

**Abfluss**



**Hintere Frenke - Bubendorf, Morgental**

Stationsnummer: BL 4309

Einzugsgebiet: 38.20 km<sup>2</sup>

Höhe Station: 352.00 m ü. M.

**Kanton Basel-Landschaft**

Tiefbauamt, Geschäftsbereich Wasserbau

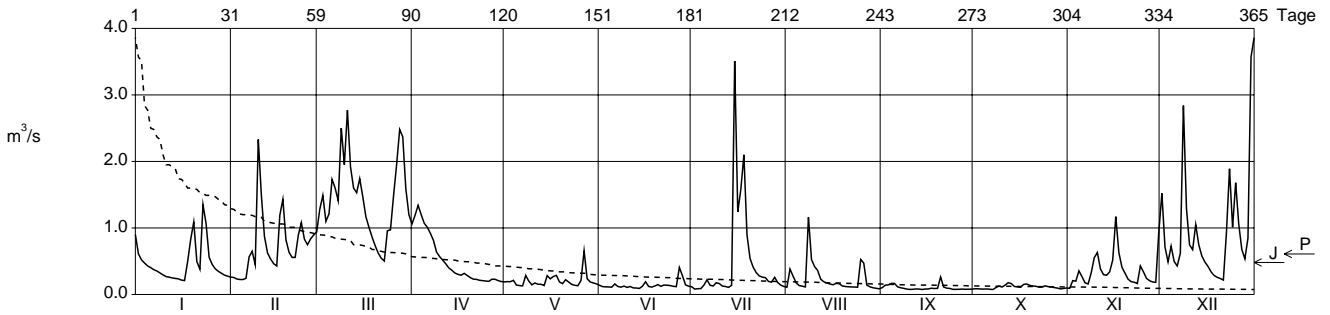
Koordinaten: 622 270 / 256 550

Mittlere Höhe: 603.00 m ü. M.

| 2009              |             | Januar      | Februar     | März        | April       | Mai         | Juni          | Juli        | August       | September     | Oktober     | November    | Dezember                   |       |    |
|-------------------|-------------|-------------|-------------|-------------|-------------|-------------|---------------|-------------|--------------|---------------|-------------|-------------|----------------------------|-------|----|
| Tagesmittel       | 1           | 0.902       | 0.261       | 0.940       | 1.06        | 0.189       | 0.139         | 0.116       | 0.109        | 0.102         | 0.085       | 0.092       | 1.52                       | 1     |    |
|                   | 2           | 0.610       | 0.256       | 1.28        | 1.19        | 0.193       | 0.118         | 0.081 -     | 0.382        | 0.140         | 0.086       | 0.208       | 0.715                      | 2     |    |
|                   | 3           | 0.520       | 0.233       | 1.49        | 1.34 +      | 0.192       | 0.115         | 0.087       | 0.275        | 0.144         | 0.082       | 0.200       | 0.491                      | 3     |    |
|                   | 4           | 0.472       | 0.225 -     | 1.10        | 1.20        | 0.213       | 0.113         | 0.088       | 0.175        | 0.168         | 0.081       | 0.355       | 0.726                      | 4     |    |
|                   | 5           | 0.429       | 0.225 -     | 1.21        | 1.07        | 0.141       | 0.110         | 0.141       | 0.134        | 0.166         | 0.083       | 0.268       | 0.494                      | 5     |    |
|                   | 6           | 0.403       | 0.243       | 1.73        | 1.01        | 0.134       | 0.158         | 0.221       | 0.124        | 0.115         | 0.079       | 0.158       | 0.429                      | 6     |    |
|                   | 7           | 0.373       | 0.564       | 1.60        | 0.919       | 0.129 -     | 0.120         | 0.138       | 0.114        | 0.101         | 0.074 -     | 0.158       | 0.620                      | 7     |    |
|                   | 8           | 0.353       | 0.649       | 1.41        | 0.811       | 0.286       | 0.110         | 0.128       | 1.16 +       | 0.092         | 0.104       | 0.325       | 2.84                       | 8     |    |
|                   | 9           | 0.324       | 0.449       | 2.50        | 0.637       | 0.202       | 0.126         | 0.176       | 0.523        | 0.081         | 0.126       | 0.554       | 1.29                       | 9     |    |
|                   | 10          | 0.294       | 2.33 +      | 1.95        | 0.569       | 0.145       | 0.106         | 0.164       | 0.420        | 0.076         | 0.112       | 0.631       | 0.746                      | 10    |    |
| m <sup>3</sup> /s | 11          | 0.269       | 1.49        | 2.77 +      | 0.516       | 0.173       | 0.120         | 0.126       | 0.360        | 0.078         | 0.141       | 0.385       | 0.674                      | 11    |    |
|                   | 12          | 0.260       | 0.873       | 1.92        | 0.461       | 0.154       | 0.099         | 0.120       | 0.229        | 0.083         | 0.177+      | 0.298       | 1.05                       | 12    |    |
|                   | 13          | 0.249       | 0.625       | 1.60        | 0.399       | 0.153       | 0.097         | 0.107       | 0.191        | 0.081         | 0.164       | 0.289       | 0.748                      | 13    |    |
|                   | 14          | 0.241       | 0.533       | 1.53        | 0.363       | 0.135       | 0.091 -       | 0.137       | 0.173        | 0.075 -       | 0.121       | 0.339       | 0.579                      | 14    |    |
|                   | 15          | 0.235       | 0.463       | 1.74        | 0.322       | 0.283       | 0.124         | 3.51 +      | 0.157        | 0.082         | 0.113       | 0.518       | 0.487                      | 15    |    |
|                   | 16          | 0.216       | 0.429       | 1.47        | 0.302       | 0.235       | 0.191         | 1.24        | 0.146        | 0.083         | 0.108       | 1.17 +      | 0.422                      | 16    |    |
|                   | 17          | 0.209 -     | 1.19        | 0.290       | 0.270       | 0.121       | 0.158         | 0.167       | 0.094        | 0.094         | 0.151       | 0.630       | 0.340                      | 17    |    |
|                   | 18          | 0.492       | 1.43        | 1.01        | 0.318       | 0.288       | 0.111         | 2.10        | 0.163        | 0.090         | 0.158       | 0.410       | 0.285                      | 18    |    |
|                   | 19          | 0.827       | 0.821       | 0.866       | 0.285       | 0.187       | 0.127         | 0.897       | 0.128        | 0.092         | 0.137       | 0.320       | 0.258                      | 19    |    |
|                   | 20          | 1.09        | 0.635       | 0.736       | 0.253       | 0.163       | 0.148         | 0.542       | 0.120        | 0.262+        | 0.127       | 0.230       | 0.240                      | 20    |    |
| + Maximum         | 21          | 0.497       | 0.557       | 0.623       | 0.230       | 0.123       | 0.123         | 0.411       | 0.116        | 0.112         | 0.123       | 0.193       | 0.217 -                    | 21    |    |
|                   | 22          | 0.380       | 0.557       | 0.545       | 0.227       | 0.186       | 0.142         | 0.329       | 0.113        | 0.095         | 0.111       | 0.184       | 0.930                      | 22    |    |
|                   | 23          | 1.35 +      | 0.888       | 0.503 -     | 0.213       | 0.151       | 0.139         | 0.279       | 0.112        | 0.091         | 0.111       | 0.165       | 1.89                       | 23    |    |
|                   | 24          | 1.07        | 1.08        | 0.958       | 0.208       | 0.138       | 0.134         | 0.261       | 0.109        | 0.077         | 0.130       | 0.429       | 1.01                       | 24    |    |
|                   | 25          | 0.559       | 0.832       | 0.971       | 0.202       | 0.132       | 0.123         | 0.253       | 0.526        | 0.077         | 0.118       | 0.340       | 1.68                       | 25    |    |
|                   | - Minimum   | 26          | 0.452       | 0.748       | 1.48        | 0.197       | 0.212         | 0.118       | 0.196        | 0.471         | 0.078       | 0.113       | 0.241                      | 1.06  | 26 |
|                   |             | 27          | 0.386       | 0.834       | 1.95        | 0.229       | 0.656+        | 0.406+      | 0.186        | 0.141         | 0.081       | 0.104       | 0.207                      | 0.677 | 27 |
|                   |             | 28          | 0.348       | 0.894       | 2.48        | 0.229       | 0.237         | 0.282       | 0.258        | 0.115         | 0.078       | 0.096       | 0.188                      | 0.536 | 28 |
|                   |             | 29          | 0.319       |             | 2.37        | 0.209       | 0.189         | 0.145       | 0.180        | 0.101         | 0.079       | 0.084       | 0.182                      | 0.845 | 29 |
|                   |             | 30          | 0.291       |             | 1.59        | 0.195 -     | 0.173         | 0.124       | 0.141        | 0.093         | 0.080       | 0.090       | 0.944                      | 3.57  | 30 |
| 31                |             | 0.276       |             | 1.20        |             | 0.160       |               | 0.120       | 0.085 -      |               | 0.098       |             | 3.86 +                     | 31    |    |
| Monatsumme        | 0.474       | 0.726       | 1.44 +      | 0.515       | 0.204       | 0.139       | 0.462         | 0.233       | 0.102-       | 0.112         | 0.354       | 1.01        | m <sup>3</sup> /s          |       |    |
| Maximum (Spitze)  | 3.18<br>23. | 3.56<br>10. | 3.89<br>28. | 1.41<br>03. | 2.00<br>17. | 3.92<br>27. | 7.10 +<br>15. | 4.78<br>25. | 0.657<br>20. | 0.553-<br>12. | 2.17<br>30. | 6.19<br>31. | m <sup>3</sup> /s<br>Datum |       |    |

**Jahresmittel** 0.481 m<sup>3</sup>/s

— Ganglinie der Tagesmittel    - - - - Dauerlinie der Tagesmittel (erreicht oder überschritten)    ← J Jahresmittel (2009)    ← P Periodenmittel (1984 - 2009)



| Periode                | 1984 - 2009 (26 Jahre) |               |               |                |               |               |               |                |                |               |               |               |                           |
|------------------------|------------------------|---------------|---------------|----------------|---------------|---------------|---------------|----------------|----------------|---------------|---------------|---------------|---------------------------|
| Monatsumme             | 0.747                  | 0.720         | 0.938+        | 0.911          | 0.652         | 0.530         | 0.364         | 0.280-         | 0.340          | 0.450         | 0.617         | 0.768         | m <sup>3</sup> /s         |
| Maximum (Spitze)       | 8.53 -<br>1995         | 14.8<br>1999  | 17.6<br>2001  | 21.1<br>2006   | 24.9<br>1999  | 19.6<br>1990  | 18.1<br>1997  | 30.1 +<br>2007 | 15.3<br>2006   | 10.5<br>2002  | 16.0<br>1995  | 12.0<br>1997  | m <sup>3</sup> /s<br>Jahr |
| Minimum (Momentanwert) | 0.095<br>1989          | 0.084<br>1989 | 0.093<br>1986 | 0.112+<br>1996 | 0.098<br>1989 | 0.053<br>1989 | 0.046<br>1984 | 0.020<br>1984  | 0.016-<br>1984 | 0.051<br>1985 | 0.060<br>1985 | 0.025<br>1986 | m <sup>3</sup> /s<br>Jahr |

**Grösstes Jahresmittel** 0.952 (1999) m<sup>3</sup>/s    **Periodenmittel** 0.609 m<sup>3</sup>/s    **Kleinstes Jahresmittel** 0.283 (1989) m<sup>3</sup>/s

| Dauer der Tagesmittelwerte des Abflusses (erreicht oder überschritten) |       |       |       |       |       |       |       |       |       |       |       |       |                   |
|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------------------|
| Tage   | 1     | 3     | 6     | 9     | 18    | 36    | 55    | 73    | 91    | 114   | 137   | 160   |                   |
| 2009   | 3.86  | 3.51  | 2.50  | 2.33  | 1.60  | 1.20  | 0.958 | 0.748 | 0.569 | 0.463 | 0.353 | 0.282 | m <sup>3</sup> /s |
| 1984 - 2009  | 5.29  | 3.73  | 3.06  | 2.69  | 2.07  | 1.49  | 1.13  | 0.894 | 0.732 | 0.585 | 0.477 | 0.393 | m <sup>3</sup> /s |
| Tage   | 182   | 205   | 228   | 251   | 274   | 292   | 310   | 329   | 347   | 356   | 362   | 365   |                   |
| 2009   | 0.235 | 0.202 | 0.175 | 0.145 | 0.128 | 0.120 | 0.111 | 0.095 | 0.083 | 0.079 | 0.077 | 0.074 | m <sup>3</sup> /s |
| 1984 - 2009  | 0.330 | 0.277 | 0.233 | 0.195 | 0.170 | 0.151 | 0.132 | 0.113 | 0.092 | 0.078 | 0.066 | 0.024 | m <sup>3</sup> /s |

**Wasserstand**



**Hintere Frenke - Bubendorf, Morgental**

Stationsnummer: BL 4309

Einzugsgebiet: 38.20 km<sup>2</sup>

Höhe Station: 352.00 m ü. M.

**Kanton Basel-Landschaft**

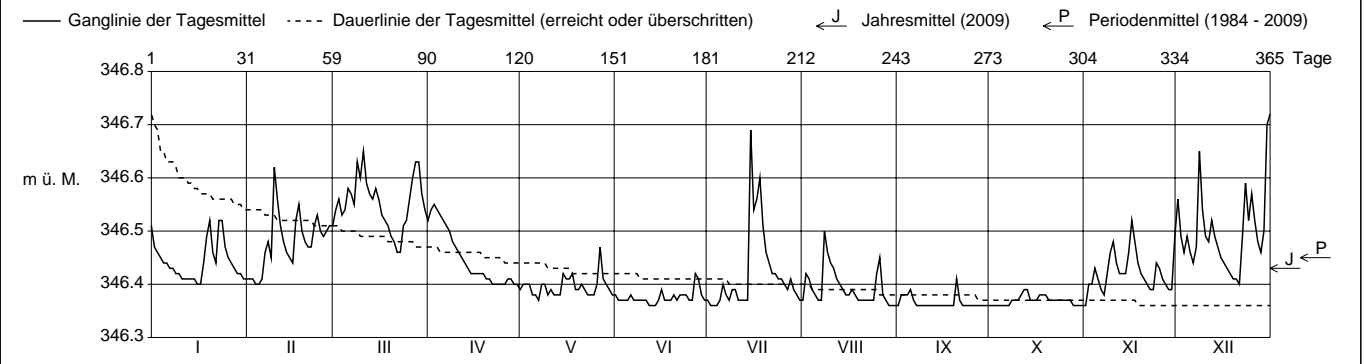
**Tiefbauamt, Geschäftsbereich Wasserbau**

Koordinaten: 622 270 / 256 550

Mittlere Höhe: 603.00 m ü. M.

| 2009                    | Januar        | Februar       | März          | April         | Mai           | Juni          | Juli            | August        | September     | Oktober         | November      | Dezember      |                  |
|-------------------------|---------------|---------------|---------------|---------------|---------------|---------------|-----------------|---------------|---------------|-----------------|---------------|---------------|------------------|
| <b>Tagesmittel</b>      | 1 346.51      | 346.41        | 346.51        | 346.52        | 346.39        | 346.38        | 346.37          | 346.37        | 346.36 -      | 346.36 -        | 346.36 -      | 346.56        | 1                |
|                         | 2 346.47      | 346.41        | 346.54        | 346.54        | 346.40        | 346.37        | 346.36 -        | 346.42        | 346.38        | 346.36 -        | 346.40        | 346.49        | 2                |
|                         | 3 346.46      | 346.41        | 346.56        | 346.55 +      | 346.40        | 346.37        | 346.36 -        | 346.41        | 346.38        | 346.36 -        | 346.40        | 346.46        | 3                |
|                         | 4 346.45      | 346.40        | 346.53        | 346.54        | 346.40        | 346.37        | 346.36 -        | 346.39        | 346.38        | 346.36 -        | 346.43        | 346.49        | 4                |
|                         | 5 346.44      | 346.40        | 346.54        | 346.53        | 346.38        | 346.37        | 346.37          | 346.38        | 346.39        | 346.36 -        | 346.41        | 346.46        | 5                |
|                         | 6 346.44      | 346.41        | 346.58        | 346.52        | 346.38        | 346.38        | 346.40          | 346.37        | 346.37        | 346.36 -        | 346.39        | 346.44        | 6                |
|                         | 7 346.43      | 346.46        | 346.57        | 346.51        | 346.37 -      | 346.37        | 346.38          | 346.37        | 346.36 -      | 346.36 -        | 346.38        | 346.47        | 7                |
|                         | 8 346.43      | 346.48        | 346.55        | 346.50        | 346.40        | 346.37        | 346.37          | 346.50 +      | 346.36 -      | 346.37          | 346.42        | 346.65        | 8                |
|                         | 9 346.42      | 346.45        | 346.63        | 346.48        | 346.40        | 346.37        | 346.39          | 346.46        | 346.36 -      | 346.37          | 346.46        | 346.54        | 9                |
|                         | 10 346.42     | 346.62 +      | 346.60        | 346.47        | 346.38        | 346.37        | 346.39          | 346.44        | 346.36 -      | 346.37          | 346.48        | 346.49        | 10               |
|                         | 11 346.41     | 346.56        | 346.65 +      | 346.46        | 346.39        | 346.37        | 346.37          | 346.43        | 346.36 -      | 346.38          | 346.44        | 346.48        | 11               |
|                         | 12 346.41     | 346.51        | 346.59        | 346.45        | 346.38        | 346.36 -      | 346.37          | 346.41        | 346.36 -      | 346.39 +        | 346.42        | 346.52        | 12               |
|                         | 13 346.41     | 346.48        | 346.57        | 346.44        | 346.38        | 346.36 -      | 346.37          | 346.40        | 346.36 -      | 346.39 +        | 346.42        | 346.49        | 13               |
| m ü. M.                 | 14 346.41     | 346.46        | 346.56        | 346.43        | 346.38        | 346.36 -      | 346.37          | 346.39        | 346.36 -      | 346.37          | 346.42        | 346.47        | 14               |
|                         | 15 346.41     | 346.45        | 346.58        | 346.42        | 346.42        | 346.37        | 346.69 +        | 346.38        | 346.36 -      | 346.37          | 346.46        | 346.45        | 15               |
|                         | 16 346.40 -   | 346.44        | 346.56        | 346.42        | 346.41        | 346.39        | 346.54          | 346.38        | 346.36 -      | 346.37          | 346.52 +      | 346.44        | 16               |
|                         | 17 346.40 -   | 346.52        | 346.53        | 346.42        | 346.41        | 346.37        | 346.56          | 346.39        | 346.36 -      | 346.38          | 346.48        | 346.43        | 17               |
|                         | 18 346.44     | 346.51        | 346.52        | 346.42        | 346.42        | 346.37        | 346.60          | 346.38        | 346.36 -      | 346.38          | 346.44        | 346.42        | 18               |
|                         | 19 346.49     | 346.50        | 346.51        | 346.42        | 346.39        | 346.37        | 346.51          | 346.37        | 346.36 -      | 346.38          | 346.42        | 346.41        | 19               |
|                         | 20 346.52 +   | 346.48        | 346.49        | 346.41        | 346.39        | 346.38        | 346.46          | 346.37        | 346.41 +      | 346.37          | 346.41        | 346.41        | 20               |
|                         | 21 346.46     | 346.47        | 346.48        | 346.41        | 346.40        | 346.37        | 346.44          | 346.37        | 346.36 -      | 346.37          | 346.40        | 346.40        | 21               |
|                         | 22 346.44     | 346.47        | 346.46 -      | 346.40 -      | 346.39        | 346.38        | 346.42          | 346.37        | 346.36 -      | 346.37          | 346.39        | 346.49        | 22               |
| + Maximum               | 23 346.52 +   | 346.51        | 346.46 -      | 346.40 -      | 346.38        | 346.38        | 346.42          | 346.37        | 346.36 -      | 346.37          | 346.39        | 346.59        | 23               |
|                         | 24 346.52 +   | 346.53        | 346.51        | 346.40 -      | 346.38        | 346.38        | 346.41          | 346.37        | 346.36 -      | 346.37          | 346.44        | 346.52        | 24               |
|                         | 25 346.47     | 346.50        | 346.52        | 346.40 -      | 346.38        | 346.37        | 346.41          | 346.42        | 346.36 -      | 346.37          | 346.43        | 346.57        | 25               |
| - Minimum               | 26 346.45     | 346.49        | 346.56        | 346.40 -      | 346.40        | 346.37        | 346.40          | 346.45        | 346.36 -      | 346.37          | 346.41        | 346.52        | 26               |
|                         | 27 346.44     | 346.50        | 346.60        | 346.41        | 346.47 +      | 346.42 +      | 346.39          | 346.38        | 346.36 -      | 346.37          | 346.40        | 346.48        | 27               |
|                         | 28 346.43     | 346.51        | 346.63        | 346.41        | 346.41        | 346.41        | 346.41          | 346.37        | 346.36 -      | 346.36 -        | 346.39        | 346.46        | 28               |
|                         | 29 346.42     |               | 346.63        | 346.40 -      | 346.40        | 346.38        | 346.39          | 346.36 -      | 346.36 -      | 346.36 -        | 346.39        | 346.50        | 29               |
|                         | 30 346.42     |               | 346.57        | 346.40 -      | 346.39        | 346.37        | 346.38          | 346.36 -      | 346.36 -      | 346.36 -        | 346.49        | 346.70        | 30               |
|                         | 31 346.41     |               | 346.54        |               | 346.38        | 346.37        | 346.37          | 346.36 -      | 346.36 -      | 346.36 -        |               | 346.72 +      | 31               |
| <b>Monatsmittel</b>     | 346.44        | 346.48        | 346.55 +      | 346.45        | 346.40        | 346.37        | 346.42          | 346.39        | 346.36 -      | 346.37          | 346.42        | 346.50        | m ü. M.          |
| <b>Maximum (Spitze)</b> | 346.68<br>23. | 346.70<br>10. | 346.73<br>28. | 346.55<br>03. | 346.60<br>17. | 346.73<br>27. | 346.90 +<br>15. | 346.78<br>25. | 346.48<br>20. | 346.46 -<br>12. | 346.61<br>30. | 346.86<br>31. | m ü. M.<br>Datum |

**Jahreswerte in m ü. M.** Mittel 346.43 Maximum 346.72 (31.12.2009) Minimum 346.36 (10.09.2009) Spitze 346.90 (15.07.2009)



| Periode                       | 1984 - 2009 (26 Jahre) |                |                  |                  |                  |                |                |                  |                  |                |                |                |                 |
|-------------------------------|------------------------|----------------|------------------|------------------|------------------|----------------|----------------|------------------|------------------|----------------|----------------|----------------|-----------------|
| <b>Monatsmittel</b>           | 346.47                 | 346.47         | 346.50 +         | 346.49           | 346.46           | 346.44         | 346.41         | 346.40 -         | 346.41           | 346.43         | 346.45         | 346.47         | m ü. M.         |
| <b>Maximum (Spitze)</b>       | 346.93 -<br>1986       | 347.14<br>1999 | 347.22<br>2001   | 347.43<br>2006   | 347.38<br>1999   | 347.29<br>1990 | 347.23<br>1997 | 347.70 +<br>2007 | 347.23<br>2006   | 347.00<br>2002 | 347.17<br>1995 | 347.09<br>2006 | m ü. M.<br>Jahr |
| <b>Minimum (Momentanwert)</b> | 346.37 +<br>1989       | 346.36<br>1989 | 346.37 +<br>1986 | 346.37 +<br>1996 | 346.37 +<br>2007 | 346.34<br>1989 | 346.34<br>1984 | 346.32 -<br>1984 | 346.32 -<br>1984 | 346.34<br>1985 | 346.35<br>1985 | 346.33<br>1986 | m ü. M.<br>Jahr |

**Grösstes Jahresmittel** 346.49 (1999) m ü. M. **Periodenmittel** 346.45 m ü. M. **Kleinste Jahresmittel** 346.41 (1989) m ü. M.

| <b>Dauer der Tagesmittelwerte des Wasserstandes (erreicht oder überschritten)</b> |        |        |        |        |        |        |        |        |        |        |        |        |         |
|---|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|
| Tage  | 1      | 3      | 6      | 9      | 18     | 36     | 55     | 73     | 91     | 114    | 137    | 160    |         |
| 2009  | 346.72 | 346.69 | 346.63 | 346.62 | 346.57 | 346.54 | 346.51 | 346.49 | 346.47 | 346.45 | 346.43 | 346.41 | m ü. M. |
| 1984 - 2009   | 346.79 | 346.70 | 346.66 | 346.64 | 346.60 | 346.56 | 346.53 | 346.51 | 346.49 | 346.47 | 346.45 | 346.44 | m ü. M. |
| <b>Tage</b>   | 182    | 205    | 228    | 251    | 274    | 292    | 310    | 329    | 347    | 356    | 362    | 365    |         |
| 2009  | 346.41 | 346.40 | 346.39 | 346.38 | 346.37 | 346.37 | 346.37 | 346.36 | 346.36 | 346.36 | 346.36 | 346.36 | m ü. M. |
| 1984 - 2009   | 346.43 | 346.42 | 346.41 | 346.40 | 346.39 | 346.39 | 346.38 | 346.37 | 346.36 | 346.36 | 346.35 | 346.33 | m ü. M. |