$h(x) = log(f(x))$

$h'(x) = \frac{h(x+\epsilon)-h(x-\epsilon)}{2\epsilon}$, where the default value for ϵ is 1×10^{-5}.

$z_j = \frac{h(x_{j+1})-h(x_j)-x_{j+1}h'(x_{j+1})+x_j h'(x_j)}{h'(x_j)-h'(x_{j+1})}$

For $x \in [z_{j-1}, z_j], \;\; j = 1, ..., k, \;\; u_k(x) = h(x_j) + (x - x_j)h'(x_j)$, where z_0 is the lower bound of D (or $-\infty$ if D is not bounded below) and z_k is the upper bound of D (or $+\infty$ if D is not bounded above).

$s_k(x) = \exp\ u_k(x) / \int_D \exp\ u_k(x')dx'$.

For $x \in [z_{j-1}, z_j]$, the CDF $S(x) = \frac{1}{R}\left(\sum_{i=1}^{j-1} \frac{1}{h'(x_i)}[e^{u(z_i)} - e^{u(z_{i-1})}] + \frac{1}{h'(x_j)}[e^{u(x)} - e^{u(z_{j-1})}]\right)$, where $R = \sum_{i=1}^{k} \frac{1}{h'(x_i)}[e^{u(z_i)} - e^{u(z_{i-1})}]$.

For $x \in [z_{j-1}, z_j]$, the Inverse CDF $U(S) = \frac{log[(SR - \sum_{i=1}^{j-1} \frac{1}{h'(x_i)}[e^{u(z_i)} - e^{u(z_{i-1})}])h'(x_j) + e^{u(z_{j-1})}] - h(x_j)}{h'(x_j)} + x_j$, where $R = \sum_{i=1}^{k} \frac{1}{h'(x_i)}[e^{u(z_i)} - e^{u(z_{i-1})}]$.

For $x \in [x_j, x_{j+1}], \;\; j = 1, ..., k-1 \;\; l_k(x) = \frac{(x_{j+1}-x)h(x_j)+(x-x_j)h(x_{j+1})}{x_{j+1}-x_j}$. For $x < x_1$ or $x > x_k \;\; l_k(x) = -\infty$.