Caffe Documentation for CifarNet

layer {  
  name: "conv1"  
  type: "Convolution"  
  bottom: "data"  
  top: "conv1"  
  param {  
    lr\_mult: 1  
  }  
  param {  
    lr\_mult: 2  
  }  
  convolution\_param {  
    num\_output: 32  
    pad: 2  
    kernel\_size: 5  
    stride: 1  
    weight\_filler {  
      type: "gaussian"  
      std: 0.0001  
    }  
    bias\_filler {  
      type: "constant"  
    }  
  }  
}

The parameter type defines that this layer is convolutional layer. The number of output neurons can be derived from parameter num\_output = 32, which tells that the output is 32X32.

Parameter bottom defines input layer and parameter top defines next/output layer.

Pad = 2 tells that 2 zeroes are padded to each side of the 32X32 matrix. kernel size is 5X5. stride of 1 means that after each calculation, kernel mask is shifted by 1 for next output neuron.

The convolutional layer is then connected to Pooling layer of type ‘max’ which means it is a max poolinglayer. This has a kernel size of 3 and stride of 1. Next is a reLU layer and since it is a simple ReLU layer which is a function of type y = max(0,a) where a = Wx + b, is the output of convolutional/pooling layer.