLASS	SPECIAL
OBJ	0.000000	125.000000	1.0000e-06	AIR	C
1	-250.000000	-125.000000	50.000000	REFL_HATCH	
AST	0.000000	125.000000	12.500000	REFL_HATCH	CD
3	-250.000000	-125.000000	50.000000	REFLECT	
IMS	0.000000	0.000000	25.000000		

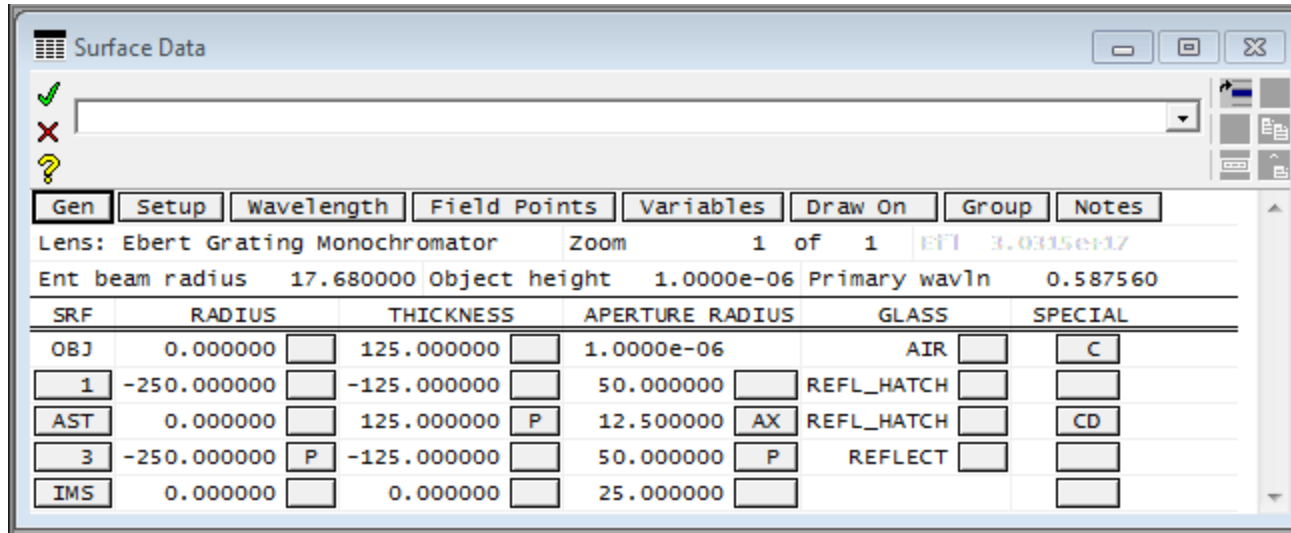
- The lowest fields in the spreadsheet have editable entry for radius, thickness, aperture radius, and glasses
- Each of these columns has a button next to it that provide a number of special options particular to the row to the left
- The SPECIAL column contains only buttons with many features available through them

Lower data entry and buttons



- The leftmost button row for SRF indicates special surface factors like the aperture stop AST and the image surface IMS
- Clicking on the leftmost buttons can be used to select a row and then holding and dragging can select multiple rows

A few tips and tricks using clicks with the surface data editor (lens spreadsheet)



- Right clicking below the mid buttons can be done to achieve a number of row-level edits
- There are some keystrokes that are handy too :
 - Control-left mouse button on the left buttons will add a row
 - The scroll wheel will scroll up and down
 - Plus esoteric ones like left clicking on a number to activate special editing that can be used to round numbers (see video for an example)