The real component of the Gabor filter response in 3D at a particular (x,y,z) location was defined as:

where

The necessary parameters are defined below along with their implemented values:

* : orientation in x-y plane; ϵ , , , } radians
* : orientation in x-z plane; ϵ , , } radians
* : bandwidth, or half-response spatial frequency; fixed at (therefore )
* : wavelength of cosine factor; determined such that 7\*0.56\* would equate to the window size of a m x m x m kernel λ ϵ {0.88, 1.4142, 2.0750, 2.828, 5.6569, 11.3137}
* : specified based on B, . Isotropic filter, so same in all directions
* : phase offset; fixed at in all directions