

| Image | Algorithm | MCR(%) | RI(%) | PSNR(dB) | MSE | VI(pixel) | Time(s) | GCE(%) |
|----------|-----------|--------|-------|----------|----------|-----------|---------|--------|
| Sample 1 | K-means | 35.48 | 45.04 | 8.66 | 8.85E+03 | 2.63 | 7.68 | 2.96 |
| | GMM | 28.54 | 54.03 | 9.53 | 7.24E+03 | 2.24 | 0.12 | 2.94 |
| | FCM | 52.36 | 28.13 | 6.03 | 1.62E+04 | 3.41 | 15.29 | 2.99 |
| | FFCM | 16.75 | 72.29 | 9.50 | 7.30E+03 | 1.19 | 10.61 | 2.94 |
| | Student-T | 7.71 | 86.17 | 14.70 | 2.21E+03 | 0.81 | 5.26 | 2.98 |
| | Ours | 1.64 | 98.43 | 29.80 | 68.15 | 0.15 | 0.13 | 1.04 |
| Sample 2 | K-means | 49.17 | 37.91 | 4.19 | 2.48E+04 | 2.49 | 6.61 | 3.09 |
| | GMM | 19.13 | 67.81 | 11.47 | 4.63E+03 | 1.68 | 0.13 | 3.05 |
| | FCM | 51.07 | 37.13 | 3.98 | 2.60E+04 | 2.52 | 13.96 | 3.09 |
| | FFCM | 24.25 | 63.35 | 6.73 | 1.38E+04 | 1.26 | 17.50 | 3.01 |
| | Student-T | 46.93 | 39.46 | 4.40 | 2.36E+04 | 2.42 | 9.78 | 3.09 |
| | Ours | 2.12 | 97.50 | 23.71 | 276.49 | 0.24 | 0.22 | 2.28 |
| Sample 3 | K-means | 5.55 | 94.02 | 22.34 | 379.09 | 0.56 | 6.60 | 4.18 |
| | GMM | 20.73 | 70.26 | 14.75 | 2.18E+03 | 1.87 | 0.12 | 8.02 |
| | FCM | 5.56 | 94.01 | 22.25 | 387.01 | 0.56 | 16.49 | 4.19 |
| | FFCM | 9.90 | 88.01 | 15.93 | 1.66E+03 | 0.97 | 12.17 | 7.44 |
| | Student-T | 5.32 | 93.84 | 21.04 | 511.97 | 0.54 | 6.84 | 3.58 |
| | Ours | 5.45 | 93.77 | 21.29 | 482.98 | 0.56 | 0.25 | 3.96 |
| Sample 4 | K-means | 46.51 | 32.10 | 8.48 | 9.23E+03 | 3.29 | 9.06 | 2.68 |
| | GMM | 54.69 | 24.52 | 7.92 | 1.05E+04 | 3.69 | 0.34 | 2.69 |
| | FCM | 45.01 | 33.60 | 8.80 | 8.56E+03 | 3.22 | 31.28 | 2.67 |
| | FFCM | 39.97 | 40.27 | 7.02 | 1.29E+04 | 2.75 | 27.54 | 2.66 |
| | Student-T | 66.14 | 18.58 | 4.65 | 2.23E+04 | 3.99 | 131.48 | 2.70 |
| | Ours | 3.91 | 93.50 | 25.03 | 204.10 | 0.44 | 0.51 | 2.35 |
| Sample 5 | K-means | 43.96 | 34.69 | 8.86 | 8.45E+03 | 3.12 | 8.15 | 2.41 |
| | GMM | 52.93 | 25.89 | 8.32 | 9.57E+03 | 3.59 | 0.24 | 2.45 |
| | FCM | 28.10 | 54.26 | 11.04 | 5.11E+03 | 2.22 | 28.84 | 2.34 |
| | FFCM | 34.68 | 46.16 | 7.73 | 1.10E+04 | 2.48 | 24.16 | 2.41 |
| | Student-T | 66.66 | 19.98 | 2.93 | 3.31E+04 | 3.79 | 142.51 | 2.47 |
| | Ours | 3.47 | 95.00 | 25.20 | 196.33 | 0.36 | 0.46 | 1.48 |