

## Supplementary Table 1. Quantitative features of EC neuron dendrites

	Apical Dend Length All Cells ( $\mu\text{m}$ )					Layer occupancy (%)			
	Layer1	Layer2	Layer3	Layer5	Total Length	Layer 1	Layer 2	Layer 3	Layer 5
EC2 705302	2,220	732	0	0	2,952	75.2	24.8	0.0	
EC2 609291	6,047	1,059	0	0	7,106	85.1	14.9	0.0	
EC3 60126	4,668	3,416	4,449	0	12,532	37.2	27.3	35.5	
EC3 80604	3,494	2,400	1,159	0	7,052	49.5	34.0	16.4	
EC5 609202	475	95	207	0	776	61.1	12.2	26.7	

	Bas Dend Length All Cells ( $\mu\text{m}$ )					Layer occupancy (%)			
	Layer1	Layer2	Layer3	Layer5	Total Length	Layer 1	Layer 2	Layer 3	Layer 5
EC2 705302	0	365	2,503	0	3,276		11.2	76.4	
EC2 609291	0	602	2,179	0	4,145		14.5	52.6	
EC3 60126	0	0	10,257	0	10,257			100.0	
EC3 80604	0	0	9,642	0	9,642			100.0	
EC5 609202	0	0	2,682	9,743	12,424			21.6	78.4

## Supplementary Table 2. Quantitative features of EC neuron axons

	Axonal Length All Cells ( $\mu\text{m}$ )					Layer occupancy (%)			
	Layer1	Layer2	Layer3	Layer5	Total Length	Layer 1	Layer 2	Layer 3	Layer 5
EC2 705302	25,498	996	1,607	319	28,419	89.7	3.5	5.7	1.1
EC2 609291	18,197	1,158	1,279	269	20,903	87.1	5.5	6.1	1.3
EC3 60126	2,480	3,611	7,810	5,356	19,257	12.9	18.8	40.6	27.8
EC3 80604	1,552	4,167	8,097	5,994	19,810	7.8	21.0	40.9	30.3
EC5 609202	0	538	29,387	58,307	88,233		0.6	33.3	66.1

	Boutons total				
	Layer 1	Layer 2	Layer 3	Layer 5	Total
EC2 705302	200,666	9,538	13,724		223,929
EC2 609291	161,953	9,031	12,175		183,159
EC3 60126	27,506	24,778	36,267	15,260	103,810
EC3 80604	17,666	35,963	70,769	69,886	194,283
EC5 609202	259	4,768	252,104	400,262	657,394