

| Security Category |      | Estimated security strength |                 |               |
|-------------------|------|-----------------------------|-----------------|---------------|
|                   |      | Core-SVP Q-cost             | Core-SVP C-cost | MATZOV C-cost |
| KITE-Q128         | RLWR | 120, usvp                   | 130, d_h        | 148, d_h      |
|                   | RLWE | 131, usvp                   | 145, usvp       | 158, bkw      |
| KITE-Q192         | RLWR | 192, d_h                    | 200, d_h        | 210, Bdd_mitm |
|                   | RLWE | 193, d_h                    | 201, d_h        | 213, Bdd_mitm |
| KITE-Q256         | RLWR | 246, d_h                    | 279, usvp       | 278, d_h      |
|                   | RLWE | 247, d_h                    | 263, d_h        | 279, d_h      |

| Correctness |         |      |     |
|-------------|---------|------|-----|
| Bit-Error   | DFR     | n    | q   |
| -30.95      | -128    | 512  | 256 |
|             | XE3-91  |      |     |
| -24.19      | -154    | 1024 | 256 |
|             | XE5-234 |      |     |
| -31.8       | -200    | 1024 | 256 |
|             | XE5-234 |      |     |

| Param      |     |                    |
|------------|-----|--------------------|
| hs         | hr  | e                  |
| 160        | 160 | Uniform[-1,0]=0.50 |
| Stdev=0.56 |     |                    |
| 84         | 84  | UniformMod(3)=0.82 |
| Stdev=0.27 |     |                    |
| 198        | 198 | Uniform[-1,0]=0.50 |
| Stdev=0.44 |     |                    |

eters

| e1   | e2           | p   | k1  |
|--|--------------|-----|-----|
| HWT(32)=0.25   | HWT(32)=0.25 | 64  | 64  |
| E1=0.25 /// $q \rightarrow k1 = [-1,0] = 0.5$ /// $e1+c_u=0.85$  |              |     |     |
| HWT(84)=0.29   | HWT(84)=0.29 | 64  | 64  |
| E1=0.29 /// $q \rightarrow k1 = [-1,1] = 0.82$ /// $e1+c_u=0.86$ |              |     |     |
| HWT(32)=0.18   | HWT(32)=0.18 | 128 | 128 |
| E1=0.18 /// $q \rightarrow k1 = [-1,0] = 0.5$ /// $e1+c_u=0.53$  |              |     |     |

|    | Bandwidth |      |       |
|----|-----------|------|-------|
| k2 | pk        | ct   | total |
| 64 | 416       | 768  | 1184  |
|    |           |      |       |
| 4  | 800       | 1024 | 1824  |
|    |           |      |       |
| 4  | 928       | 1152 | 2080  |
|    |           |      |       |
|    |           |      |       |

| Ref. KYBER         |                    |                  |      |
|--------------------|--------------------|------------------|------|
| Core-SVP<br>Q-cost | Core-SVP<br>C-cost | MATZOV<br>C-cost | DFR  |
| 107                | 118                | 140              | -139 |
|                    |                    |                  |      |
| 166                | 183                | 201              | -164 |
|                    |                    |                  |      |
| 232                | 256                | 270              | -164 |
|                    |                    |                  |      |

| Ref.NIST |
|----------|
| AESGATE  |
| 143      |
|          |
| 207      |
|          |
| 272      |
|          |