

```
cameraParams =
```

```
cameraParameters with properties:
```

```
Camera Intrinsics
```

```
Intrinsics: [1x1 cameraIntrinsics]
```

```
Camera Extrinsics
```

```
RotationMatrices: [3x3x12 double]
```

```
TranslationVectors: [12x3 double]
```

```
Accuracy of Estimation
```

```
MeanReprojectionError: 0.4477
```

```
ReprojectionErrors: [54x2x12 double]
```

```
ReprojectedPoints: [54x2x12 double]
```

```
Calibration Settings
```

```
NumPatterns: 12
```

```
DetectedKeypoints: [54x12 logical]
```

```
WorldPoints: [54x2 double]
```

```
WorldUnits: 'centimeters'
```

```
EstimateSkew: 0
```

```
NumRadialDistortionCoefficients: 2
```

```
EstimateTangentialDistortion: 0
```

```
>> CameraCalibration
```

```
Standard Errors of Estimated Camera Parameters
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```
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```

```
Intrinsics
```

```
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```

```
Focal length (pixels): [ 1523.3867 +/- 4.2075      1528.6228 +/- 4.0811 ]
```

```
Principal point (pixels): [ 1000.0736 +/- 1.2439      537.3685 +/- 1.5367 ]
```

```
Radial distortion: [ 0.0843 +/- 0.0072      -0.0790 +/- 0.0414 ]
```

```
Extrinsics
```

```
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```

```
Rotation vectors:
```

```
[ 0.0329 +/- 0.0025      0.0812 +/- 0.0021 ✓
```

```
-0.0364 +/- 0.0003 ]
```

```
[ 0.1167 +/- 0.0018      0.4419 +/- 0.0015 ✓
```

```
-0.0636 +/- 0.0003 ]
```

```
[ 0.0454 +/- 0.0028      0.1339 +/- 0.0021 ✓
```

```
-0.1093 +/- 0.0003 ]
```

```
[ 0.0050 +/- 0.0019      -0.1962 +/- 0.0017 ✓
```

```
-0.1001 +/- 0.0003 ]
```

```
[ -0.0133 +/- 0.0018      -0.2347 +/- 0.0016 ✓
```

-0.1014 +/- 0.0003 ]	[	-0.0711 +/- 0.0013	-0.4616 +/- 0.0012 ✓
-0.1271 +/- 0.0004 ]	[	-0.0582 +/- 0.0013	-0.4861 +/- 0.0012 ✓
-0.1160 +/- 0.0004 ]	[	0.4803 +/- 0.0018	0.1510 +/- 0.0014 ✓
-0.0740 +/- 0.0003 ]	[	-0.0600 +/- 0.0018	0.1125 +/- 0.0017 ✓
-0.1117 +/- 0.0003 ]	[	-0.1454 +/- 0.0019	-0.2246 +/- 0.0016 ✓
-0.1797 +/- 0.0003 ]	[	-0.1296 +/- 0.0017	-0.3355 +/- 0.0015 ✓
-0.1655 +/- 0.0003 ]	[	-0.3103 +/- 0.0014	-0.4022 +/- 0.0013 ✓
-0.0540 +/- 0.0004]			

Translation vectors (centimeters):

	[	-13.6380 +/- 0.0446	-10.4004 +/- 0.0559 ✓
55.7622 +/- 0.1601 ]	[	-5.1725 +/- 0.0467	-9.3498 +/- 0.0576 ✓
57.8223 +/- 0.1476 ]	[	-7.4679 +/- 0.0425	-8.1966 +/- 0.0534 ✓
53.2881 +/- 0.1486 ]	[	-8.7785 +/- 0.0409	-8.6025 +/- 0.0495 ✓
49.0246 +/- 0.1370 ]	[	-8.7981 +/- 0.0405	-8.6671 +/- 0.0490 ✓
48.6547 +/- 0.1362 ]	[	-8.4420 +/- 0.0379	-8.7050 +/- 0.0458 ✓
45.7378 +/- 0.1313 ]	[	-8.6273 +/- 0.0375	-8.8364 +/- 0.0454 ✓
45.2955 +/- 0.1308 ]	[	-12.8375 +/- 0.0442	-11.3348 +/- 0.0544 ✓
54.5398 +/- 0.1610 ]	[	-16.4937 +/- 0.0434	-10.0643 +/- 0.0548 ✓
54.8031 +/- 0.1557 ]	[	-17.0995 +/- 0.0426	-9.3254 +/- 0.0508 ✓
50.7641 +/- 0.1502]	[-16.5994 +/- 0.0410	-9.5143 +/- 0.0491 ✓
48.8366 +/- 0.1441]	[-17.0707 +/- 0.0416	-11.0773 +/- 0.0502 ✓
50.0071 +/- 0.1485]			

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