

## Camera parameters

### Camera 1 (Frame1):

#### **Intrinsic matrix:**

[[1.600e+03, 0.000e+00, 9.595e+02],  
[0.000e+00, 1.600e+03, 5.395e+02],  
[0.000e+00, 0.000e+00, 1.000e+00]]

**Extrinsic matrix** (this is the rotation and translation [m] of Camera 1 with respect to the world coordinate system):

[[ -6.32422984e-01, -7.74574101e-01, 8.72639567e-03, -2.36433081e+00],  
[ -5.00836670e-01, 4.00276423e-01, -7.67425179e-01, -1.74806440e+00],  
[ 5.90934694e-01, -4.89707828e-01, -6.41079128e-01, 2.59576015e+01],  
[ 0., 0., 0., 1.]]

**Distortion:** [0.0, 0.0, 0.0, 0.0, 0.0]

### Camera 2 (Frame2):

#### **Intrinsic matrix:**

[[1.49333333e+03, 0.00000000e+00, 9.78700000e+02],  
[0.00000000e+00, 1.49333333e+03, 5.20300000e+02],  
[0.00000000e+00, 0.00000000e+00, 1.00000000e+00]]

**Extrinsic matrix** (this is the rotation and translation of Camera 2 with respect to the world coordinate system):

[[ -0.5845883, -0.81050003, -0.03669427, -2.39520617],  
[ -0.5041514, 0.39832053, -0.76627171, -1.79913743],  
[ 0.6356793, -0.42945388, -0.64146805, 26.26804151],  
[ 0., 0., 0., 1.]]

**Distortion:** [0.0, 0.0, 0.0, 0.0, 0.0]

### Transformation between cameras (from Camera 1 to 2):

R\_vec:

[[ 0.9971792 , -0.00348069, 0.07497863],  
[ 0.00362138, 0.99999203, -0.00174044],  
[-0.07497205, 0.00200697, 0.99718366]]

T\_vec = [-1.98989457, 0.00265269, 0.20979508] [meters]

The above transformations are from Camera 1 to Camera 2 and have been estimated using the following equations:

$$R_{vec} = R_2 * R_1^T$$
$$T_{vec} = T_2 - R_2 * R_1^T * T_1 = T_2 - R_{vec} * T_1$$