



Quick-reference Card

Model editing

-  ODEON Editor (Allows to edit all points and surfaces in the model).
-  Recommended only if not possible to change geometry in SketchUp or other CAD software.

Model viewing

See the model with or without surfaces and navigate within it.

-  **3D View** (standard model view in wireframe) [Shift+Ctrl+3]


Main functions and shortcuts

- Modelling options (reveals all nodes of surfaces) [M]
- Within the modelling options, select any surface by [Alt+LMB]
- Change between standard views [Spacebar].
- Highlight surfaces [H]
- Show corner numbers and coordinates [N]
- Set layers [Ctrl+L]
- Copy display to clipboard [Ctrl+C]

-  **3D Source Receiver View** [Shift+Ctrl+V]

Main functions and shortcuts

- Toggle Sources on/off [Shift+S]
- Toggle Receivers on/off [Shift+R]


-  **3DOpenGL** (visualization of model with colours of assigned materials) [Shift+Ctrl+0]

Main functions and shortcuts


- Move forward [Up arrow], Move backwards [Down arrow]
- Zoom In [Ctrl+I], Zoom Out [Ctrl+U],
- Rotate left, right, up, down [Shift+Left, Right, Up, Down arrow]
- Rotate model left, right, up, down [Ctrl+Left, Right, Up, Down arrow]
- Model view plane forward [P], Model view plane backwards [Shift+P]
- Random colours [R]
- Set layers [Ctrl+L]
- Copy display to clipboard [Ctrl+C]

Model setup



Settings that help make the model ready for simulations. At least **one source** and materials are absolutely necessary for the simplest calculation.


-  **Source-receiver list** (define Sources and Receivers) [Shift+Ctrl+S]
Use **Ctrl+RMB** to add a source or receiver in 3DEdit Source Receiver window.


-  New Point Source [Ctrl+P]
Use **Ctrl+LMB** to change source position in the visible grid.
Use the functions at the **bottom-left corner** for further interactive editing.


-  New array source [A] [C]


-  New Line Source [Ctrl+L] [I] [C]

-  New Multi-surface Source [Ctrl+M] [I] [C]
-  New Receiver [Ctrl+R]
Use **Ctrl+LMB** to change receiver position in visible grid.
Use the functions at the **bottom-left corner** for further interactive editing.


-  Tabulate selected Source or Receiver [Alt+A]


-  **Material list** (define absorption, scattering, transmission) [Shift+Ctrl+M]


-  Assign material to selected surfaces [Ins]


-  Assign material to all visible surfaces [Ctrl+Ins]


-  Add materials [Ctrl+M]

-  Edit a material [Ctrl+E]


-  Quick Estimate (Sabine, Eyring, Arau-Puchades) [Ctrl+Q]

-  Set layers (Easier to assign materials to visible surfaces) [Ctrl+L]

-  **Room setup** (adjust No. of rays and other simulation settings) [Shift+Ctrl+P]

-  **Room acoustics Parameter list** (edit and define new parameters, make visible/invisible, adjust Min and Max) [Shift+Ctrl+T]

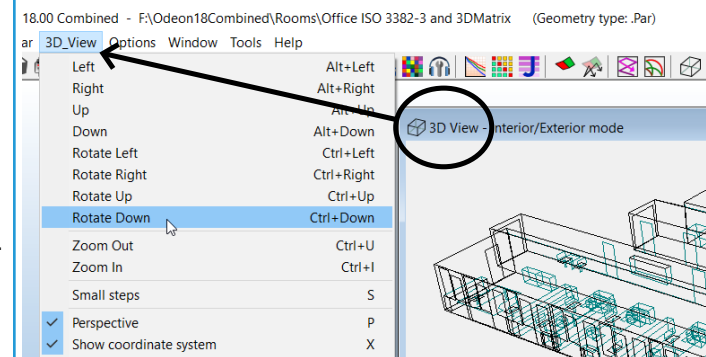
-  **Define grid** (colour maps on selected surfaces) [Shift+Ctrl+G] [I] [A] [C]

-  **Auralisation setup** (define parameters for Binaural or B-format auralisation) [Shift+Ctrl+A] [A] [C]

- F1** Open the ODEON help for the corresponding active window.

Context-sensitive menu

Almost every window in ODEON has a menu associated with it, which appears at the top menu bar, before the **Options** menu. This context-sensitive menu contains all available functions of the active window, with their shortcuts.



Model navigation

Used anywhere a 3D View of the room is available. Examples:



Left mouse button (LMB): Rotate room model and select functions.

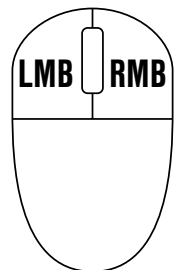
Right mouse button (RMB): Pan room model.

Scroll wheel: Zoom model in/out.

[Alt+LMB]: Zoom model in/out.

[Spacebar]: Next standard view.

[Shift+Spacebar]: Previous standard view.



All shortcuts are based on Windows systems



Quick-reference Card



Main Tools




Calculations


With these tools you can make detailed calculations using the hybrid image source method and ray radiosity algorithms in ODEON.



 **Global Estimate** (reverberation time in whole room) [Shift+Ctrl+E] 


 **3D Matrix** (source to source calculations) [Shift+Ctrl+X] 

 **Job list** (calculations between selected source(s) and receivers(s)) [Shift+Ctrl+J]

 Run Single Job [Alt+R]

 Run All Jobs [Alt+A]

 View Single-point response [Alt+P] 
Show reflections in reflectogram [F7]


 View Multi-point response [Alt+M]
Toggle Simulation/Measurement mode [M]

Common to Single-point and Multi-point response



Min and Max values, taken from Room Acoustics Parameter List [X]

Next Receiver [R] - Previous Receiver [Shift+R]

Toggle/hide graphs or curves [T]

 3D Direct Sound (requires Grid defined. See Model Setup) [Alt+D] 

 Streaming Convolution (listen to anechoic files combined with a Single-point response) [Alt+C] 

 Grid response (requires Grid to be defined. See Model Setup) [Alt+G] 

Common functions and shortcuts

You can check which ones are exactly available for each operation, by looking at the **Context-sensitive menu** (see first page).

Change parameter [Left/Right arrows]

Change Frequency [Up/Down arrows]

Copy graph to clipboard [Ctrl+C]


Export parameters as ASCII (txt file) [Ctrl+A]

Auralisations

Make extensive auralisation studies by defining multiple convolutions and mixes between them. The output .WAV files can be exported and can be played outside ODEON.


No.	Conv. no.	Mix. Lev.	Delay in sec.	Job descr.
1	(none)	0.00	0.00	
2	(none)	0.00	0.00	
3	(none)	0.00	0.00	
4	(none)	0.00	0.00	
5	(none)	0.00	0.00	
6	(none)	0.00	0.00	


Toggle selected receivers [Ctrl+Spacebar]

 Play single point impulse response [Ctrl+I]

Calculate distance Rptws -> Single Point Receiver [Ctrl+D]

Extract attenuation factors for IR's and save in file [Alt+X]

 View 3DOpenGL at receiver position [Alt+O]

 Play wave file [Alt+S]

Toggle job and auralisation tabsheets [Alt+T]

Copy row [Ctrl+C]


Paste column [Alt+V]

Paste row (all columns) [Ctrl+V]

Reflector coverage


Mainly used in auditorium and concert hall design, where you want to see how reflections from selected surfaces are distributed in the room.



 **Define reflector surfaces** [Shift+Ctrl+F]

 **3D reflector coverage** (see how rays are reflected from selected surfaces)

Visualisations

The tools are only used for visualisation purposes and do not provide calculations. Particularly useful in inspecting reflections and identifying holes in the room.

 **3D Investigate Rays** (visualizes reflected rays from selected source) [Shift+Ctrl+I]


 **3D Billiard** (visualises reflected balls from selected source) [Shift+Ctrl+B] 

Measurements

Use the measurement tools in ODEON as standalone or together with a room model. Capture impulse responses by connecting a **Mic** and an **Omni-directional loudspeaker** to a PC with ODEON installed.

Room acoustic parameters derived from Impulse responses can be compared to those simulated from room models. A Genetic material optimization tool allows to match the model's absorption coefficients to reality.

 **Measure Impulse Response** (sine sweep)

 **Load Impulse Response** (process Impulse response) [Shift+Ctrl+L]

Main functions and shortcuts

Add measured parameters to Multi-point job [Ins]

Crop Impulse Response (first select an area by holding the LMB and dragging from **top-left** to **bottom-right**) [C]



Show broadband [Home]

Change parameter [Left/Right arrows]

Change Frequency [Up/Down arrows]


Copy graph to clipboard [Ctrl+C]


Export parameters as ASCII (txt file) [Ctrl+A]

 **Genetic Material Optimizer** [Shift+Ctrl+Q] 
(adjusts absorption coefficients in the model, so that simulated room acoustic parameters match measured ones)

Animations


The tools allow you to capture short animations of E.g. 3D Investigate Rays, 3D Billiard and other visualisations. You can edit and export them as GIF files for web or Power Points.

 Add frame to current animated GIF [Shift+Ctrl+Ins]

 Add sequence of frames to GIF Animation [Shift+Ctrl+Enter]

 Insert new GIF film [Shift+Ctrl+End]

 Open ODEON GIF Workshop

 Set graphic exchange options [Shift+Ctrl+H]

All shortcuts are based on Windows systems