Table 1: Performance Results for Ackley_2D_a20_b0.2_c6.28e0 Problem

Optimizer	Mean Final Value	Std Dev	Best Value	Worst Value	Mean Func Evals	Success Rate (%)	Mean Time (s)
L-BFGS-Aggressive	3.74e0	3.90e-1	2.80e0	4.38e0	3083.9	20.0	0.018
Adam-AMSGrad	3.57e0	2.23e-5	3.57e0	3.57e0	753.0	0.0	0.017
QQN-CubicQuadraticInterpolation	3.44e0	4.86e-1	1.95e0	4.24e0	496.8	40.0	0.015
Adam	3.57e0	5.40e-5	3.57e0	3.57e0	301.6	0.0	0.006
L-BFGS-Conservative	3.57e0	1.87e-8	3.57e0	3.57e0	183.6	0.0	0.004
L-BFGS	3.20e0	4.86e-1	1.89e0	3.57e0	202.7	50.0	0.003
Adam-WeightDecay	3.58e0	8.83e-4	3.57e0	3.58e0	119.4	0.0	0.003
L-BFGS-Limited	3.37e0	7.29e-1	2.64e-1	3.57e0	176.7	15.0	0.002
QQN-GoldenSection	3.18e0	6.29e-1	1.58e0	3.57e0	137.5	35.0	0.002
GD-WeightDecay	3.59e0	2.07e-2	3.57e0	3.66e0	49.2	0.0	0.002
QQN-StrongWolfe	3.49e0	1.92e-1	3.00e0	3.57e0	62.8	15.0	0.001
Trust Region-Conservative	3.58e0	1.90e-2	3.57e0	3.64e0	171.2	0.0	0.001
Adam-Fast	3.62e0	6.41e-2	3.57e0	3.79e0	52.9	0.0	0.001
QQN-Bisection-1	2.85e0	1.05e0	1.12e-2	3.57e0	53.6	60.0	0.001
Adam-Robust	3.58e0	3.34e-3	3.57e0	3.59e0	42.9	0.0	0.001
GD-Nesterov	3.57e0	2.11e-3	3.57e0	3.58e0	30.6	0.0	0.001
QQN-Bisection-2	2.75e0	1.16e0	3.79e-1	3.57e0	36.5	40.0	0.001
L-BFGS-MoreThuente	3.34e0	4.09e-1	1.83e0	3.57e0	42.2	45.0	0.001
GD	3.57e0	1.91e-11	3.57e0	3.57e0	20.2	0.0	0.001
GD-AdaptiveMomentum	3.57e0	6.21e-11	3.57e0	3.57e0	15.2	0.0	0.001
GD-Momentum	3.70e0	6.22e-2	3.57e0	3.79e0	14.7	0.0	0.000
Trust Region-Precise	3.58e0	1.39e-2	3.58e0	3.64e0	39.5	0.0	0.000
Trust Region-Adaptive	3.66e0	2.13e-1	3.32e0	4.52e0	14.8	5.0	0.000
Trust Region-Aggressive	4.78e0	2.77e0	3.62e0	1.67e1	5.3	0.0	0.000
Trust Region-Standard	5.19e0	3.91e0	3.58e0	1.70e1	8.6	0.0	0.000