



Air Quality Monthly Report

August, 2022



Department of Environment
Ministry of Environment Forest and Climate Change, Bangladesh.

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Introduction:

Department of Environment (DoE), Bangladesh has established a countrywide air quality monitoring (AQM) network. The continuous monitoring of 6 (six) criteria pollutants ($PM_{2.5}$, PM_{10} , SO_2 , CO, NO_x and O_3) is being done by 31(thirty one) Continuous Air Monitoring Stations (CAMS) and Compact Continuous Air Monitoring Stations (C-CAMS) located in the divisional and industrial districts of the country. The network encompasses all the regions of the country - Dhaka, Narayanganj, Gazipur, Savar, Mymensing, Narsindi in the center, Chittagong in the south-east. Khulna, Cumilla and Barisal in the south, Rajshahi in the west, and Sylhet in the north-east regions, Rangpur in the north west of the country. And C-CAMS are located in Faridpur, Jashore, Satkhira, Bagerhat, Gopalganj, Tangail, Bogura, Tongi, BUET campus, Brahmanbaria, Feni, Noakhali, BSRM (Chattogram), Cox's-Bazar, Nagor Bhaban, Dhaka. The data and information generated from those stations are automatically collected in the central server and are disseminated through DoE website. Air Quality Index (AQI) for each city is calculated and published online daily for notifying the people about the status of air quality in their respective city.

Quality Assurance/Quality Control (QA/QC) methods and procedures are implemented with full documentation and are validated through an international certified calibration reference laboratory. Forms and log sheets document every activity in the air monitoring stations and document all maintenance, calibration, operation and other activities such as all visits to the stations. This monthly report provides an overview and analysis of air quality monitoring data in Bangladesh for the month wise monitoring results.

The report summarizes the data of different CAMS located in different cities of Bangladesh.

Standards of Ambient Air Quality

The Government of Bangladesh has enacted Air Pollution (Control) Rules – 2022 with ambient air quality standards. This report establishes the Air Quality Index (AQI) followed by USEPA guideline to evaluate air pollution.

Table 1: National Ambient Air Quality Standards (NAAQS) for Bangladesh

Pollutant	Limit Value	Averaging time
CO	5 mg/m ³	8 hours ^a
	20 mg/m ³	1 hour ^a
Pb	0.25 µg/m ³	Annual
	0.50 µg/m ³	24 hours
NO _x	40 µg/m ³	Annual
	80 µg/m ³	24 hours
PM ₁₀	50 µg/m ³	Annual ^b
	150 µg/m ³	24 hours ^c
PM _{2.5}	35 µg/m ³	Annual
	65 µg/m ³	24 hours
O ₃	180 µg/m ³	1 hour ^d
	100 µg/m ³	8 hours
SO ₂		Annual
	80 µg/m ³	24 hours ^a

Table 2: Air quality index (AQI) in Bangladesh

Air quality index (AQI)	Category		Colour
	In English	In Bangla	
0-50	Good	ভাল	Green
51-100	Moderate	মধ্যম	Yellow Green
101-150	Caution	সাবধানতা/সতর্কীকরণ	Yellow
151-200	Unhealthy	অস্বাস্থ্যকর	Orange
201-300	Very Unhealthy	খুব অস্বাস্থ্যকর	Red
301-500	Extremely Unhealthy/Hazardous	অত্যন্ত অস্বাস্থ্যকর	Purple

Location Map of Air Monitoring Station

Figure 1: Locations Map of Continuous Air Monitoring Stations (CAMS) under Department of Environment in Bangladesh.



Station Information

Table 3: Overview of the locations and capacity of the CAMS

City	ID	Location	Latitude/ Longitude	Monitoring Capacity	Year of Est.	Type	Inlet & Met tower Height(m)
Dhaka	CAMS-1	Dept of Environment	23°.77'73.94"N 90°.37'26.03"E	PM ₁₀ , PM _{2.5} , SO ₂ , CO, O ₃ & NO _x with Meteorological Parameters	2012	UB/Res	4.8 & 8
	CAMS-2	Farmgate	23°.75'94.10"N 90°.38'86.79"E		2008	Rd/Com	8.8 & 11
	CAMS-3	Darussalam	23°.78'07.75"N 90°.35'54.10"E		2012	UB/Com	8.8 & 11
Gazipur	CAMS-4	Gazipur	23°.99'41.28"N 90°.42'23.15"E		2012	SUB	8.8 & 11
Narayanganj	CAMS-5	Narayanganj	23°.62'60.79"N 90°.50'72.00"E		2012	UB industry	8.8 & 11
Chattogram	CAMS-6	TV Station, Khulshi	22°.36'04.87"N 91°.80'04.54"E		2006	UB1	4.8 & 7
	CAMS-7	Agrabad	22°.32'30.20"N 91°.80'23.36"E		2012	UB/Res	8.8 & 11
Khulna	CAMS-8	Boyra	22°.83'57.75"N 89°.52'90.56"E		2008	UB	6.8 & 10
Rajshahi	CAMS-9	Sapura	24°.38'33.20"N 88°.60'80.07"E		2008	Rd/Res	6.8 & 10
Sylhet	CAMS-10	Red Crecent Campus	24°.88'83.34"N 91°.86'73.47"E		2012	Rd/UB/Res	13.8 & 15
Barishal	CAMS-11	DFO Office Campus	22°.71'02.87"N 90°.36'25.98"E		2012	UB/Res	6.8 & 10
Mymensingh	CAMS-12	DoE Office, Divisional Headquarter	24°.76'24.58"N 90°.40'21.02"E		2019	UB	8.8 & 11
Rangpur	CAMS-13	BTV Rangpur Station	25°.74'73.71"N 89°.22'89.31"E		2019	UB	8.8 & 11
Savar	CAMS-14	Atomic Energy Research Institute	23°.95'37.04"N 90°.27'97.94"E		2019	SUB	10.8 & 14
Narsingdi	CAMS-15	Sadar Upazila Complex	23°.93'24.56"N 90°.71'65.98"E		2019	SUB	8.8 & 11
Cumilla	CAMS-16	Court Area	23°.47'29.88"N 91°.18'06.71"E		2019	UB	8.8 & 11

UB: Urban; Rd: Road; Res: residential; Com: Commercial; SUB: Suburban; Rural: Rural

Table 4: Overview of the locations and capacity of the C-CAMS

City	ID	Location	Lat/Lon	Year of Est.	Type	Monitoring Capacity	Inlet & Met tower Height(m)
Faridpur	C-CAMS-17	Sadar, Faridpur (Municipal Office)	23°.60'64.11"N 89°.83'88.19"E		SUB		9 & 11
Jashore	C-CAMS-18	Sadar, Jashore (circuit house)	23°.16'22.16"N 89°.20'63.70"E		SUB		12 & 14
Satkhira	C-CAMS-19	Shyamnagar, Satkhira	22°.31'59.96"N 89°.04'31.70"E		Rural		5.2 & 7.2
Bagerhat	C-CAMS-20	Rampal, Bagerhat (Maytree Super Thermal Power Project)	22°.59'60.86"N 89°.55'37.20"E		Rural/Industrial		5.7 & 7.7
Gopalganj	C-CAMS-21	Sadar, Gopalganj	23°.00'88.53"N 89°.82'91.60"E		SUB		22 & 24
Tangail	C-CAMS-22	Sadar, Tangail (DoE office)	24°.24'97.96"N 89°.92'93.57"E		SUB		15 & 17
Bogura	C-CAMS-23	Sadar, Bogura (DoE Office)	24°.86'17.79"N 89°.36'11.46"E		SUB		9 & 11
Tongi	C-CAMS-24	BSCIC, Tongi, Gazipur	23°.89'41.74"N 90°.41'12.10"E		Com/Industrial	PM ₁₀ , PM _{2.5} , SO ₂ , CO, O ₃ & NO _x with Meteorological Parameters	18 & 20
BUET	C-CAMS-25	Department of Chemical Engineering, BUET, Dhaka	23°.72'75.91"N 90°.39'27.97"E	2020	UB		10 & 12
Brahmanbaria	C-CAMS-26	Sadar, B.Barbia (municipal Office)	23°.97'43.71"N 91°.10'97.69"E		SUB		18 & 20
Feni	C-CAMS-27	Sadar, Feni (DoE Office)	23°.00'62.97"N 91°.38'13.05"E		SUB		18 & 20
Noakhali	C-CAMS-28	Maijdi Bazar, Noakhali (DoE Office)	22°.88'11.48"N 91°.09'69.66"E		SUB		15 & 17
Chattogram BSRM	C-CAMS-29	BSRM, Nasirabad, Chattogram	22°.37'28.38"N 91°.81'80.54"E		UB/Industrial		12 & 14
Cox's-Bazar	C-CAMS-30	Saymon Road, Sadar, Cox's-Bazar (DoE Office)	21°.44'22.08"N 91°.97'10.83"E		SUB		9 & 11
Nagor Bhaban, Dhaka	C-CAMS-31	Nagar Bhaban, DSCC, Dhaka	23°.72'40.75"N 90°.40'91.42"E		UB/Com		13 & 15

UB: Urban; Rd: Road; Res: residential; Com: Commercial; SUB: Suburban; Rural: Rural

Summary of Components

Month of August, 2022

Table 5: Summary of components, Month of August, 2022

Parameter	Summary	BARC	Darus-salam, Dhaka	Gazipur	Narayanganj	TV-Station, Chattagram	Agrabad, Chattagram	Syhet	Khulna	Rajshahi	Barisal	Savar	Mymensingh	Rangpur	Cumilla	Narshingdi
SO ₂ -24 hr	Average	2.4	DNA	DNA	DNA	2.2	8.7	4.1	7.4	2.2	DNA	10.9	47.4	1.5	3.0	1.6
	Max	3.8	DNA	DNA	DNA	4.2	10.0	4.7	18.1	4.2	DNA	13.0	131.6	4.8	4.1	2.4
	Min	1.1	DNA	DNA	DNA	0.9	6.1	3.8	0.1	0.4	DNA	1.7	0.9	0.3	2.2	1.2
	Excedance(Days)	0.0	DNA	DNA	DNA	0.0	0.0	0.0	0.0	0.0	DNA	0.0	13.0	0.0	0.0	0.0
	Data capture(%)	41.9	DNA	DNA	DNA	58.1	90.3	100.0	77.4	100.0	DNA	22.6	93.5	74.2	48.4	100.0
NO ₂ -24 hr	Average	6.7	2.7	DNA	2.2	12.9	6.7	9.7	7.9	3.8	0.8	10.9	5.9	7.3	5.0	5.6
	Max	9.2	6.1	DNA	16.0	12.9	35.4	12.7	9.1	5.1	0.9	61.7	6.5	14.2	5.1	5.9
	Min	4.6	0.5	DNA	0.1	12.8	0.8	6.8	7.1	2.8	0.7	3.9	5.4	2.9	4.9	5.5
	Excedance(Days)	0.0	0.0	DNA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
	Data capture(%)	100.0	87.1	DNA	48.4	58.1	77.4	100.0	100.0	100.0	6.5	90.3	100.0	29.0	77.4	100.0
CO-8hr	Average	2.1	DNA	DNA	DNA	1.2	DNA	DNA	3.9	0.9	DNA	4.6	1.1	1.2	2.6	2.6
	Max	3.9	DNA	DNA	DNA	2.4	DNA	DNA	8.9	1.2	DNA	9.5	1.7	26.0	4.3	3.6
	Min	0.0	DNA	DNA	DNA	0.0	DNA	DNA	0.1	0.6	DNA	2.3	1.0	0.6	1.1	1.9
	Excedance(Hour)	0.0	DNA	DNA	DNA	0.0	DNA	DNA	314.0	0.0	DNA	408.0	0.0	7.0	57.0	0.0
	Data capture(%)	95.8	DNA	DNA	DNA	53.9	DNA	DNA	87.6	99.1	DNA	86.4	95.4	79.3	50.1	99.1
O ₃ -8hr	Average	10.9	3.6	DNA	DNA	12.5	14.9	DNA	25.5	87.2	DNA	10.6	24.1	15.7	23.1	11.6
	Max	11.7	4.4	DNA	DNA	20.2	19.7	DNA	40.1	99.9	DNA	38.4	163.7	37.4	88.6	36.2
	Min	10.7	3.3	DNA	DNA	3.2	11.7	DNA	19.3	65.3	DNA	5.1	2.0	2.5	1.4	1.4
	Excedance(Hour)	0.0	0.0	DNA	DNA	0.0	0.0	DNA	0.0	413.0	DNA	0.0	14.0	0.0	4.0	0.0
	Data capture(%)	84.7	2.6	DNA	DNA	77.4	4.4	DNA	95.3	55.5	DNA	86.6	88.6	66.8	55.1	99.1
PM _{2.5} -24hr	Average	62.9	43.8	25.0	36.7	59.5	15.5	39.4	34.4	40.8	11.6	40.6	61.2	45.9	19.0	22.0
	Max	123.9	84.4	42.1	98.6	115.6	28.3	67.8	118.9	76.7	20.9	75.2	124.1	116.4	55.7	44.7
	Min	41.1	25.7	14.3	11.8	26.7	7.2	17.8	6.9	18.0	6.9	21.7	20.3	14.3	5.9	9.3
	Excedance(Days)	12.0	4.0	0.0	3.0	1.0	0.0	1.0	3.0	3.0	0.0	1.0	10.0	5.0	0.0	0.0
	Data capture(%)	100.0	96.8	41.9	87.1	12.9	90.3	22.6	96.8	100.0	25.8	90.3	100.0	96.8	77.4	100.0
PM ₁₀ -24hr	Average	107.7	70.8	63.2	84.5	17.2	54.8	107.9	41.3	133.9	28.8	65.6	158.4	87.4	60.2	59.7
	Max	188.9	117.6	118.4	172.5	28.7	90.9	274.0	99.0	282.3	68.7	105.8	295.0	220.3	138.1	121.8
	Min	76.3	45.8	35.7	43.0	9.4	31.8	46.8	14.4	42.7	13.1	42.0	70.9	43.1	9.7	32.5
	Excedance(Days)	3.0	0.0	0.0	1.0	0.0	0.0	5.0	0.0	11.0	0.0	0.0	15.0	4.0	0.0	0.0
	Data capture(%)	100.0	90.3	100.0	87.1	77.4	90.3	90.3	77.4	83.9	100.0	90.3	100.0	90.3	61.3	100.0
Solar rad. 1hr	Average	DNA	162.7	DNA	DNA	DNA	188.6	DNA	144.8	178.6	156.2	255.3	161.6	299.6	288.8	299.7
	Max	DNA	1006.7	DNA	DNA	DNA	827.6	DNA	925.8	1100.4	849.4	960.0	994.2	951.1	903.8	1075.4
	Min	DNA	995.8	DNA	DNA	DNA	9.4	DNA	0.0	2.4	8.8	0.0	0.0	0.1	0.0	0.0
	Data capture(%)	DNA	100	DNA	DNA	DNA	74	DNA	80	16	100	63.7	81.0	24.5	34.7	66.0
Relative Humidity 1hr	Average	67.6	66.9	DNA	DNA	60.1	82.7	DNA	58.6	74.0	91.9	75.5	95.6	87.6	92.5	48.8
	Max	74.9	89.4	DNA	DNA	89.1	94.9	DNA	70.8	82.9	95.8	98.0	99.4	99.6	99.5	75.8
	Min	35.3	38.2	DNA	DNA	57.1	65.6	DNA	57.7	33.3	48.4	55.8	54.9	60.0	57.1	20.4
	Data capture(%)	96.1	100.0	DNA	DNA	91	32	DNA	85	96	100	34.1	99.9	51.7	49.2	93.0
Ambient Temp. 1hr	Average	32.8	34.6	DNA	DNA	28.8	35.3	DNA	30.5	33.3	30.6	28.5	28.1	28.6	29.2	28.7
	Max	39.5	41.7	DNA	DNA	35.9	41.9	DNA	37.5	38.3	41.4	35.2	36.0	33.7	35.7	34.8
	Min	27.6	28.4	DNA	DNA	23.9	25.4	DNA	25.9	21.1	24.7	24.5	24.5	24.2	25.1	23.9
	Data capture(%)	96.1	99	DNA	DNA	92	15	DNA	85	96	100	86.6	98.0	44.5	47.2	92.7
Rainfall 1hr	Average	4.28	DNA	DNA	DNA	DNA	DNA	DNA	DNA	0.61	0.58	DNA	DNA	DNA	DNA	DNA
	Max	4.32	DNA	DNA	DNA	DNA	DNA	DNA	DNA	3.68	1.05	DNA	DNA	DNA	DNA	DNA
	Min	3.24	DNA	DNA	DNA	DNA	DNA	DNA	DNA	0.04	0.01	DNA	DNA	DNA	DNA	DNA
	Data capture(%)	95.97	DNA	DNA	DNA	DNA	DNA	DNA	DNA	33.47	99.87	DNA	DNA	DNA	DNA	DNA

CAMS= Continuous Air Monitoring Station, NAAQS=National Ambient Air Quality Standard, a=Refurbishment CAMS, PM= Particulate Matter

DNA= Data Not Available

Table 6: Air Quality Index (AQI) Month of August, 2022

Date	Dhaka	Chattogram	Gazipur	Narayanganj	Sylhet	Khulna	Rajshahi	Barishal	Savar	Mymensingh	Rangpur	Cumilla	Norshindi
01-08-2022	154	47	62	65	68	104	126	35	103	78	88	27	45
02-08-2022	188	46	112	147	32	102	155	52	145	129	77	24	86
03-08-2022	164	48	42	83	35	141	125	34	160	175			95
04-08-2022	138	31	60	45	28	61	123	16	117	115	90	36	47
05-08-2022	127	44	90	DNA	24	72	97	19	124	144	120	19	31
06-08-2022	100	53	54	DNA	25	96	83	22	86	107	72	17	26
07-08-2022	120	40	41	47	29	64	104	18	65	98	64	DNA	23
08-08-2022	95	43	62	76	38	55	77	44	68	79	60	26	48
09-08-2022	63	28	29	DNA	13	44	50	16	63	69	DNA	23	68
10-08-2022	100	18	39	DNA	14	16	42	18	51	68	DNA	20	23
11-08-2022	110	21	45	40	27	18	53	15	61	87	DNA	20	24
12-08-2022	106	18	57	62	25	29	79	16	99	94	107	20	29
13-08-2022	105	26	117	57	35	18	108	10	51	90	115	DNA	29
14-08-2022	102	26	92	62	32	24	78	16	66	95	102	DNA	32
15-08-2022	101	25	88	DNA	25	26	63	22	76	100	86	DNA	38
16-08-2022	101	34	96	DNA	28	31	40	20	82	120	94	DNA	51
17-08-2022	158	42	105	DNA	32	38	46	24	91	142	102	DNA	56
18-08-2022	160	44	108	58	34	41	50	25	96	144	105	34	58
19-08-2022	103	38	98	52	28	43	54	18	87	94	75	35	44
20-08-2022	92	28	20	48	45	DNA	56	12	73	88	60	31	34
21-08-2022	130	30	41	39	38	88	120	23	114	125	176	45	76
22-08-2022	153	34	47	DNA	44	107	123	25	121	149	189	54	90
23-08-2022	129	32	37	35	42	67	105	23	118	108	96	42	76
24-08-2022	92	29	21	38	22	47	70	18	DNA	96	66	19	32
25-08-2022	141	34	39	65	54	54	89	22	124	138	85	38	48
26-08-2022	105	36	75	78	66	45	142	20	114	165	156	65	68
27-08-2022	114	39	78	87	69	47	160	18	117	171	170	67	74
28-08-2022	90	31	36	58	52	73	128	16	82	113	110	43	37
29-08-2022	114	44	47	66	87	65	89	23	125	122	118	45	76
30-08-2022	100	46	47	66	87	65	89	23	109	122	108	67	76
31-08-2022	123	42	31	46	59	47	89	9	92	132	121	47	60

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