# Assumptions for Peak Run-off Calculation

Rainfall Intensity Duration Frequency (IDF) Table generated from GPM IMERG (2000–2025) dataset.  
Site: Sihanoukville  
Fitted with Gumbel distribution using annual maxima series.

Assumed constant 'b': 0.23  
Assumed constant 'n': 0.86

Distribution of 24hrs Rainfall (mm)

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Duration (min) | Decimal (hours) | Rainfall Ratio RRt | 2.33 yrs Rainfall (mm) | 5 yrs Rainfall (mm) | 10 yrs Rainfall (mm) | 25 yrs Rainfall (mm) | 50 yrs Rainfall (mm) | 100 yrs Rainfall (mm) |
| 5 | 0.08 | nan | nan | nan | nan | nan | nan | nan |
| 10 | 0.17 | nan | nan | nan | nan | nan | nan | nan |
| 15 | 0.25 | nan | nan | nan | nan | nan | nan | nan |
| 30 | 0.50 | 0.13 | 33.2 | 38.8 | 43.4 | 49.1 | 53.4 | 57.6 |
| 60 | 1.00 | 0.21 | 54.2 | 63.9 | 71.8 | 81.8 | 89.2 | 96.6 |
| 120 | 2.00 | 0.34 | 86.7 | 104.1 | 118.3 | 136.2 | 149.5 | 162.7 |
| 180 | 3.00 | 0.43 | 109.6 | 131.2 | 148.8 | 171.1 | 187.6 | 204.0 |
| 240 | 4.00 | 0.50 | 126.5 | 150.3 | 169.7 | 194.2 | 212.4 | 230.4 |
| 480 | 8.00 | 0.67 | 169.0 | 196.1 | 218.1 | 246.0 | 266.7 | 287.2 |
| 720 | 12.00 | 0.76 | 192.2 | 221.4 | 245.2 | 275.3 | 297.6 | 319.7 |
| 1440 | 24.00 | 1.00 | 252.7 | 290.2 | 320.7 | 359.3 | 388.0 | 416.4 |

Design Rainfall Intensities (mm/h)

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Duration (min) | Decimal (hours) | Rainfall Ratio RRt | 2.33 yrs Intensity (mm/h) | 5 yrs Intensity (mm/h) | 10 yrs Intensity (mm/h) | 25 yrs Intensity (mm/h) | 50 yrs Intensity (mm/h) | 100 yrs Intensity (mm/h) |
| 5 | 0.08 | nan | nan | nan | nan | nan | nan | nan |
| 10 | 0.17 | nan | nan | nan | nan | nan | nan | nan |
| 15 | 0.25 | nan | nan | nan | nan | nan | nan | nan |
| 30 | 0.50 | 0.13 | 66.4 | 77.6 | 86.7 | 98.3 | 106.8 | 115.3 |
| 60 | 1.00 | 0.21 | 54.2 | 63.9 | 71.8 | 81.8 | 89.2 | 96.6 |
| 120 | 2.00 | 0.34 | 43.4 | 52.1 | 59.2 | 68.1 | 74.8 | 81.4 |
| 180 | 3.00 | 0.43 | 36.5 | 43.7 | 49.6 | 57.0 | 62.5 | 68.0 |
| 240 | 4.00 | 0.50 | 31.6 | 37.6 | 42.4 | 48.5 | 53.1 | 57.6 |
| 480 | 8.00 | 0.67 | 21.1 | 24.5 | 27.3 | 30.8 | 33.3 | 35.9 |
| 720 | 12.00 | 0.76 | 16.0 | 18.5 | 20.4 | 22.9 | 24.8 | 26.6 |
| 1440 | 24.00 | 1.00 | 10.5 | 12.1 | 13.4 | 15.0 | 16.2 | 17.3 |