Descriptions of IEEE CEC2014 functions (Search range: [−100, 100]D)

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| **No.** | **Class** | **Functions** | **Optimum** |
| **F1** | Unimodal | Rotated High Conditioned Elliptic Function | 100 |
| **F2** | Rotated Bent Cigar Function | 200 |
| **F3** | Rotated Discus Function | 300 |
| **F4** | Multimodal | Shifted and Rotated Rosenbrock's Function | 400 |
| **F5** | Shifted and Rotated Ackley's Function | 500 |
| **F6** | Shifted and Rotated Weierstrass Function | 600 |
| **F7** | Shifted and Rotated Griewank's Function | 700 |
| **F8** | Shifted Rastrigin's Function | 800 |
| **F9** | Hybrid | Shifted and Rotated Rastrigin's Function | 900 |
| **F10** | Shifted Schwefel's Function | 1000 |
| **F11** | Shifted and Rotated Schwefel's Function | 1100 |
| **F12** | Shifted and Rotated Katsuura Function | 1200 |
| **F13** | Shifted and Rotated HappyCat Function | 1300 |
| **F14** | Shifted and Rotated HGBat Function | 1400 |
| **F15** | Shifted and Rotated Expanded Griewank's plus Rosenbrock's Function | 1500 |
| **F16** | Shifted and Rotated Expanded Scaffer's F6 Function | 1600 |
| **F17** | Hybrid Function 1 (N = 3) | 1700 |
| **F18** | Hybrid Function 2 (N = 3) | 1800 |
| **F19** | Hybrid Function 3 (N = 4) | 1900 |
| **F20** | Hybrid Function 4 (N = 4) | 2000 |
| **F21** | Composition | Hybrid Function 5 (N = 5) | 2100 |
| **F22** | Hybrid Function 6 (N = 5) | 2200 |
| **F23** | Composition Function 1 (N = 5) | 2300 |
| **F24** | Composition Function 2 (N = 3) | 2400 |
| **F25** | Composition Function 3 (N = 3) | 2500 |
| **F26** | Composition Function 4 (N = 5) | 2600 |
| **F27** | Composition Function 5 (N = 5) | 2700 |
| **F28** | Composition Function 6 (N = 5) | 2800 |
| **F29** | Composition Function 7 (N =3) | 2900 |
| **F30** | Composition Function 8 (N = 3) | 3000 |