Delhi at AQI 500

A calculation of station-day indices from the saved hourly record. The current window ends at 16:00 IST. This is a station record, not a count of city-wide AQI days.

Delhi needs concentrations beside the index, and a clear account of the periods in which an index cannot be calculated.

The record	What it means
1,348	Eligible station-days displayed as 500 across the assessed period.
61	Such station-days in 2026, through 17 October.
1,339	Station-days with an unrounded formula result strictly above 500.

The same display value can cover different measured concentrations. Of the 1,348 station-days displayed as 500, 1,339 exceed 500 before the display cap and rounding. Another 9 reach the displayed value through rounding. These cases must not be described as identical.

A station-day means one station on one reporting date. Several stations on the same date contribute several station-days. The figure does not mean that Delhi as a whole had an AQI of 500 on that many days.

A missing or unqualified index is not a clean-air reading. The tables retain the number of eligible station-days and identify the January to August 2022 period as unavailable for this multi-pollutant calculation.

The demand
Publish the concentration behind a capped index and explain each substantial gap in the station record. Neither the cap nor a missing value should conceal what the record can establish.

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Source: CPCB and DPCC station observations via CREA, 2021 to 17 October 2026.

What a capped index means

A numerical display limit is different from the range of a concentration instrument.

CPCB describes an index scale running to 500. Its original calculator has severe-band formulas that continue arithmetically above 500. For example, a PM2.5 concentration of 600 micrograms per cubic metre gives an uncapped formula result of about 669.2. A separate display cap reduces that result to 500; it does not erase the measured concentration.

Pollutant	Severe-band calculator formula	Concentration giving 500
PM2.5	400 + (C - 250) x 100 / 130	380 micrograms per cubic metre
PM10	400 + (C - 430) x 100 / 80	510 micrograms per cubic metre

Here C is the eligible 24-hour mean concentration. The calculation keeps the uncapped arithmetic, applies the stated 500 display cap, and rounds the displayed index half up to the nearest integer. The underlying measurement remains available.

Across the full assessed period	Station-days
Display equals 500 after cap and rounding	1,348
Unrounded formula result is at least 500	1,339
Unrounded formula result is strictly above 500	1,339

Rounding can produce a displayed 500 just below an unrounded value of 500. It is therefore wrong to infer that every displayed 500 proves a concentration above the exact breakpoint. It is also wrong to interpret a concentration ratio as the same multiple of health harm.

PM10 and PM2.5 describe particle-size fractions. A high particle reading alone does not identify construction, traffic, burning or another emissions source. Source attribution requires additional evidence.

Source: CPCB and DPCC station observations via CREA, 2021 to 17 October 2026.

Totals need their denominators

An eligible station-day has enough observations for the stated multi-pollutant index. A zero and an unavailable value have different meanings.

Year	Eligible station-days	Dates with eligible AQI	Display 500	Strictly above 500	10:00-window 500
2021	11,624	334 / 365	274	273	287
2022	2,658	73 / 365	118	118	112
2023	13,208	365 / 365	326	321	323
2024	13,869	366 / 366	377	376	363
2025	14,008	365 / 365	192	191	199
2026 to 17 Oct	12,330	284 / 290	61	60	53

The last column changes only the reporting window to the 24 hours ending at 10:00 IST, using the same source checks and formula. These are sensitivity results. They are not interchangeable with the primary 16:00 series.

The same January to August dates

Year	Eligible station-days	Displayed 500
2021	8,570	135
2022	0	Not calculable
2023	8,688	52
2024	9,235	56
2025	9,235	26
2026	10,190	61

The 2022 archive contains PM2.5 and PM10 observations during these months, but not enough qualifying AQI pollutants for the required three-pollutant index. This table cannot support a claim that no station reached 500 in that period. PM observations remain evidence even when the combined index is unavailable.

Even identical calendar windows do not remove differences in station coverage, pollutants or eligible dates. These totals are not a controlled trend in pollution. The 2026 full-period column ends on 17 October; it must not be compared as a full calendar year.

Source: CPCB and DPCC station observations via CREA, 2021 to 17 October 2026.

Stations and months

One station on one date is one station-day. Counts below refer to the primary 16:00 IST series.

Station	Eligible days	Displayed 500	Strictly above 500
Anand Vihar	1,637	158	158
Wazirpur	1,728	114	114
Jahangirpuri	1,716	106	105
Mundka	1,742	80	80
Rohini	1,765	58	56
Shadipur	1,753	54	54
Vivek Vihar	1,719	53	53
Chandni Chowk	1,260	49	49
Ashok Vihar	1,730	48	48
Dwarka-Sector 8	1,766	48	47

These are the ten stations with the largest displayed-500 counts in the assessed record. Different numbers of eligible days limit a direct ranking of their air quality. The complete station table is available with the report.

Month, all assessed years pooled	Displayed-500 station-days
January	274
February	25
March	5
April	2
May	12
June	6
July	2
August	4
September	2
October	59
November	694
December	263

Month totals also reflect the available observation record and the shorter 2026 period. They do not isolate weather, policy or an emissions source.

Source: CPCB and DPCC station observations via CREA, 2021 to 17 October 2026.

Episodes and concentrations

A high count across several monitors can occur on a few dates. The concentration table retains the physical measurement behind the capped display.

Reporting date, IST	Stations displayed as 500
2024-11-18	38
2024-11-19	32
2021-11-05	30
2024-11-13	29
2023-11-03	29
2021-01-15	28

Date	Station	Pollutant	24-hour mean, micrograms per cubic metre
2024-11-18	NSIT Dwarka	PM10	841.6
2024-11-18	R K Puram	PM10	829.7
2024-11-18	Najafgarh	PM10	829.7
2024-11-18	North Campus, DU	PM10	828.7
2024-11-18	Najafgarh	PM2.5	675.9
2024-11-18	Mundka	PM2.5	671.0
2024-11-18	Punjabi Bagh	PM2.5	669.6
2024-11-18	Ashok Vihar	PM2.5	668.2

Four large eligible 24-hour means are shown separately for each particle fraction. Concentrations are rounded down to one decimal. These are not hourly peaks, and the table is not an estimate of a multiple of health harm. The dated ceiling results, including gas sub-indices, are retained in the downloads.

The record supports scrutiny of particular dates and monitors. It does not show that the rest of the year was safe, or that a particular agency or activity caused the measured pollution.

Source: CPCB and DPCC station observations via CREA, 2021 to 17 October 2026.

Anand Vihar, hour by hour

PM10 concentrations in the later saved archive for 29 August to 2 September 2026. Calendar hours below differ from the 16:00 reporting window.

Date	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	10:00	11:00
08-29	676	-	732	717	650	582	643	740	573	549	590	486
08-30	499	785	595	549	444	460	514	379	434	458	488	412
08-31	414	533	516	404	484	379	324	304	364	424	360	288
09-01	439	415	438	460	264	156	260	348	366	302	379	296
09-02	-	-	-	-	-	-	-	-	-	-	-	-

Date	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
08-29	368	285	286	336	545	641	661	691	477	474	505	564
08-30	-	-	-	-	-	-	-	-	-	-	-	-
08-31	-	-	-	-	-	-	-	-	-	-	-	-
09-01	-	-	-	-	-	-	-	-	-	-	-	-
09-02	-	-	-	-	-	-	-	-	-	-	-	-

Calendar date	Numeric PM10 hours	Hours passing the value check
2026-08-29	23	23
2026-08-30	12	12
2026-08-31	12	12
2026-09-01	12	12
2026-09-02	0	0

All hourly values are micrograms per cubic metre and are rounded down to an integer for this matrix. A dash means no numeric value in the selected archive. An asterisk identifies a value outside the stated analysis range; it remains visible here but does not enter a mean.

For the reporting window ending at 16:00 on 30 August, PM10 has 20 valid hours and a mean of 529.0 micrograms per cubic metre; the combined displayed index is 500. The 31 August window has only 12 PM10 hours, below the required 16.

This is a later saved record, not proof of which values were available to an earlier live feed. A gap in an early download may later be filled. The archive cannot by itself establish equipment shutdown, intent, the missing concentration, or the direction of any effect on a city average.

The 16-of-24 requirement applies separately to each pollutant in the reporting window, and an AQI also needs at least three qualifying pollutants. A count of calendar-day PM10 hours is therefore not by itself a certificate that a daily combined AQI can be calculated.

Source: CPCB and DPCC station observations via CREA, 2021 to 17 October 2026.

Method, sources and limits

The observed record is calculated under explicit rules. It is not a claim that every sensor reading has been independently validated.

The period is 1 January 2021 to 17 October 2026. Each primary station-day ends at 16:00 IST and uses hourly labels from 16:00 the previous day through 15:00 on the stated date. Data from 31 December 2020 supply the first window.

The source is CREA's saved compilation of CPCB and DPCC station observations. The calculation selects raw observed records identified as CPCB, station level, India, Delhi and the canonical micrograms-per-cubic-metre unit. Identical duplicate source, station, pollutant and hour values count once. Conflicting duplicates block acceptance.

The existing value checks retain positive values below 1,000 micrograms per cubic metre for particles and gases other than carbon monoxide. Carbon monoxide uses a ceiling of 50,000 micrograms per cubic metre and is converted to milligrams for the calculator. Excluded observations and source fingerprints are retained in the data notes.

PM2.5, PM10, nitrogen dioxide, sulphur dioxide and ammonia use 24-hour means when present. Carbon monoxide and ozone use the largest eight-clock-hour mean wholly inside that window. At least 16 distinct hourly observations are required for a pollutant sub-index. Six of eight valid clock hours is our stated completeness convention for an eight-hour block; it is not quoted as a separate CPCB requirement.

An overall index needs at least three qualifying AQI pollutants, including PM2.5 or PM10. It is the largest pollutant sub-index, using the original CPCB calculator formulas. No unavailable pollutant is filled with zero. This report uses observed concentrations; no weather adjustment or model prediction is substituted.

The network and its availability change. A calendar period with no eligible AQI cannot establish clean air. A capped index does not erase a concentration, and missing observations do not establish how an unobserved value would change an average. Emissions, individual exposure and causation are not estimated here.

Primary documents and data

CPCB: How is AQI calculated?
CPCB: original AQI calculator
CPCB: National Air Quality Index report
CREA data API and documentation
Full report, dated results and source notes

CREA has no involvement in this analysis. Responsibility for its interpretation and any error rests with the publisher.