

## tf.spectral.irfft3d

```
irfft3d(  
    input_tensor,  
    fft_length=None,  
    name=None  
)
```

Defined in [tensorflow/python/ops/spectral\\_ops.py](#).

See the guide: [Spectral Functions > Discrete Fourier Transforms](#)

Inverse 3D real-valued fast Fourier transform.

Computes the inverse 3-dimensional discrete Fourier transform of a real-valued signal over the inner-most 3 dimensions of **input**.

The inner-most 3 dimensions of **input** are assumed to be the result of **RFFT3D**: The inner-most dimension contains the **fft\_length / 2 + 1** unique components of the DFT of a real-valued signal. If **fft\_length** is not provided, it is computed from the size of the inner-most 3 dimensions of **input**. If the FFT length used to compute **input** is odd, it should be provided since it cannot be inferred properly.

Along each axis **IRFFT3D** is computed on, if **fft\_length** (or **fft\_length / 2 + 1** for the inner-most dimension) is smaller than the corresponding dimension of **input**, the dimension is cropped. If it is larger, the dimension is padded with zeros.

#### Args:

- **input**: A **Tensor** of type **complex64**. A complex64 tensor.
- **fft\_length**: A **Tensor** of type **int32**. An int32 tensor of shape [3]. The FFT length for each dimension.
- **name**: A name for the operation (optional).

#### Returns:

A **Tensor** of type **float32**. A float32 tensor of the same rank as **input**. The inner-most 3 dimensions of **input** are replaced with the **fft\_length** samples of their inverse 3D real Fourier transform.

#### numpy compatibility

Equivalent to `np.irfftn` with 3 dimensions.

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