

FR to Ab class 1

| | | | | | | | | | |
|------------|------------|--------|-------|-------|--------|--------|--------|---------|--------|
| Wuhan-Hu-1 | 1.00 | 9.87 | 61.85 | 61.85 | 9.29 | 9.02 | 30.85 | 221.15 | 170.76 |
| Alpha | 9.87 | 1.00 | 47.32 | 47.32 | 20.07 | 19.78 | 19.10 | 192.31 | 146.44 |
| Beta | 61.85 | 47.32 | 1.00 | 1.00 | 76.89 | 76.46 | 37.77 | 98.42 | 67.28 |
| Gamma | 61.85 | 47.32 | 1.00 | 1.00 | 76.89 | 76.46 | 37.77 | 98.42 | 67.28 |
| Delta | 9.29 | 20.07 | 76.89 | 76.89 | 1.00 | 13.79 | 43.01 | 207.69 | 195.92 |
| Lambda | 9.02 | 19.78 | 76.46 | 76.46 | 13.79 | 1.00 | 42.65 | 250.13 | 195.19 |
| Mu | 30.85 | 19.10 | 37.77 | 37.77 | 43.01 | 42.65 | 1.00 | 173.36 | 106.93 |
| Omicron | 221.15 | 192.31 | 98.42 | 98.42 | 207.69 | 250.13 | 173.36 | 1.00 | 214.62 |
| PMS20 | 170.76 | 146.44 | 67.28 | 67.28 | 195.92 | 195.19 | 106.93 | 214.62 | 1.00 |
| | Wuhan-Hu-1 | Alpha | Beta | Gamma | Delta | Lambda | Mu | Omicron | PMS20 |

FR to Ab class 2

| | | | | | | | | | |
|------------|------------|--------|--------|--------|--------|--------|--------|---------|--------|
| Wuhan-Hu-1 | 1.00 | 1.26 | 62.14 | 62.14 | 25.55 | 69.12 | 71.64 | 143.80 | 123.70 |
| Alpha | 1.26 | 1.00 | 60.12 | 60.12 | 27.13 | 71.25 | 69.50 | 140.76 | 120.90 |
| Beta | 62.14 | 60.12 | 1.00 | 1.00 | 103.56 | 174.21 | 11.02 | 50.36 | 37.97 |
| Gamma | 62.14 | 60.12 | 1.00 | 1.00 | 103.56 | 174.21 | 11.02 | 50.36 | 37.97 |
| Delta | 25.55 | 27.13 | 103.56 | 103.56 | 1.00 | 38.45 | 115.49 | 197.80 | 180.84 |
| Lambda | 69.12 | 71.25 | 174.21 | 174.21 | 38.45 | 1.00 | 190.27 | 312.30 | 278.31 |
| Mu | 71.64 | 69.50 | 11.02 | 11.02 | 115.49 | 190.27 | 1.00 | 66.93 | 30.33 |
| Omicron | 143.80 | 140.76 | 50.36 | 50.36 | 197.80 | 312.30 | 66.93 | 1.00 | 101.48 |
| PMS20 | 123.70 | 120.90 | 37.97 | 37.97 | 180.84 | 278.31 | 30.33 | 101.48 | 1.00 |
| | Wuhan-Hu-1 | Alpha | Beta | Gamma | Delta | Lambda | Mu | Omicron | PMS20 |

FR to Ab class 3

| | | | | | | | | | |
|------------|------------|--------|--------|--------|--------|--------|--------|---------|--------|
| Wuhan-Hu-1 | 1.00 | 7.38 | 23.31 | 23.31 | 22.56 | 34.09 | 56.42 | 266.29 | 171.63 |
| Alpha | 7.38 | 1.00 | 14.83 | 14.83 | 31.61 | 43.99 | 45.66 | 241.10 | 152.95 |
| Beta | 23.31 | 14.83 | 1.00 | 1.00 | 51.14 | 65.35 | 31.61 | 197.04 | 120.27 |
| Gamma | 23.31 | 14.83 | 1.00 | 1.00 | 51.14 | 65.35 | 31.61 | 197.04 | 120.27 |
| Delta | 22.56 | 31.61 | 51.14 | 51.14 | 1.00 | 15.32 | 91.71 | 325.92 | 232.91 |
| Lambda | 34.09 | 43.99 | 65.35 | 65.35 | 15.32 | 1.00 | 109.74 | 391.16 | 264.22 |
| Mu | 56.42 | 45.66 | 31.61 | 31.61 | 91.71 | 109.74 | 1.00 | 290.92 | 73.65 |
| Omicron | 266.29 | 241.10 | 197.04 | 197.04 | 325.92 | 391.16 | 290.92 | 1.00 | 378.85 |
| PMS20 | 171.63 | 152.95 | 120.27 | 120.27 | 232.91 | 264.22 | 73.65 | 378.85 | 1.00 |
| | Wuhan-Hu-1 | Alpha | Beta | Gamma | Delta | Lambda | Mu | Omicron | PMS20 |

FR to Ab class 4

| | | | | | | | | | |
|------------|------------|--------|--------|--------|--------|--------|--------|---------|--------|
| Wuhan-Hu-1 | 1.00 | 13.31 | 34.45 | 34.45 | 5.83 | 6.24 | 27.07 | 202.09 | 74.63 |
| Alpha | 13.31 | 1.00 | 18.66 | 18.66 | 19.91 | 20.38 | 12.14 | 166.61 | 54.12 |
| Beta | 34.45 | 18.66 | 1.00 | 1.00 | 42.29 | 42.85 | 14.74 | 124.69 | 29.88 |
| Gamma | 34.45 | 18.66 | 1.00 | 1.00 | 42.29 | 42.85 | 14.74 | 124.69 | 29.88 |
| Delta | 5.83 | 19.91 | 42.29 | 42.29 | 1.00 | 5.73 | 34.48 | 203.57 | 84.81 |
| Lambda | 6.24 | 20.38 | 42.85 | 42.85 | 5.73 | 1.00 | 35.00 | 220.96 | 85.53 |
| Mu | 27.07 | 12.14 | 14.74 | 14.74 | 34.48 | 35.00 | 1.00 | 157.81 | 37.43 |
| Omicron | 202.09 | 166.61 | 124.69 | 124.69 | 203.57 | 220.96 | 157.81 | 1.00 | 142.82 |
| PMS20 | 74.63 | 54.12 | 29.88 | 29.88 | 84.81 | 85.53 | 37.43 | 142.82 | 1.00 |
| | Wuhan-Hu-1 | Alpha | Beta | Gamma | Delta | Lambda | Mu | Omicron | PMS20 |