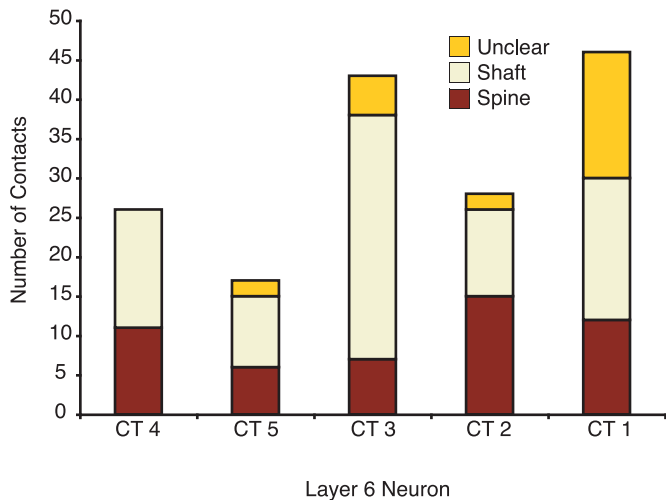


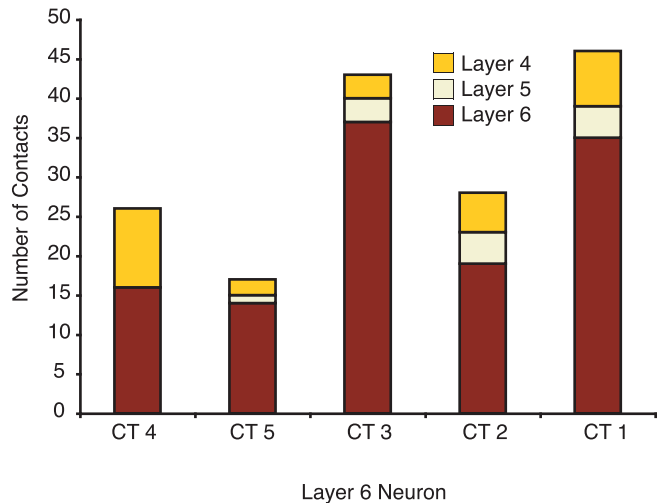
| <i>CT neuron</i> | <i>Cat2003</i> <i>S23C1</i> | <i>Cat2304 -</i> <i>S30C1</i> | <i>Cat2403 S39C1</i> | <i>Cat1804 S50C1</i> | <i>Cat0105 S45C1</i> (^a) |
|---|---|--|--|---|---|
| Number of Dendrites | 12 | 6 | 9 | 9 | 12 |
| Apical Dendrite Length (μm) | 3449 | 7213 | 4689 | 4747 | 4477 |
| Basal Dendrites Length (μm) | 3095 | 4131 | 3132 | 3364 | 2942 |
| Mean Path Length to Termination ($\pm\text{std}$)[range](μm) (apical) | 340 \pm 206 (n = 18) [107 to 633] | 614 \pm 295 (n = 25) [127 to 1080] | 386 \pm 189 (n = 25) [73 to 885] | 465 \pm 247 (n = 22) [146 to 931] | 402 \pm 229 (n = 26) [100 to 843] |
| Mean Path Length to Termination ($\pm\text{std}$)[range](μm) (basals) | 131 \pm 39 (n = 25) [35 to 186] | 185 \pm 36 (n = 28) [96 to 258] | 170 \pm 36 (n = 20) [77 to 212] | 160 \pm 25 (n = 24) [97 to 199] | 121 \pm 24 (n = 27) [45 to 149] |
| Number of apical terminations | 18 | 25 | 25 | 22 | 26 |
| Number of Basal Terminations | 25 | 28 | 20 | 24 | 27 |
| Percentage of Dendrite formed by Terminal Segment | 94.2% | 81.4% | 92.1% | 87% | 91.7% |
| Length of Dendrite In Layer 2/3 (μm) | 0 | 347 | 128 | 134 | 62 |
| Length of Dendrite In Layer 4 (μm) | 692.3 | 2175 | 592 | 2360 | 95 ^(b) 1391 ^(c) |
| Length of Dendrite In Layer 5 (μm) | 1059.9 | 2404 | 3190 | 2322 | 1373 |
| Length of Dendrite In Layer 6 (μm) | 4223.8 | 5765 | 3899 | 3077 | 3911 |

Supplementary Table 1. Topological and metric measure of the dendritic arborizations of the reconstructed layer 6 CT cells. Values were not corrected for shrinkage. ^(a) Neuron CT5 had a portion of its dendrite in a dense region of dLGN boutons and another portion in a less dense region, and so the dLGN bouton density was calculated separately. ^(b) Dense region of boutons. ^(c) Less dense region of bouton.

A



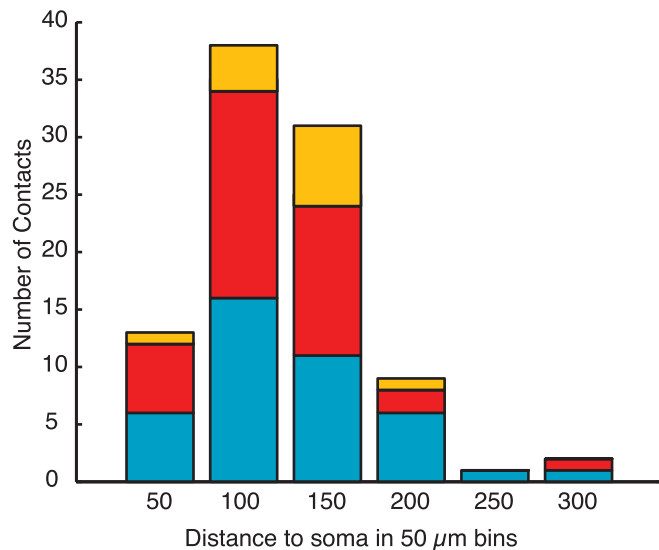
B



Supplementary Figure 1. Contacts between dLGN axons and corticothalamic cells. Histograms summarizing the number of contacts made with each reconstructed cell. **A.** Number of contacts per target location on the dendrite. **B.** Number of contacts per cortical layer.

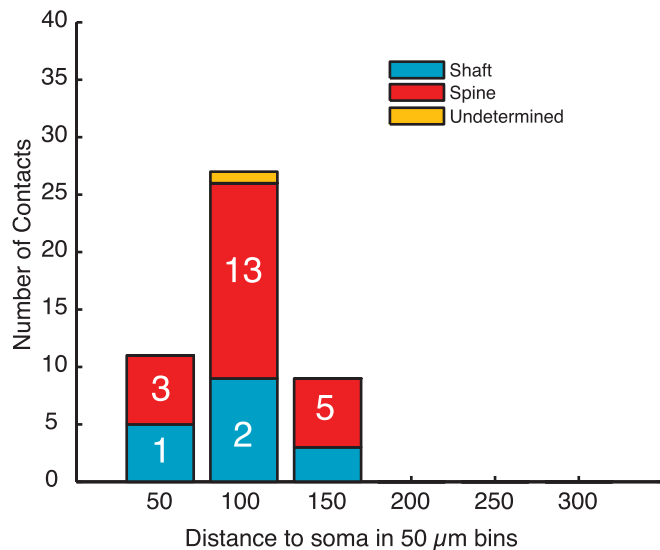
A

All contacts observed at LM



B

All contacts verified in EM



Supplementary Figure 2. Distribution of contacts with distance to the soma. Histograms showing the distribution of the number of contacts formed with basal dendrites with distance from the soma measured in bins of 50 μm. The bars are color coded for the type of target. **A.** Histogram shows the distribution of all the contacts. **B.** Histogram shows the distribution of the contacts investigated in EM. White numbers inside the bar indicate the number of contacts that formed synapses.