

# User's Manual

**Patient Attenuation Checkbox:**  
Select if Patient Attenuation Factor will be included in calculations.

**IDR Checkbox:**  
Select if the calculations will follow IDR or TADR method.

**Room Configuration Checkboxes:**  
Choose what the room configuration will be.

When the IDR checkbox is selected the  $Tr_{per\ week}$  and occupation factor edit fields are disabled and the  $Tr_{per\ day}$  is enabled.

**Dropdown menu:**  
Select Radiation Source.

**Panels:**  
Panels to Edit parameters. (Workload, Wall Distances from Source, Wall Areas, Design Parameters, Angles and Material Prices).

**Export/Save Button**

**Run Button**

BrachyBarrier

Shielding Thicknesses

S Ir192 ☐ Pt.Att. ☐ IDR ☐ NoMaze ☐ OneLeg ☐ TwoLeg

Workload		Wall Distances from Source				Wall Areas				Design Parameters						Angles			
A[MBq]	0.00	d <sub>1</sub> [m]	0.00	d <sub>d1</sub> [m]	0.00	A <sub>1</sub> [m <sup>2</sup> ]	0.00	A <sub>ma</sub> [m <sup>2</sup> ]	0.00	P[μGy]	Select	0.00	<input type="checkbox"/> C	T	0.00	θ° <sub>o1</sub>	0.00	θ° <sub>o2</sub>	0.00
#S	0.00	d <sub>2</sub> [m]	0.00	d <sub>d2</sub> [m]	0.00	A <sub>2</sub> [m <sup>2</sup> ]	0.00	A <sub>mb</sub> [m <sup>2</sup> ]	0.00	P[μGy]	Select	0.00	<input type="checkbox"/> C	T	0.00	θ° <sub>r1</sub>	0.00	θ° <sub>r2</sub>	0.00
t[h]	0.00	d <sub>3</sub> [m]	0.00	d <sub>m1</sub> [m]	0.00	A <sub>3</sub> [m <sup>2</sup> ]	0.00	A <sub>m1a</sub> [m <sup>2</sup> ]	0.00	P[μGy]	Select	0.00	<input type="checkbox"/> C	T	0.00				
Tr <sub>per week</sub>	0.00	d <sub>4</sub> [m]	0.00	d <sub>m2</sub> [m]	0.00	A <sub>4</sub> [m <sup>2</sup> ]	0.00	A <sub>m1b</sub> [m <sup>2</sup> ]	0.00	P[μGy]	Select	0.00	<input type="checkbox"/> C	T	0.00				
W	-	d <sub>5</sub> [m]	0.00	d <sub>m3</sub> [m]	0.00	A <sub>5</sub> [m <sup>2</sup> ]	0.00	A <sub>m2a</sub> [m <sup>2</sup> ]	0.00	P[μGy]	Select	0.00	<input type="checkbox"/> C	T	0.00				
		d <sub>6</sub> [m]	0.00			A <sub>6</sub> [m <sup>2</sup> ]	0.00	A <sub>m2b</sub> [m <sup>2</sup> ]	0.00	P <sub>m1</sub>	Select	0.00	<input type="checkbox"/> C	T	0.00				

	Materials	Thickness1	Cost1	Thickness2	Cost2	Thickness3	Cost3	Thickness4	Cost4	Thickness5	Cost5	Thickness6	Cost6	MazeThickness1	MazeCos
1															
2															
3															

	Shielding	Distance1	Distance2	Distance3	Distance4	Distance5	Distance6	EdgeDistance1	EdgeD
1									
2									
3									

	Materials	MazeLeg1	MazeLeg2
1			
2			
3			

When the NoMaze checkbox is selected all edit fields related to maze parameters are disabled. That is, maze distances, maze areas and angles.

When the OneLeg checkbox is checked, the edit field related to the parameters of the first leg maze are enabled. That is,  $d_{d1}$ ,  $d_{m1}$ ,  $d_{m2}$ ,  $A_{ma}$ ,  $A_{m1a}$ ,  $A_{m1b}$ ,  $\theta_{o1}$  and  $\theta_{r1}$ .

When the TwoLeg checkbox is checked, the edit field related to the parameters of the first and second leg maze are enabled. That is all the field for distances, areas and angles are enabled.

**Tables:**  
Tables to display calculated results. Thickness and Cost results, Dose Rate results and Maze Entrance Dose Rates.

**Wall Distances from Source Panel:** where distances of the source from the room walls, the direct distances to the entrance mazes and the lengths of the maze legs can be set.

**Design Parameters Panel:** where the design limits for the neighbouring side, edge and corner rooms can be set along with the addition or not of contamination and occupancy factor values.

**Angles Panel:** where the incident and reflection angles can be set for each scatter event.

**Workload Panel:** where Activity A, Numbers of Sources #S, Dose per patient, Dose per minute and Treatment per week or day can be set.  
  
W displays the Workload calculated.

Workload	Wall Distances from Source	Wall Areas	Design Parameters	Angles
A[MBq] 0.00	d <sub>1</sub> [m] 0.00 d <sub>d1</sub> [m] 0.00	A <sub>1</sub> [m <sup>2</sup> ] 0.00 A <sub>ma</sub> [m <sup>2</sup> ] 0.00	P[μGy] Select 0.00 C T 0.00	θ <sup>o</sup> <sub>o1</sub> 0.00 θ <sup>o</sup> <sub>o2</sub> 0.00
#S 0.00	d <sub>2</sub> [m] 0.00 d <sub>d2</sub> [m] 0.00	A <sub>2</sub> [m <sup>2</sup> ] 0.00 A <sub>mb</sub> [m <sup>2</sup> ] 0.00	P[μGy] Select 0.00 C T 0.00	θ <sup>o</sup> <sub>r1</sub> 0.00 θ <sup>o</sup> <sub>r2</sub> 0.00
t [h] 0.00	d <sub>3</sub> [m] 0.00 d <sub>m1</sub> [m] 0.00	A <sub>3</sub> [m <sup>2</sup> ] 0.00 A <sub>m1a</sub> [m <sup>2</sup> ] 0.00	P[μGy] Select 0.00 C T 0.00	
Tr <sub>per week</sub> 0.00	d <sub>4</sub> [m] 0.00 d <sub>m2</sub> [m] 0.00	A <sub>4</sub> [m <sup>2</sup> ] 0.00 A <sub>m1b</sub> [m <sup>2</sup> ] 0.00	P[μGy] Select 0.00 C T 0.00	
	d <sub>5</sub> [m] 0.00 d <sub>m3</sub> [m] 0.00	A <sub>5</sub> [m <sup>2</sup> ] 0.00 A <sub>m2a</sub> [m <sup>2</sup> ] 0.00	P[μGy] Select 0.00 C T 0.00	
	d <sub>6</sub> [m] 0.00	A <sub>6</sub> [m <sup>2</sup> ] 0.00 A <sub>m2b</sub> [m <sup>2</sup> ] 0.00	P <sub>m</sub> l Select 0.00 C T 0.00	
				<b>Material Prices</b>
				Pb Pr[Eu/Kg] 0.00
				Std Pr[Eu/Kg] 0.00
				Conc Pr[Eu/Kg] 0.00

**Wall Areas Panel:** where the Areas of the room walls, the areas of the maze walls and the area sections involved in scattering are set.

**Material Prices Panel:** where the prices of the materials involved can be set in Euro per Kg.

Table where the thickness and cost results are displayed for each material used along with a best possible combination of protection-cost.

	Materials	Thickness1	Cost1	Thickness2	Cost2	Thickness3	Cost3	Thickness4	Cost4	Thickness5	Cost5	Thickness6	Cost6	MazeThickness1	MazeCost
1															
2															
3															
<div><div></div><div></div><div></div></div>															

	Shielding	Distance1	Distance2	Distance3	Distance4	Distance5	Distance6	EdgeDistance1	EdgeD
1									<div><div></div><div></div><div></div></div>
2									
3									
<div><div></div><div></div><div></div></div>									

	Materials	MazeLeg1	MazeLeg2
1			
2			
3			

Table where the Dose Rate results for each material and direction are displayed along with the Dose Rate for the best possible combination of protection-cost and colour coded depending on whether the dose is within set dose constraints (green), equal to the dose constraints (yellow) or out of dose constraint limits (red).

Table where the Dose Rate results for each material and maze entrance are displayed.