

Parameter	Function	Value
$\{N^{(l)}\}$	Layer Widths	[128, 128, 96]
σ_b	Inference standard dev.	0.01
σ_p	Generative standard dev.	0.01
N_d	Number of dendritic branches	16
L	Epoch number	50
T_w	Length of Wake phase	200
T_s	Length of Sleep phase	200
K	Batch number	256
η_p	Generative parameter learning rate	0.001
η_b	Inference parameter learning rate	0.001
$[\beta_1, \beta_2]$	Adam optimizer parameters	[0.9, 0.999]

Supplementary File 2: **CIFAR10 multicompartment network hyperparameters.** The hyperparameters used to train our multicompartment neural network model on the CIFAR10 dataset.