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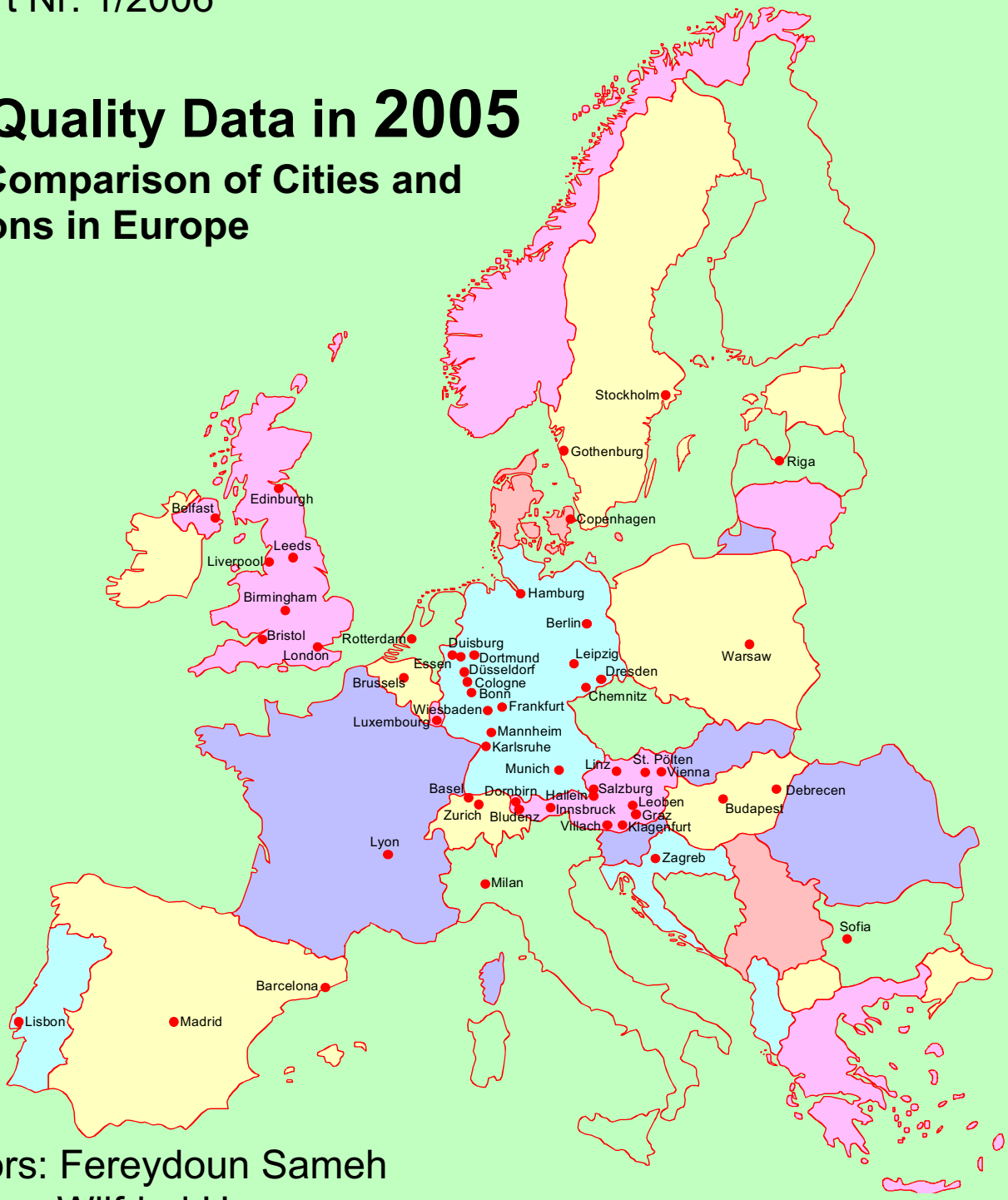
Air Quality Data in 2005

The Comparison of Cities and Regions in Europe



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Environment + Technics

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LUFTGÜTEVERGLEICH 2005

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MAX. MONATSMITTELWERT 33

MAX. TAGESMITTELWERT 41

MAX. 3H-MITTELWERTE 49

MAX. 1H-MITTELWERTE 57

MAX. HALBSTUNDEN-MITTELWERTE 65

MAX. 98-PERCENTIL/JAHR 73

JAHRESVERGLEICH 1992 - 2005

JAHRESMITTELWERTE 81

MAX. TAGESMITTELWERTE 107

MAX. 98-PERCENTILE 133

JAHRESVERGLEICH1993-2005 JAHRESMITTELWERTE; SUMME SO_2, TSP/PM_{10}, NO_2 ..... **159**

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MAX. 3H- MEAN VALUES 49

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MAX. 1/2H-MEAN VALUES 65

MAX. 98-PERCENTILE PER YEAR 73

COMPARISON OVER THE YEARS 1992 - 2005

ANNUAL MEAN VALUES 81

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Luftgütedaten 2005 Nationaler und europäischer Städtevergleich

Einführung

Die Bekämpfung der Luftverschmutzung ist auch noch heute eines der zentralen Themen, mit denen Umweltämter, Umweltbehörden bzw. sonstige für den Umweltschutz tätige Organisationen beschäftigt sind. In Form von regionalen oder nationalen Luftreinhalteplänen versucht man, die Luftverschmutzung in den Griff zu bekommen und Luftqualität sukzessive zu verbessern. In den letzten Jahren ist die Belastung an Feinstaub (PM_{10}) und Stickoxiden besonders in den Mittelpunkt des Interesses gerückt, da die Grenzwerte für diese Luftschadstoffe in den meisten Ballungsräumen überschritten werden.

Um überhaupt den Erfolg von Sanierungsmaßnahmen nachweisen zu können, ist die Beobachtung der Schadstoffkonzentrationen mit Hilfe von Luftmessnetzen sinnvoll. In den meisten Messgebieten sind Luftmessnetze seit 2 bis 3 Jahrzehnten installiert, sodass bei einer Verfolgung der Luftschadstoffdaten über mehrere Jahre ein Trend zur Verbesserung (oder auch Verschlechterung?) der Luftbelastung herauslesbar sein sollte. Sanierungsmaßnahmen in Betrieben und bei anderen Emittentengruppen müssten sich jedenfalls langfristig in einer verminderten Immissionsbelastung an Luftschadstoffen manifestieren.

Die Verfolgung *längerer Zeiträume* zur Bestimmung des Belastungstrends ist unbedingt notwendig, da auf Grund von unterschiedlichen meteorologischen Einflüssen die Immissionsbelastungen außerordentlich stark schwanken können. Beispielsweise wird ein Monat mit vornehmlich regnerischer Witterung und viel Wind wesentlich geringere Immissionskonzentrationen aufweisen als ein Monat, in dem häufig Inversionswetterlagen vorherrschen.

Air Quality Data in 2005 The Comparison of Cities and Regions in Europe

Introduction

The fight against air-pollution is still one of the major topics to deal with of all organisations concerned with environmental affairs, such as national and local authorities. In the form of regional or national air-cleaning programmes it is tried to get air pollution under control as well as to increase the air quality step by step. During the last years the pollutant stress of fine particulates (PM_{10}) and nitrogen oxides has become of more and more importance, for the European air quality standards for these pollutants are exceeded in most of the agglomerations.

To prove the success of measurements of redevelopment at all, the observation of the concentrations of noxious compounds by means of monitoring station networks is useful. In most of the referred air-monitoring areas monitoring station networks have been installed for 2 – 3 decades. Thus following the air quality data through a longer period of years a trend for improvement (or even a change to the worse?) of the air-pollutant stress should be able to be recognized. Measurements of redevelopment in companies, factories and other groups of emission sources should manifest in a reduced immission stress of air pollutants.

It is absolutely necessary to determine the trends of pollution through a *longer period of time*, because due to various meteorological influences the immission stress can alter extremely. For instance, a month with mostly rainy weather conditions and high wind speeds will have much less immission concentrations than a month, where the formation of inversion layers can be observed often.

Luftgütevergleiche werden durch das Umwelt- und Technik-Center (früher: Amt für Natur- und Umweltschutz) bereits seit vielen Jahren durchgeführt, genau genommen seit 1989. Anfänglich wurden nur österreichische Städte miteinander verglichen. In den folgenden Jahren wurde der Städtevergleich auf immer mehr europäische Städte und Regionen wegen des großen Interesses ausgedehnt. Im Jahr 2005 wurden weiters Städte bzw. Regionen aus Deutschland, England, Frankreich, Belgien, Niederlande, Dänemark, Schweden, Italien, Schweiz, Spanien, Portugal, Polen, Bulgarien, Lettland und Kroatien mit einbezogen. Luxemburg konnte auf Grund technischer Probleme für die Jahre 2004 und 2005 keine Daten liefern.

Die Städte Athen, Thessaloniki, Bukarest und Debrecen haben seit 6 Jahren keine Daten geliefert. Sollten diese noch eintreffen, werden sie in künftigen Städtevergleichen in Form von Zeitreihen mit berücksichtigt werden.

Comparisons of the air quality have been carried out by our organization already for a number of years, exactly since 1989. At first only Austrian Cities were compared. During the last years the comparison was extended to other European cities and regions, for there is much interest in such studies. The comparison of the air quality of the year in 2005 comprised cities and regions of Austria, Germany, cities from England, France, Belgium, Netherlands, Denmark, Sweden, Italy, Switzerland, Spain, Portugal, Poland, Bulgaria, Latvia and Croatia. Luxemburg was not able to contribute with immission date in 2004 and 2005 due to technical problems.

The cities Athens, Thessalonica, Bucharest and Debrecen did not deliver any data during the past 6 years. In the case of delivery to us they will be taken into account for future reports in terms of time series.

Kritische Anmerkungen

Als Kritikpunkt wird immer wieder angemerkt, dass ein Vergleich der Immissionsbelastung aus fachlichen Gründen nicht möglich ist, da

1. die Zahl der Messstellen sehr verschieden ist (die Anzahl der Messstellen pro Messgebiet ist in der Tabelle auf Seite 17 und den nachfolgenden Grafiken angeführt),
2. die Messstellendichte unterschiedlich ist,
3. die Situierung der Messstellen nicht immer vergleichbar ist (In manchen Städten hat man deswegen bei den Schadstoffkomponenten zwischen verkehrsbelasteten Messstationen und anderen Messstationen unterschieden).

Den Autoren sind sich dieser Tatsachen durchaus bewusst. Trotz der erhobenen Einwände gibt es einige Argumente für die Fortführung der Städtevergleiche:

Critical remarks

Over and over again there is critically remarked that a comparison of the pollutant stress between monitoring areas is not possible. The following technical reasons are mentioned by some monitoring network services:

1. The number of monitoring stations differs very much (the number of monitoring stations of each monitoring network is mentioned in the table on page 17 and the subsequent graphics),
2. the density of distribution of the monitoring stations is different,
3. the location of the monitoring station not always is comparable (for that reason in some cities the network services distinguished between traffic-stressed and non-traffic-influenced monitoring stations).

The authors of the comparative study are thoroughly conscious of these facts. But despite to the raised objections there are also some arguments of continuing the activities:

1. Die Luftschadstoffmessungen werden im allgemeinen technisch in der gleichen oder in ähnlicher Weise durchgeführt. Das bedeutet, dass die Luftüberwachung an bestimmten *Punkten* einer Stadt oder einer Region mit Hilfe automatisch registrierender Immissionsmessstationen durchgeführt werden. Die gemessenen Konzentrationen repräsentieren die Belastung eines mehr oder weniger weiten Bereiches um die Messstation. Die *Art der Probenahme* müsste also *vergleichbar* sein.

2. Die Luftgütestationen sollten an Punkten errichtet werden, die einen größeren Bereich um die Messstation abdecken und nicht nur die Schadstoffbelastung an einem bestimmten Punkt widerspiegeln. Ausgenommen sind besondere verkehrsbelastete Probenahmepunkte. Die Messnetzbetreiber wurden eingeladen, diese Messpunkte getrennt anzugeben, um die wirkliche Situation des überwachten Gebietes wiederzugeben. Wie bereits oben bemerkt, unterscheiden einige Städte zwischen verkehrsbelasteten und nicht vom Verkehr beeinflussten Messstationen.

3. Schließlich wird eine stärker objektivierende Basis der Auswertungen besonders dann erreicht, wenn man längere Zeiträume betrachtet und daraus die Trends der Entwicklung der Schadstoffimmissionen abliest. Nachdem die Stadt Linz internationale und nationale Städtevergleiche schon seit einigen Jahren durchführt, wurden in diesen Bericht für die Jahresmittelwerte auch die mehrjährige *Trendentwicklung* der Schadstoffbelastung seit 1993 für die einzelnen Immissionsgebiete mit aufgenommen. Die Daten von Städten bzw. Regionen, die erst seit kurzem im Städtevergleich integriert sind, wurden dabei auch so weit wie möglich nachgeführt.

1. The kind of measurement of air pollutants is carried out by the same ore similar technical methods. This means that the results of air monitoring activities are obtained by sampling at special sampling *points* in a city or region by means of automatically recording monitoring stations. The measured concentrations represent the stress of a more or less wide area around the monitoring station. Due to this reason the *method of sampling* itself should be *comparable*.

2. The monitoring stations should be located at points that represent a wider portion of the monitored area, not only the pollution stress representative for a focal point. Exceptions are specially traffic stressed sampling points. The monitoring station network services were invited to separate such monitoring points in order to reproduce the real situation of the monitored area. As already mentioned above, some cities distinguish between traffic-stressed and non-traffic-influenced monitoring stations.

3. And finally the evaluations are put to a more objectified basis, if one observes longer term developments and derives from these the trends of the pollutant immissions. Since the city of Linz has been carrying out comparisons of the air quality for years, in this report the *trend developments* for the annual mean value since 1993 for all immission regions have been included. The data of cities or regions that only have been participating the comparison since a couple of years, have been updated far as back as possible

Verglichene Immissionskenngrößen

In der vorliegenden Studie wurden verschiedene Immissionskenngrößen miteinander verglichen:

- Jahresmittelwert (Mittel aus allen Stationen einer Stadt/Region)
- Max. Monatsmittelwerte (höchstbelastete Station einer Stadt/Region)
- Max. Tagesmittelwert (höchstbelastete Station einer Stadt/Region)
- Max. 3-Stunden-Mittelwert (höchstbelastete Station einer Stadt/Region)
- Max. Einstunden-Mittelwert (höchstbelastete Station einer Stadt/Region)
- Max. Halbstunden-Mittelwert (höchstbelastete Station einer Stadt/Region)
- Max. 98-Percentil/Jahr (höchstbelastete Station einer Stadt/Region)
- Anzahl der Überschreitungen des PM_{10}-Tagesgrenzwertes an der höchstbelasteten Messstation
- Anzahl der Überschreitungen des NO_2-Grenzwertes für den 1h-Mittelwert an der höchstbelasteten Messstation

Von den einzelnen Messnetzbetreibern wurden die gewünschten Immissionsdaten in sehr unterschiedlicher Vollständigkeit zur Verfügung gestellt. Insbesondere betrifft dies die Perzentil-Auswertungen und manchmal auch die Auswertungen für max. HMW oder max. 3h-MW. Oftmals ist auch nicht das 98-Percentil verfügbar, sondern es werden andere Perzentilgrößen (z. B. 95-Percentil) gebildet. Die meisten Messnetzbetreiber berechnen die Perzentile aus den Halbstunden-Mittelwerten eines Jahres, manchmal werden jedoch auch die Tagesmittelwerte dafür herangezogen.

Aus diesem Grund wurde nur die Auswertung „max. 98-Percentil“ in grafischer Form durchgeführt. Im Kapitel „Luftgütekennzahlen“ der einzelnen Vergleichsregionen sind sämtliche dem Amt für Natur- und Umweltschutz übermittelten Perzentilwerte aufgelistet. Die Art der Perzentilbildung ist - soweit bekannt - in den Tabellen jeweils vermerkt.

Immission reference values compared

The present study compares various Immission reference values, such as:

- annual mean value (mean of all monitoring stations of a city/region)
- max. monthly mean value (max. stressed monitoring station of a city/region)
- max. daily mean value (max. stressed monitoring station of a city/region)
- max. 3-hours mean value (max. stressed monitoring station of a city/region)
- max. 1-hours mean value (max. stressed monitoring station of a city/region)
- max. 1/2-hours mean value (max. stressed monitoring station of a city/region)
- max. 98-Percentile/year (max. stressed monitoring station of a city/region)
- Number of violations of the PM_{10} daily mean standard at the highest stressed monitoring station
- Number of violations of the NO_2 1h mean standard at the highest stressed monitoring station

The individual monitoring network services supported us with immission data of very different completeness, especially referring to the evaluation of the percentiles or sometimes the evaluations of the max. 1/2-hours mean-value or the max. 3-hours mean-value. Often the 98-Percentile was not available but the value for the 95-Percentile was given. Most of the monitoring network services calculate the percentiles from the 1/2-hours mean values of a calendar year, sometimes they were based on the daily mean values.

This was the reason that only „max. 98-percentile“ was graphically evaluated. Within the chapter „Air quality reference numbers“ of each compared region all percentile-values the monitoring network services supported us with are mentioned. If known the kind of formation of percentiles is remarked in the tables.

Verglichene Luftschadstoffe

Folgende Luftschadstoffe wurden miteinander verglichen:
SO_2, CO, NO, NO_2, O_3, Feinstaub (PM_{10})

Anmerkung:
Schwebestaub (TSP) wurde nicht mehr ausgewertet, da die Messungen in den einzelnen Messgebieten mittlerweile durch PM_{10}-Messungen ersetzt worden sind.

Pollutants compared

The following air pollutants have been compared:

SO_2, CO, NO, NO_2, O_3, fine particulates (PM_{10})

Remark:
TSP has not been evaluated any more due to the fact that in most monitoring networks the TSP measurements are replaced by monitoring of PM_{10}.

Mehrjahresvergleich

Ein gutes Bild über die Entwicklung der Luftbelastung geben die Grafiken wieder. Dabei wurden von den am Luftgütevergleich teilnehmenden Städte die Entwicklung der Immissionsbelastung von 1993 bis 2005 aufgetragen.

Wenn man die Daten analysiert, können folgende Aussagen getroffen werden:

1. Einige Städte und Regionen haben ein sehr dichtes Messstellennetz bezogen auf die Größe des Immissionsgebietes. Beispiele: Berlin, Linz, Wien. Andererseits werden manchmal sehr große Gebiete durch eine geringe Zahl von Messstationen überwacht.
2. Aufgrund dieser Tatsache ist die Vergleichbarkeit einzelner Regionen begrenzt.
3. Die Belastung (Jahresmittelwerte) einzelner Regionen und Städte ist noch immer sehr unterschiedlich.
   Bei einigen Städten kann man erkennen, dass in jenen Situationen, bei denen 1993 relativ hohe Immissionsbelastungen registriert wurden, seitdem oftmals eine deutlich sichtbare Besserung der Immissionssituation eingetreten ist, während in Städten mit niedriger Immissionsbelastung im Vergleich dazu nahezu keine Änderung der Luftbelastung eingetreten ist.
4. Es zeigt sich, dass in immer mehr Städten und Regionen die Schwebstaub (TSP)-Messungen abgeschaltet werden. Andererseits werden diese Messungen immer mehr durch Feinstaub (PM_{10}-Messungen abgelöst). TSP-Messungen wurden daher im vorliegenden Vergleich nicht mehr miteinbezogen.

Comparison over a period of years

One can get a good impression of the development of the air pollutant stress by studying the graphics. For this the immission stress for the area of each participating city and region from 1993 through 2005 are plotted.

The following statements can be given in analysing the data:

1. Some cities and regions have - according to the area - a very high monitoring network density. Examples: Berlin, Linz, Vienna. On the other hand very large areas are monitored only by a little number of stations.
2. Due to this fact the comparability between regions is limited.
3. The range of the annual mean immission stress still is very different between the viewed cities and regions.
   In some cities it can be seen that where the pollution stress in 1993 was relatively high, there often has been a visible betterment of the immission situation, while in cities with low immission stress compared to other cities and regions there was nearly no change in air pollution.
4. It can be seen that more and more cities and regions do not monitor TSP any more. On the other hand the percentage of monitoring networks including the pollutant PM_{10} increasing rapidly. So TSP measurements have not been included in the present report any more.

5. Entwicklung der Langzeitbelastung (Jahresmittelwerte SO_2, Schwebestaub (TSP) (nur bis 2004!), NO, NO_2, CO, und O_3) gegenüber 1993 (PM_{10}: gegenüber 2001): SO_2: Nahezu alle Regionen *geringer* belastet Staub: TSP-Messung in nahezu allen Regionen eingestellt. Wenn vorhanden, ist die Tendenz zu *geringeren* Belastungen (Vergleich nur bis 2004). PM_{10}: Belastungen tendenziell *gleich bleibend* oder fallweise *leicht erhöht* NO: uneinheitlich, tendenziell *geringer* belastet oder *gleich bleibend* NO_2: uneinheitlich, tendenziell *gleich bleibend, oder leicht höher* belastet CO: Nahezu alle Regionen *geringer* belastet O_3: uneinheitlich, tendenziell *geringer* belastet oder *gleich bleibend*	5. Development of the air pollution stress (annual mean values of SO2, TSP (only until 2004!), NO, NO_2, CO, O_3) in comparison with 1993 (for PM_{10}: comparison with 2001): SO_2: Nearly all regions *less* stressed TSP: Nearly no TSP-measurements any more. If there is still monitoring, regions are *less* stressed in tendency (Comparison only up to 2004). PM_{10}: trend is constant or *slightly higher* stressed NO: non-uniform, trend of lower stress or staying constant NO_2: non-uniform, trend is constant or *slightly higher* stressed CO: nearly all regions *lower* trend of stress O_3: non-uniform, trend is constant or *slightly higher* stressed

Übersicht über die Entwicklung der Schadstoffbelastungen 1993 -2005

Beurteilungsbasis: Jahresmittelwerte über alle Stationen einer Region

Overview over the development of the stress of air pollutants from 1993 through 2005

based on the mean of all annual mean values of a region

Austrian Towns, Cities and Regions

	SO_2			TSP until 2004 [1]			NO			NO_2			CO			O_3		
	Stress in 1993 [2]	Trend last 5 years	Stress in 2005	Stress in 1993 [2]	Trend of 5 years	Stress in 2004	Stress in 1993 [2]	Trend last 5 years	Stress in 2005	Stress in 1993 [2]	Trend last 5 years	Stress in 2005	Stress in 1993 [2]	Trend last 5 years	Stress in 2005	Stress in 1993 [2]	Trend last 5 years	Stress in 2005
Linz		==			==			==			↗			↘			↗	
Bludenz		==	2004		↘		1994	↗			↗		-	-	-	1994	↗	
Dornbirn		==			-	2000	1994	↗			↘		1998	↘		-	-	-
Graz		↘			↘		1994	==			↗			↘			==	
Hallein		==			-	2001	-	-			↘			↘			==	
Innsbruck		↘			↗			↗			↗			↘			==	
Klagenfurt		↘			↘			==			↗			==			↘	
Region Leoben		↘			↘			↓			↘			==			↗	
Salzburg		==			-	2001	-	-			==			↘			==	
St. Pölten	1994	↓		1994	-	2002	**1994**	↑		1994	↗		1994	↗		1994	↗	
Vienna		↘					**1994**										↗	
Villach		==			↘			==			↗			↓			==	

[1] TSP measurements are mostly replaced by PM_{10} monitoring. So no comparison of TSP was carried out since 2005.

[2] Or year, when data were primarily available

European Cities and Regions

	SO_2			TSP until 2004 [3]			NO			NO_2			CO			O_3		
	Stress in 1993 [4]	Trend last 5 years	Stress in 2005	Stress in 1993 [4]	Trend of 5 years	Stress in 2004	Stress in 1993 [4]	Trend last 5 years	Stress in 2005	Stress in 1993 [4]	Trend last 5 years	Stress in 2005	Stress in 1993 [4]	Trend last 5 years	Stress in 2005	Stress in 1993 [4]	Trend last 5 years	Stress in 2005
Barcelona	1994	==		1995	-	2000	1994	↓		1994	↗		1994	↘		1994	↗	
Basel		==			-	1998		==			==			-	1999		↗	
Belfast		↓		-	-	-		↗			↗			↘			↗	
Berlin		↘			-	2001		==			↗			↘			↗	
Birmingham		↓		-	-	-		==			↗			↘			↗	
Bristol		↓		-	-	-		==			==			↓			↗	
Brussels	1995	↘		-	-	-	1995	↘		1995	==		1995	↘		1995	==	
Budapest	1996	??		1996	↘		2003	↗		2003	↑		2002	↘		2003	-	
Chemnitz		==			-	2001		??			??			↗			↗	
Copenhagen		==		1994	-	2000	1994	↑		1995	↗		1998	↘		1994	↗	
Debrecen		-	2001		-	2000	1995	-	2001		-	2001		-	2001		-	2001
Dresden		==			-	2001		??			==			↗			↑	
Edinburgh		↘		-	-	-		↓			↓			↓			↑	
Frankfurt		==			-	1999		↘			==			↗			↗	
Gothenburg		==		-	-	-		==			==			↘			↗	
Hamburg		==			==	2003		↗			↗			↘			↗	
Karlsruhe		==	2004		-	2000		↗			↗			==			==	
Leeds		↓		-	-	-		↘			↘			↘			↗	
Leipzig		↘			-	2001		↘			↗			↗			↑	
Lisbon	1997	↘	2004	-	-	-	-	-	2003	1997	↗	2004	1997	↘	2004	1997	↗	2004
Liverpool		==		-	-	-		↘			↘			↓			↗	
London		↘		-	-	-		↘			==			↘			↗	
Luxemburg	1996	-	2003	-	-	-	1996	-	2003	1996	-	2003	1996	==	2003	1996	-	2003

[3] TSP measurements are mostly replaced by PM_{10} monitoring. So no comparison of TSP was carried out since 2005.

[4] Or year, when data were primarily available

	SO_2			TSP until 2004 [5]			NO			NO_2			CO			O_3		
	Stress in 1993 [6]	Trend last 5 years	Stress in 2005	Stress in 1993 [6]	Trend of 5 years	Stress in 2004	Stress in 1993 [6]	Trend last 5 years	Stress in 2005	Stress in 1993 [6]	Trend last 5 years	Stress in 2005	Stress in 1993 [6]	Trend last 5 years	Stress in 2005	Stress in 1993 [6]	Trend last 5 years	Stress in 2005
Lyon		↘		-	-	-		↓			↘		1994	↘		1994	↗	
Madrid	1994	↘		-	-	-	1999	↘		1994	==		1994	↘		1994	↗	
Mannheim		↘			-	2000		==			==			==			↗	
Milan	1994	↘		1994	↘		1994	↘		1994	↘		1994	↓		1994	↘	
Munich		==			-	2000		==			↗			↘			↗	
Riga	1999	==		-	-	-	-	-	2004	1999	↗		-	-		1999	↘	
Rhine/Ruhr Area		==			-	2002		==			==			↗			↗	
Rotterdam	1995	==		1995	↘		1995	↗		1995	↗		2003	-		1995	↗	
Sofia	1999	↘		1999	↗		2003	==		1999	↗		1999	↓		1999	↑	
Stockholm		↘		-	-	-	1994	↗	2004	1994	↑		1994	==			↗	
Warsaw	1995	==		2001	↘		2001	↗		1995	==		1995	==		1995	==	
Wiesbaden		==			-	1999		??			↗			↗			↗	
Zagreb		↓			==		-	-	-	1994	↗		-	-	-	1999	↗	
Zurich		==			-	1997		==			==			↘			↗	

Legend:

- slightly stressed (SO_2 < 15, TSP < 30, NO < 30, NO_2 < 30, CO < 1000, O_3 < 30 µg/m³)
- Medium stressed (SO_2 < 30, TSP < 60, NO < 60, NO_2 < 60, CO < 2000, O_3 < 60 µg/m³)
- Highly stressed (SO_2 > 30, TSP > 60, NO > 60, NO_2 > 60, CO > 2000, O_3 > 60 µg/m³)
- - missing data

↘ slight stress decrease
↓ strong stress decrease
↓↓ very strong stress decrease
== constant stress
↗ slight stress increase
↑ strong stress increase
?? trend not assignable

[5] TSP measurements are mostly replaced by PM_{10} monitoring. So no comparison of TSP was carried out since 2005.
[6] Or year, when data were primarily available

	PM_{10}		
	Stress in 2001 [7]	Trend of 5 years	Stress in 2005 [8]
Linz		↗	
Bludenz	-	-	
Dornbirn	2002	↗	
Graz		==	
Hallein	2002	==	
Innsbruck		↗	
Klagenfurt	2002	↘	
Region Leoben	2003	↘	
Salzburg	2002	↗	
St. Pölten	2002	↗	
Vienna	2002	↗	
Villach	2002	==	
Barcelona		↗	
Basel		==	
Belfast		↘	
Berlin		==	
Birmingham		↗	
Bristol		↗	
Brussels		↗	
Budapest	2004	-	
Chemnitz		==	
Copenha-gen		==	
Dresden		↘	
Edinburgh		↘	

	PM_{10}		
	Stress in 2001 [7]	Trend of 5 years	Stress in 2005 [8]
Frankfurt		==	
Gothenburg		↗	
Hamburg		==	
Karlsruhe		↗	
Leeds		↗	
Leipzig		↘	
Lisbon		↘	2004
Liverpool		↗	
London		↗	
Luxemburg		-	2003
Lyon		↗	
Madrid		==	
Mannheim		↗	
Milan		==	
Munich		==	
Riga		↘	
Rhine-/Ruhr Area		↘	
Rotterdam		🡻	
Sofia		↗	
Stockholm		↗	
Warsaw		↗	
Wiesbaden		==	
Zagreb		↗	
Zurich		==	

Legend:

- slightly stressed (PM_{10} < 20 µg/m³)
- Medium stressed (PM_{10} < 40 µg/m³)
- Highly stressed (PM_{10} > 40 µg/m³)
- missing data

[7] If values of 2001 are not available, data of the year mentioned are compared.

[8] If values of 2005 are not available, data of the year mentioned are compared.

Anzahl der Tage mit Überschreitungen des PM_{10}-Tagesmittelwertes von 50 µg/m³ in den Jahren 2001 bis 2005 [9)]

Beurteilungsbasis: Anzahl der Überschreitungen an der höchstbelasteten Station eines Messgebietes (einschließlich verkehrsbelastete Stationen) [10)]

Number of days with exeedances of the PM_{10} daily mean of 50 µg/m³ in 2001 through 2005 [11)]

based on the number of exeedances at the peak stressed monitoring station of a region(including traffic stressed stations) [12)]

	PM_{10}				
	number of days >50 µg/m³				
	2001	2002	2003	2004	2005
Linz	62	66	80	46	68
Bludenz	-	-	-	-	13
Dornbirn	-	-	38	21	22
Graz	159	131	131	117	127
Hallein	-	28	49	26	27
Innsbruck	-	50	61	52	55
Klagenfurt	36	58	74	80	82
Region Leoben	26	7	42	29	36
Salzburg	-	34	62	34	39
St. Pölten	-	?	58	79	87
Vienna	-	57	95	54	92
Villach	-	24	35	25	29
Barcelona	-	86	-	47	74
Basel	11	22	23	16	15
Belfast	16	7	33	8	5
Berlin	60	91	117	62	74
Birmingham	2	1	5	4	5
Bristol	7	1	9	12	4
Brussels	52	153	163	127	67
Budapest	-	-	-	178	160
Chemnitz	41	20	35	12	59
Copenhagen	-	59	91	?	?
Dresden	53	36	53	27	78
Edinburgh	3	8	2	0	3
Frankfurt	42	44	51	19	48
Gothenburg	1	10	12	2	7
Hamburg	33	43	62	20	45
Karlsruhe	6	33	33	25	22
Leeds	3	3	9	4	15
Leipzig	109	63	92	49	82

9 Bei den Werten wurden bereits die Korrekturfaktoren berücksichtigt. Diese sind aus den Tabellen im Anhang zu ersehen.

10 Nähere Details zur Unterscheidung zwischen verkehrsbelasteten Stationen und sonstigen urbanen Messstationen siehe Tabellen am Ende des Berichtes bzw. div. grafische Auswertungen.

11 For the number of exeedances the correction factors already have been considered. One can refer to the tables at the end of the report.

12 For further details for distinguishing between traffic stressed station and other urban monitoring stations see tables at the end of the report and graphical evaluations.

	PM_{10} number of days >50 µg/m³				
	2001	2002	2003	2004	2005
Liverpool	4	2	1	14	5
Lisbon	230	222	183	147	?
London	28	29	61	107	121
Luxemburg	1	4	17	-	-
Lyon	-	83	124	71	153
Madrid	-	98	-	121	159
Mannheim	25	44	36	41	43
Milan	148	177	137	139	152
Munich	64	75	123	59	107
Riga	57	74	105	160	88
Rhine-/Ruhr Area	40	48	58	38	21
Rotterdam	98	103	123	54	30
Sofia	-	-	225	178	162
Stockholm	101	113	80	80	80
Warsaw	-	-	89	184	162
Wiesbaden	15	35	19	11	18
Zagreb	-	-	-	75	89
Zurich	18	23	38	23	15

Anzahl der Überschreitungen des 1h-Grenzwertes für NO_2 von 200 µg/m³ im Jahr 2005

Beurteilungsbasis: Anzahl der Überschreitungen an der höchstbelasteten Station eines Messgebietes

Number exeedances of the NO_2 1h mean value of 200 µg/m³ in 2005

based on the number of exeedances at the peak stressed monitoring station of a region

	NO_2	
	number of 1 h mean values >200 µg/m³	
	2004	2005
Linz	0	1
Bludenz	0	0
Dornbirn	-	0
Graz	0	0
Hallein	0	0
Innsbruck	0	0
Klagenfurt	-	1
Region Leo-ben	0	0
Salzburg	0	0
St. Pölten	0	0
Vienna	8	24
Villach	0	0
Barcelona	13	-
Basel	0	0
Belfast	0	4
Berlin	0	-
Birmingham	0	2
Bristol	0	22
Brussels	24	90
Budapest	1	25
Chemnitz	1	0
Copenhagen	-	-
Dresden	0	0
Edinburgh	0	0

	NO_2	
	number of 1 h mean values >200 µg/m³	
	2004	2005
Frankfurt	0	10
Gothenburg	2	2
Hamburg	0	15
Karlsruhe	5	0
Leeds	0	0
Leipzig	1	0
Liverpool	0	0
Lisbon	52	?
London	542	853
Luxemburg	-	-
Lyon	35	126
Madrid	83	122
Mannheim	0	0
Milan	47	25
Munich	11	35
Riga	0	0
Rhine-/Ruhr Area	0	0
Rotterdam	10	1
Sofia	7	25
Stockholm	0	2
Warsaw	0	0
Wiesbaden	0	3
Zagreb	0	0
Zurich	0	0

Anzahl der Messstellen *Number of monitoring stations*

Country	Monitored Area	SO_2	PM_{10}	NO	NO_2	CO	O_3
Austria	Bludenz	-	1	1	1	-	-
	Dornbirn	1	1	1	1	1	-
	Graz	4	4	5	5	3	4
	Hallein	2	1	2	2	1	1
	Innsbruck	1	2	2	2	1	2
	Klagenfurt	1	2	2	2	2	2
	Region Leoben	3	3	3	3	1	1
	Linz	6	6	8	8	8	3
	Salzburg	3	3	3	3	2	2
	St. Pölten	1	2	2	2	1	1
	Vienna	10	13	17	17	4	5
	Villach	1	1	1	1	1	1
Belgium	Brussels	8	6	11	11	8	7
Bulgaria	Sofia	5	5	4	5	4	3
Croatia	Zagreb	5	2	-	5	1	5
Denmark	Copenhagen	1	3	3	3	3	3
France	Lyon	10	8	12	12	5	6
Germany	Berlin	8	11	16	16	10	8
	Chemnitz	1	3	3	3	1	1
	Dresden	2	4	4	4	1	3
	Frankfurt	4	5	5	5	4	4
	Hamburg	13	12	17	17	7	6
	Karlsruhe	1	3	3	3	1	1
	Leipzig	1	3	3	3	1	1
	Mannheim	3	4	4	4	4	3
	Munich	4	6	7	7	6	3
	Rhine/Ruhr Area	16	27	26	26	1	18
	Wiesbaden	1	2	2	2	2	1
Hungary	Budapest	7	9	11	11	10	9
Italy	Milan	1	2	8	8	5	3
Latvia	Riga	3	1	-	3	1	3
Luxemburg	Luxemburg (2003)	2	1	2	2	1	2
Netherlands	Rotterdam	9	5	6	6	2	5
Poland	Warsaw	11	11	8	10	5	4
Portugal	Lisbon (2004)	5	3	7	7	7	4
Spain	Barcelona	4	5	5	5	5	5
	Madrid	26	25	26	26	24	25
Switzerland	Basel	1	1	1	1	-	1
	Zurich	1	1	1	1	1	1
Sweden	Gothenburg	3	1	1	3	1	3
	Stockholm	2	4	-	4	1	1

Anzahl der Messstellen Number of monitoring stations

Country	Monitored Area	SO_2	PM_{10}	NO	NO_2	CO	O_3
Spain	Barcelona	4	5	5	3	5	5
	Madrid	26	25	26	26	24	25
Switzerland	Basel	1	1	1	1	-	1
	Zurich	1	1	1	1	1	1
Sweden	Gothenburg	3	1	1	3	1	3
	Stockholm	2	4	-	4	1	1
U.K.	Belfast	2	2	1	1	1	1
	Birmingham	2	2	2	2	2	2
	Bristol	1	1	2	2	1	1
	Edinburgh	1	1	1	1	1	1
	Leeds	1	1	1	1	1	1
	Liverpool	1	1	1	1	1	1
	London	13	11	23	23	17	15

Quellen für die Immissionsdaten Sources for the immission-data

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Luftgütevergleich

2005

Jahresmittelwert (Gebietsmittel)

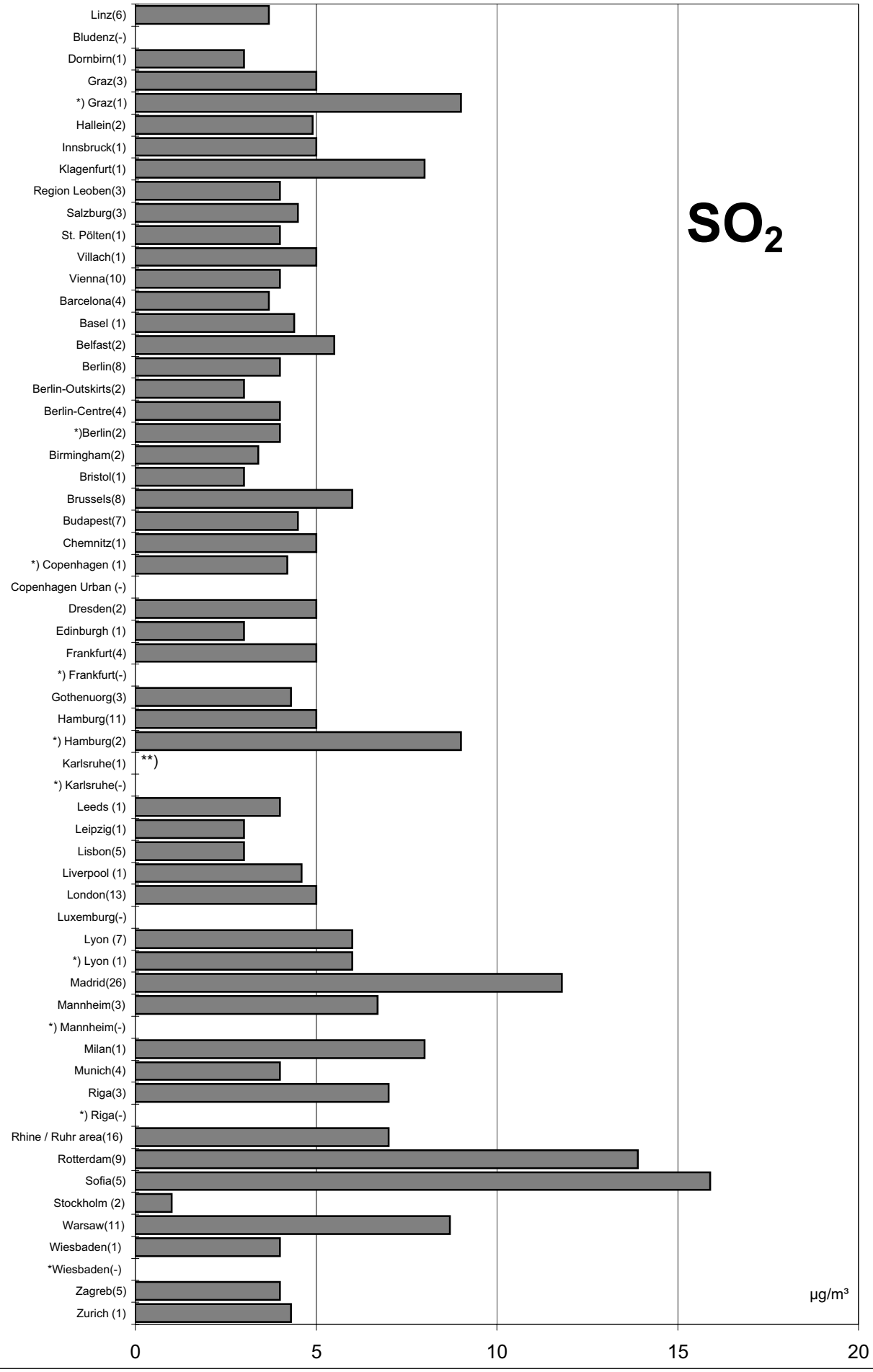
Comparison of The Air Quality

2005

Annual Mean Values

Comparison of The Air Quality in 2005

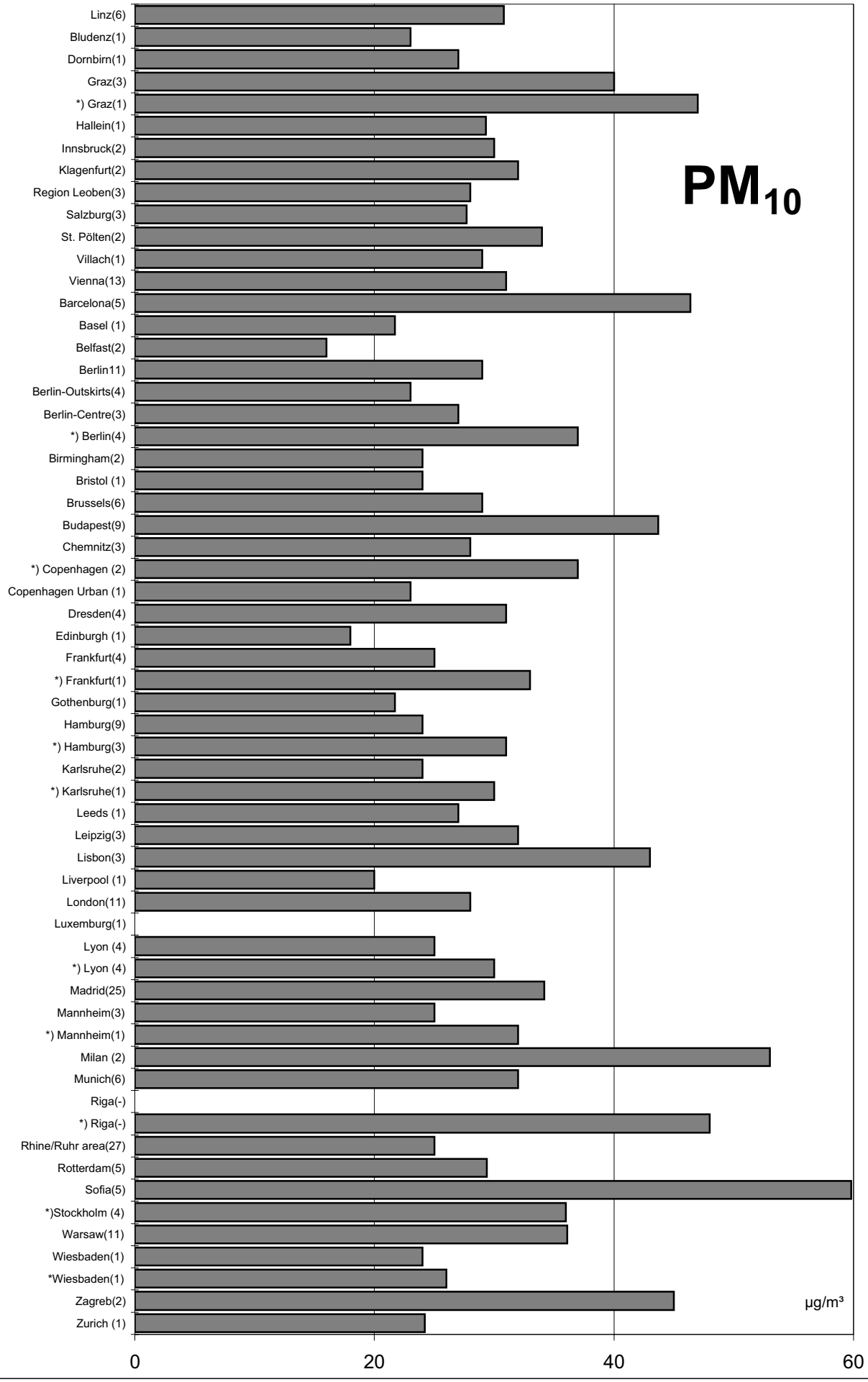
annual mean values (in parentheses: number of monitoring stations)



*) traffic-influenced monitoring stations
**) no data

Comparison of The Air Quality in 2005

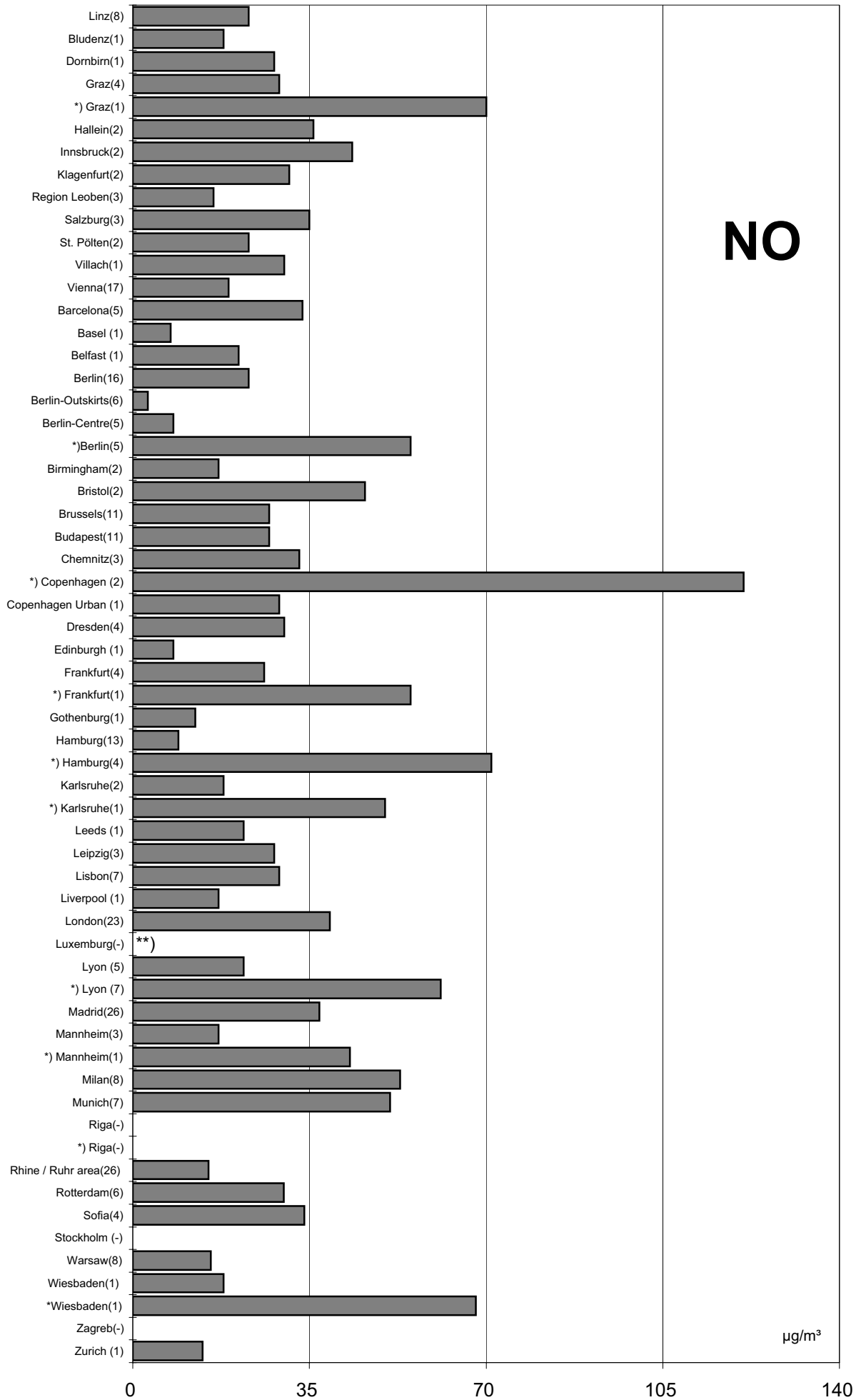
annual mean values (in parentheses: number of monitoring stations)



*) traffic-influenced monitoring stations
**) no data

Comparison of The Air Quality in 2005

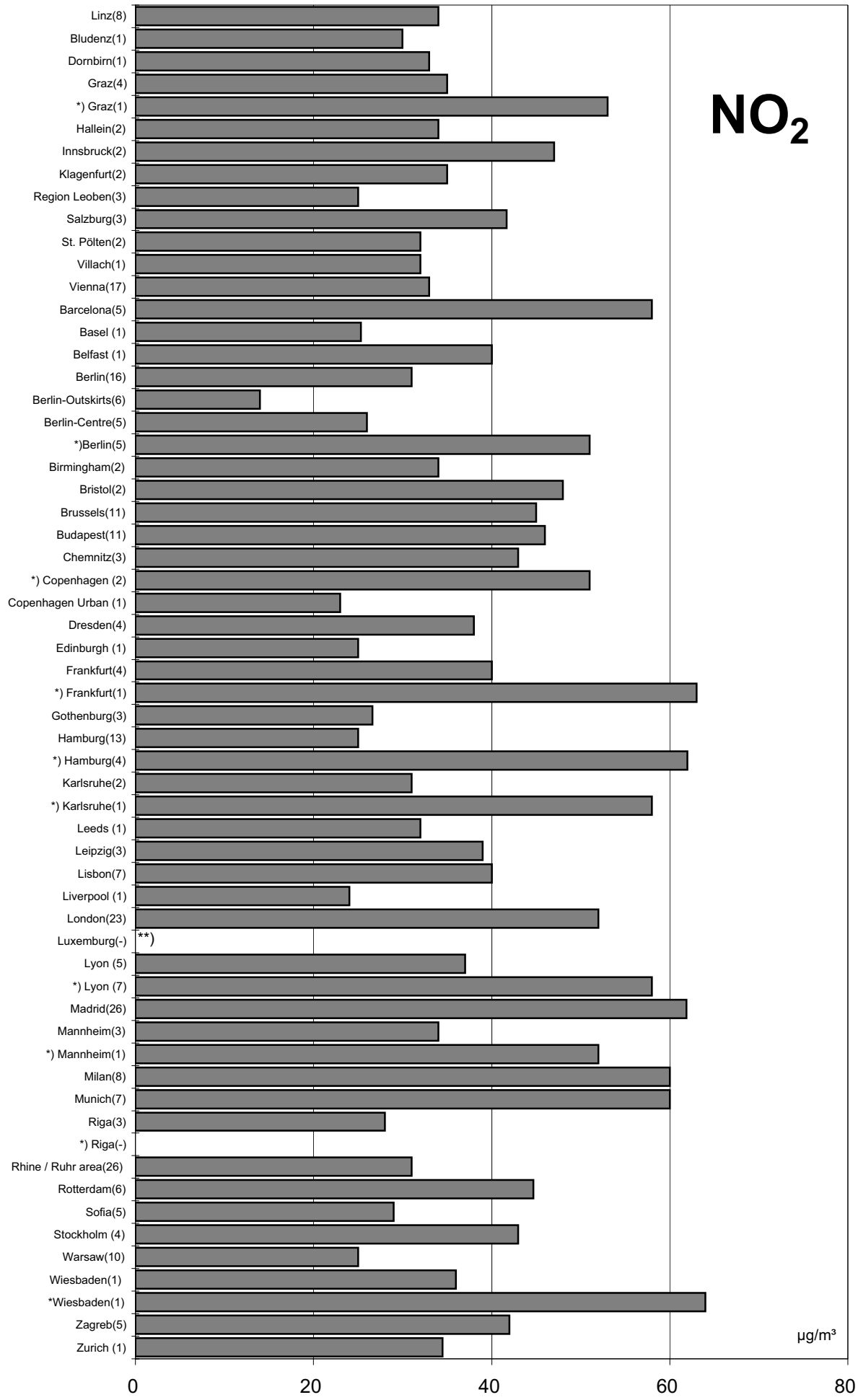
annual mean values (in parentheses: number of monitoring



*) traffic-influenced monitoring stations
**) no data

Comparison of The Air Quality in 2005

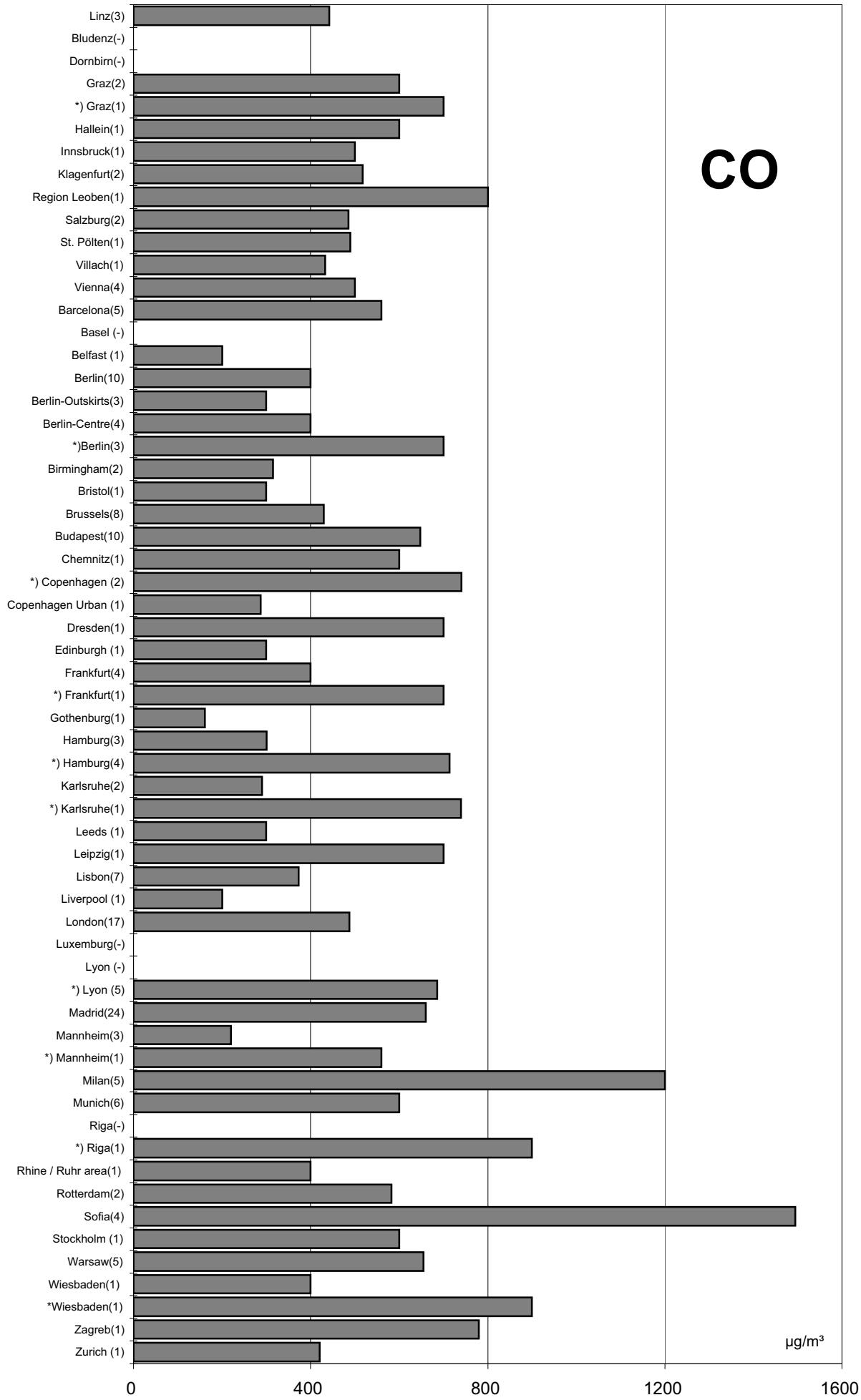
annual mean values (in parentheses: number of monitoring



*) traffic-influenced monitoring stations
**) no data

Comparison of The Air Quality in 2005

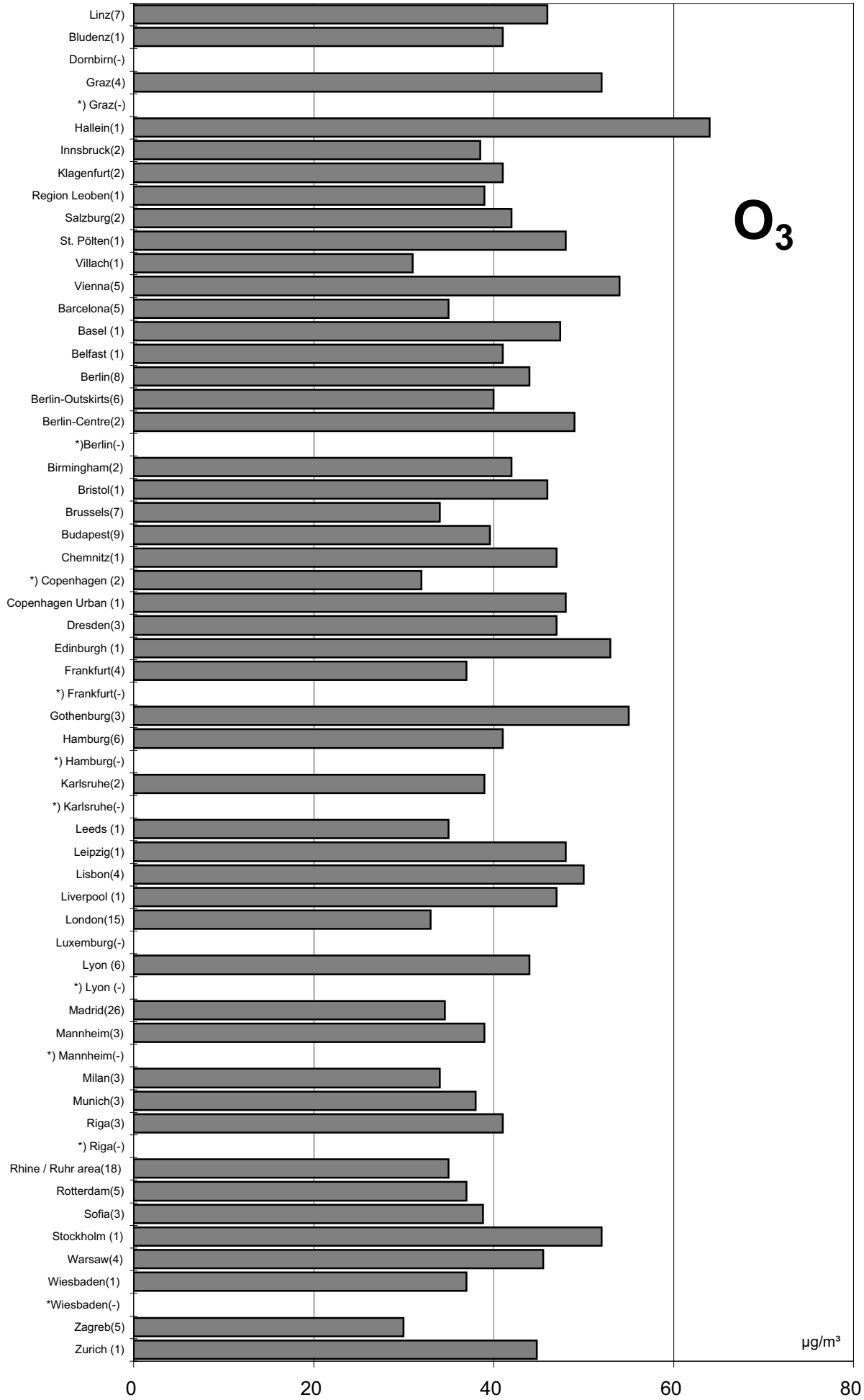
annual mean values (in parentheses: number of monitoring



*) traffic-influenced monitoring stations
**) no data

Comparison of The Air Quality in 2005

annual mean values (in parentheses: number of monitoring



*) traffic-influenced monitoring stations
**) no data

Luftgütevergleich

2005

max. Monatsmittelwert

Comparison of The Air Quality

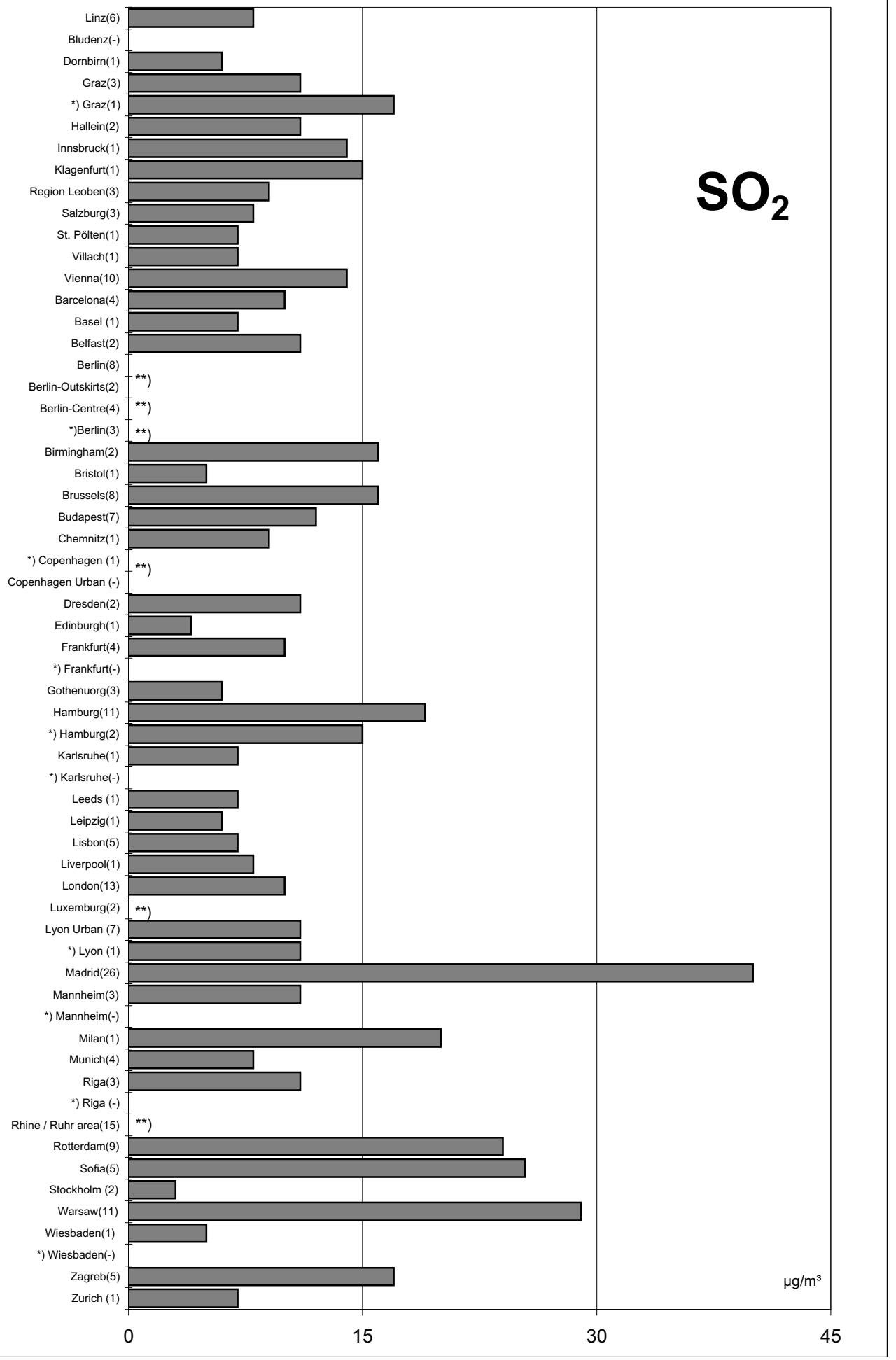
2005

Max. Monthly Mean Values

Comparison of The Air Quality in 2005

max. monthly mean values (max. stressed monitoring station)

(in parentheses: number of monitoring stations)



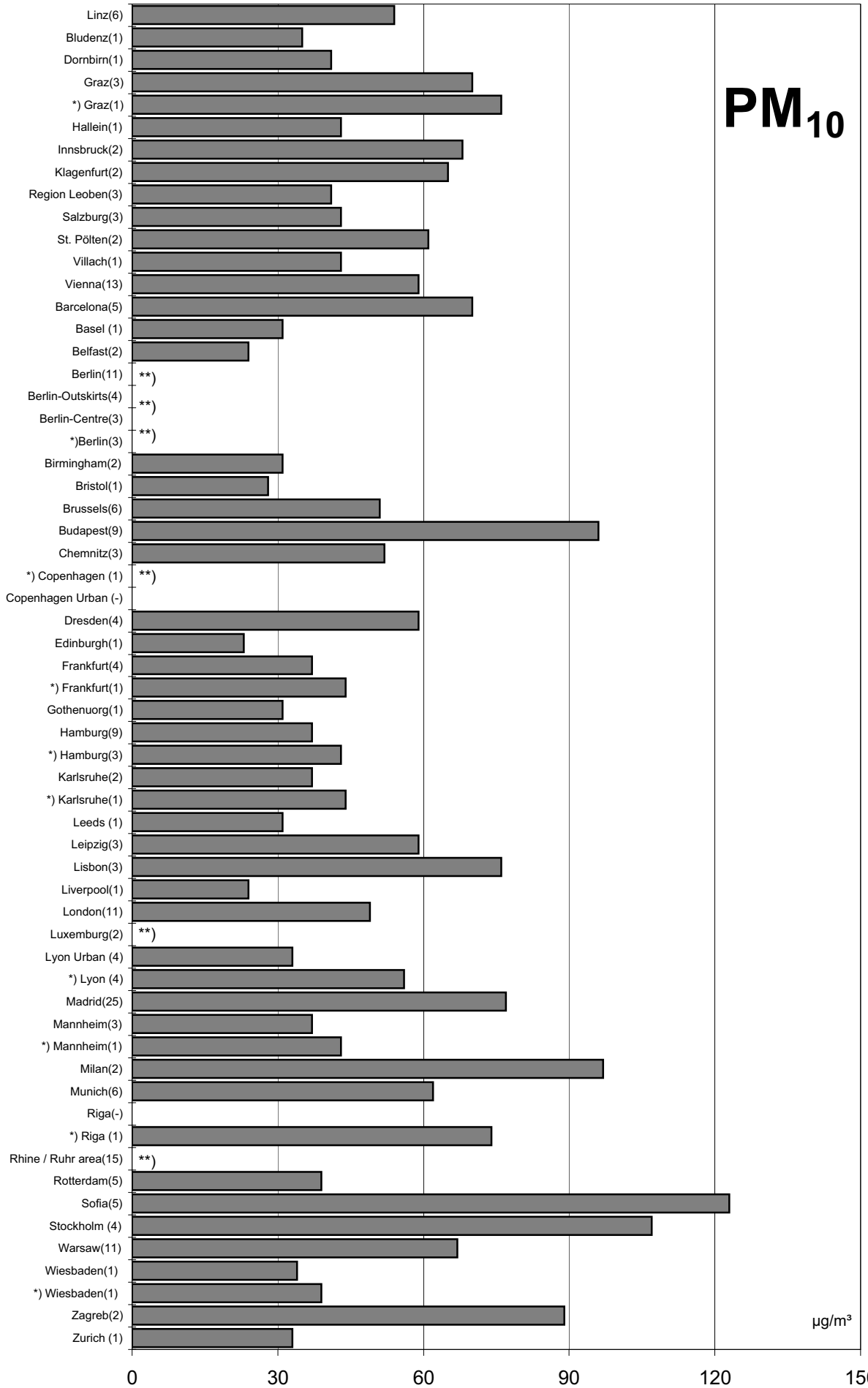
*) traffic-influenced monitoring stations

**) no data

Comparison of The Air Quality in 2005

max. monthly mean values (max. stressed monitoring station)

(in parentheses: number of monitoring stations)



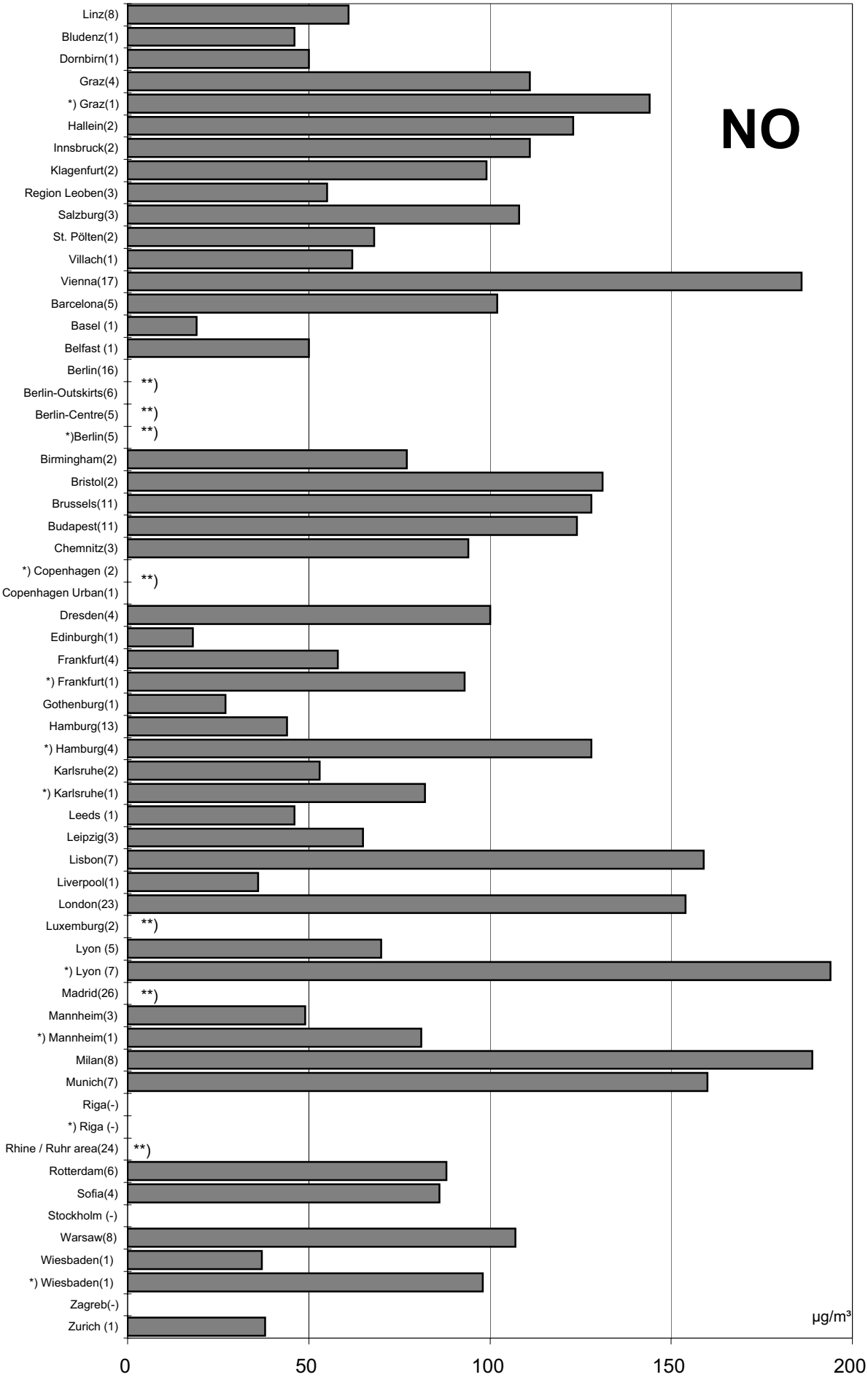
*) traffic-influenced monitoring stations

**) no data

Comparison of The Air Quality in 2005

max. monthly mean values (max. stressed monitoring station)

(in parentheses: number of monitoring stations)

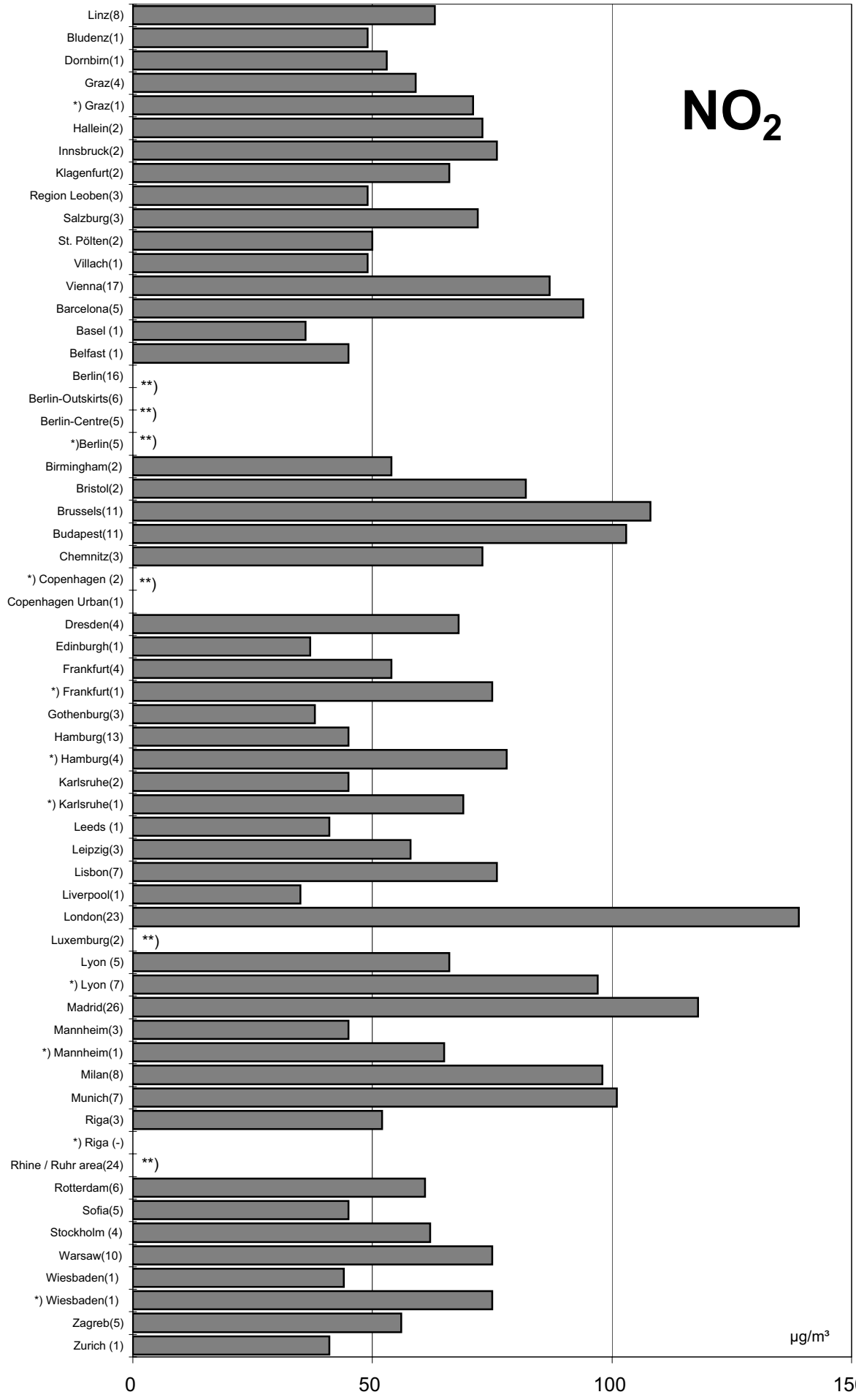


*) traffic-influenced monitoring stations
**) no data

Comparison of The Air Quality in 2005

max. monthly mean values (max. stressed monitoring station)

(in parentheses: number of monitoring stations)

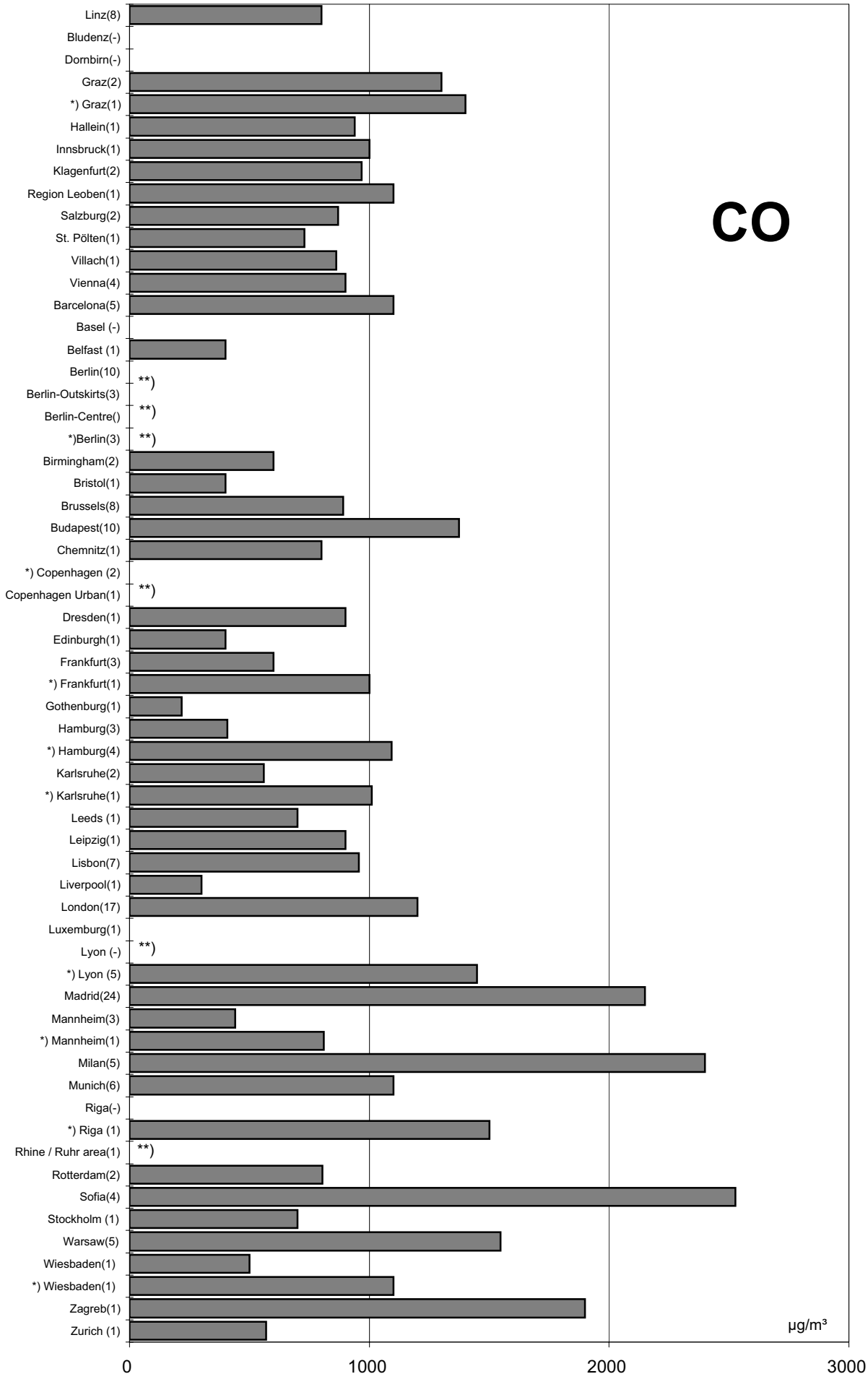


*) traffic-influenced monitoring stations
**) no data

Comparison of The Air Quality in 2005

max. monthly mean values (max. stressed monitoring station)

(in parentheses: number of monitoring stations)



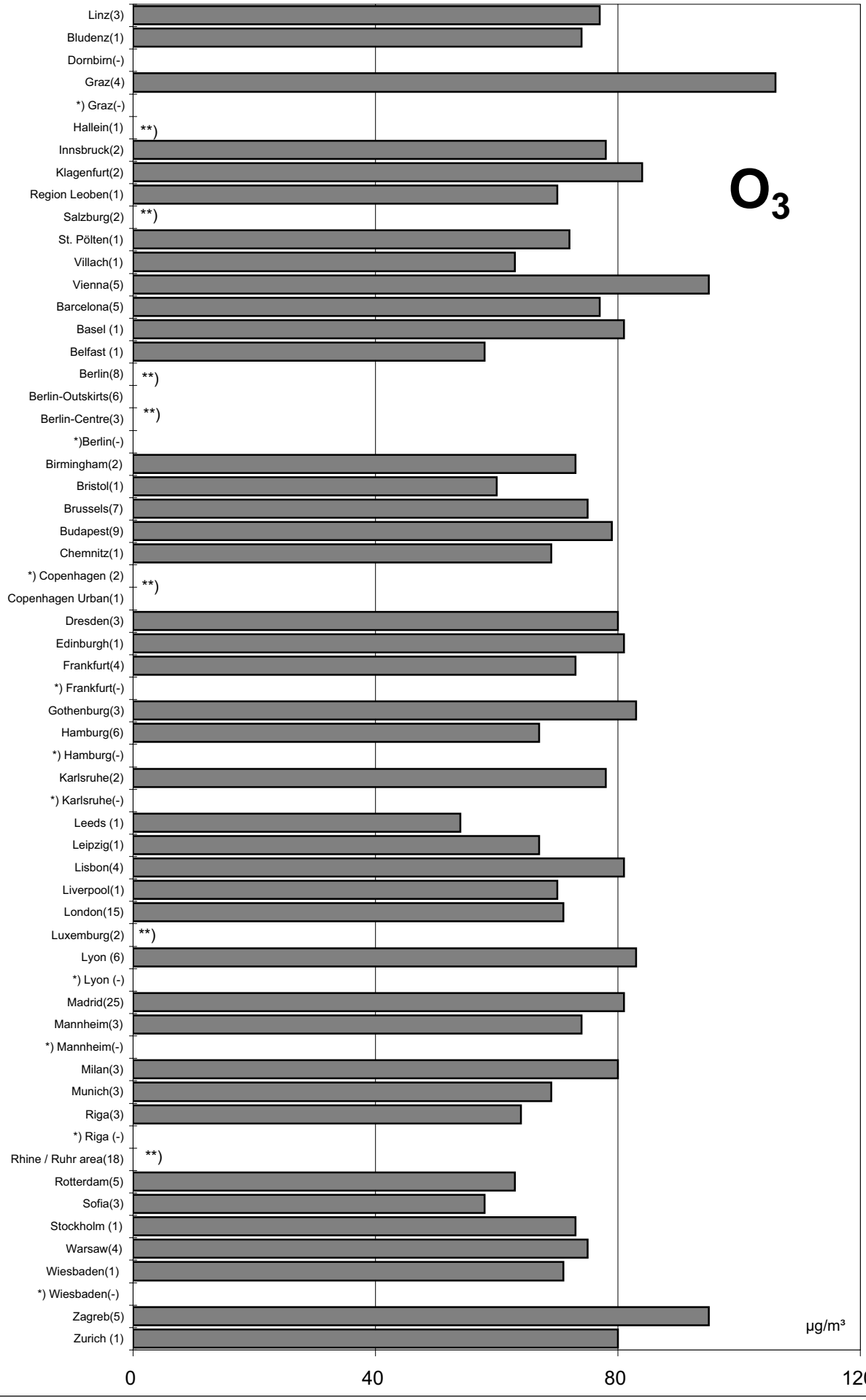
*) traffic-influenced monitoring stations

**) no data

Comparison of The Air Quality in 2005

max. monthly mean values (max. stressed monitoring station)

(in parentheses: number of monitoring stations)



*) traffic-influenced monitoring stations
**) no data

Luftgütevergleich

2005

max. Tagesmittelwert

Comparison of The Air Quality

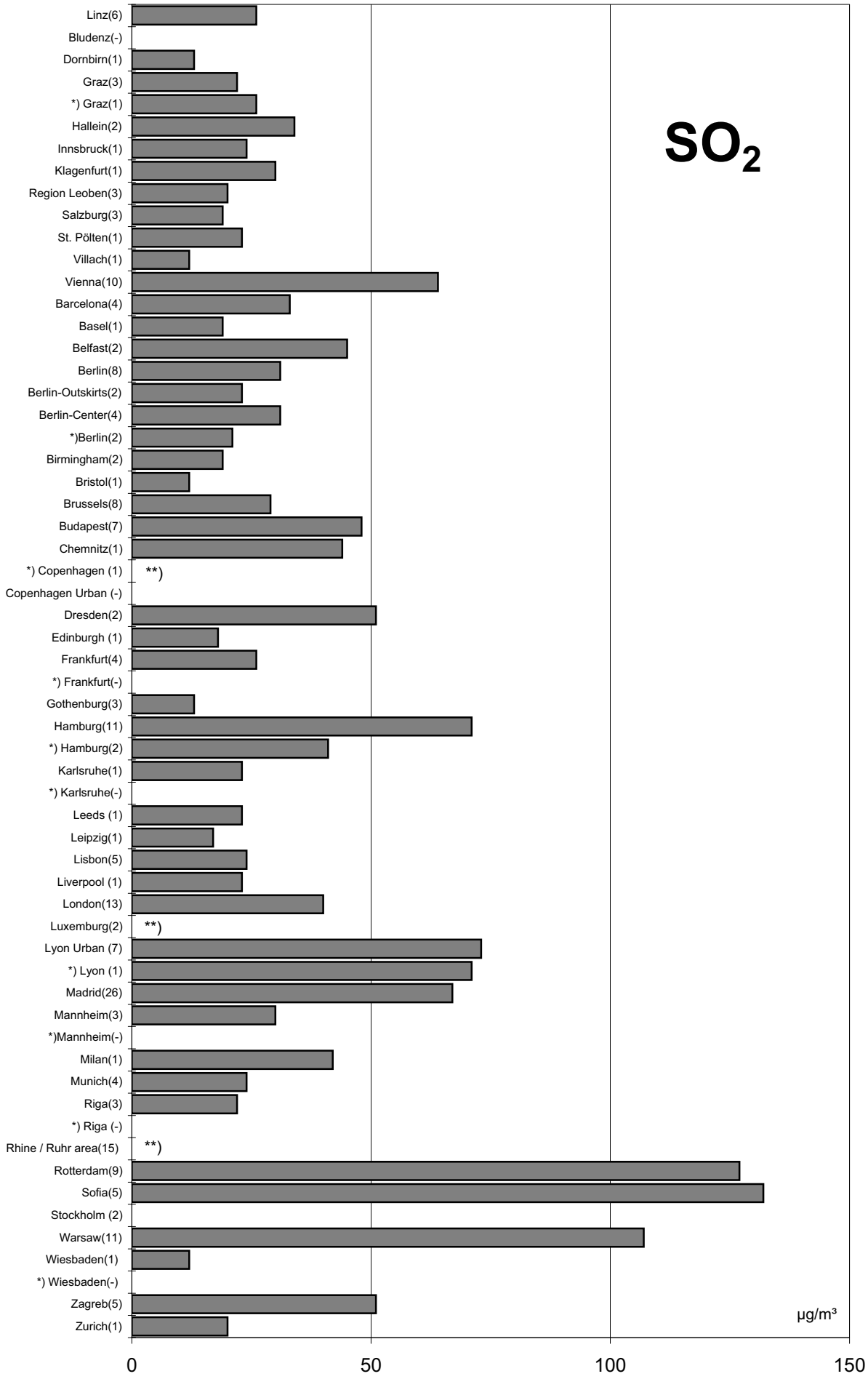
2005

Max. Daily Mean Values

Comparison of The Air Quality in 2005

max. daily mean values (max. stressed monitoring station)

(in parentheses: number of monitoring stations)

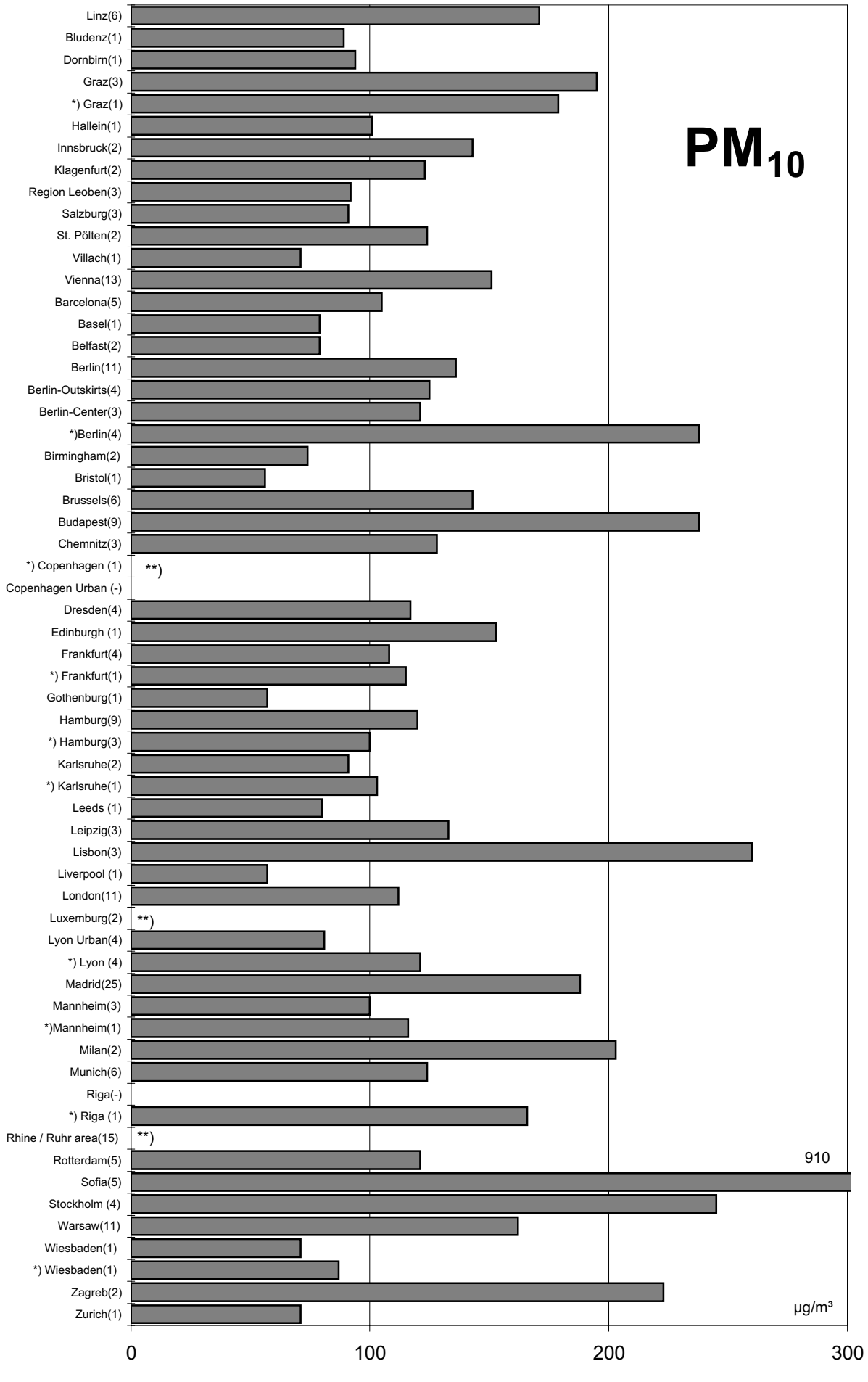


*) traffic-influenced monitoring stations
**)no data

Comparison of The Air Quality in 2005

max. daily mean values (max. stressed monitoring station)

(in parentheses: number of monitoring stations)



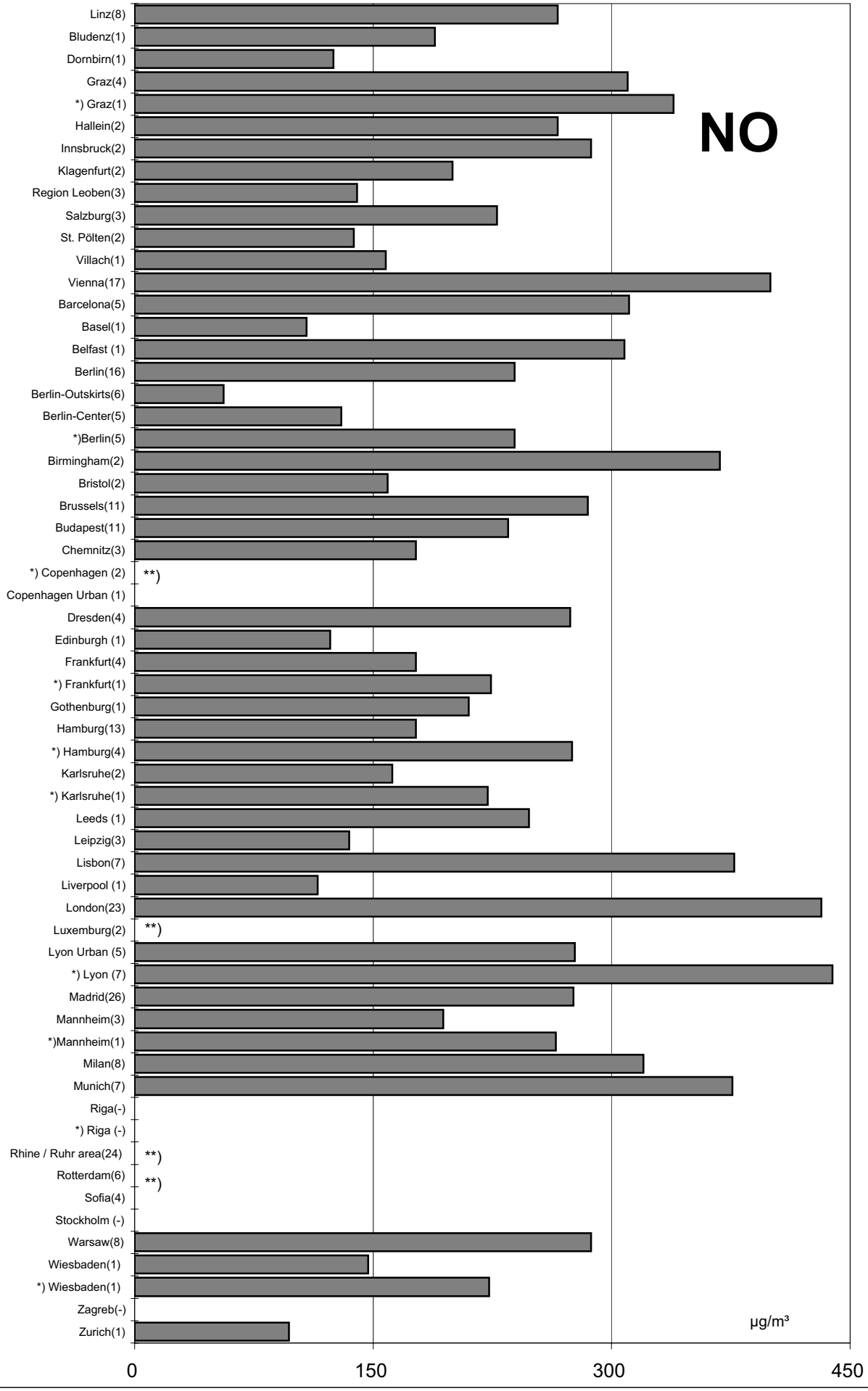
*) traffic-influenced monitoring stations

**)no data

Comparison of The Air Quality in 2005

max. daily mean values (max. stressed monitoring station)

(in parentheses: number of monitoring stations)

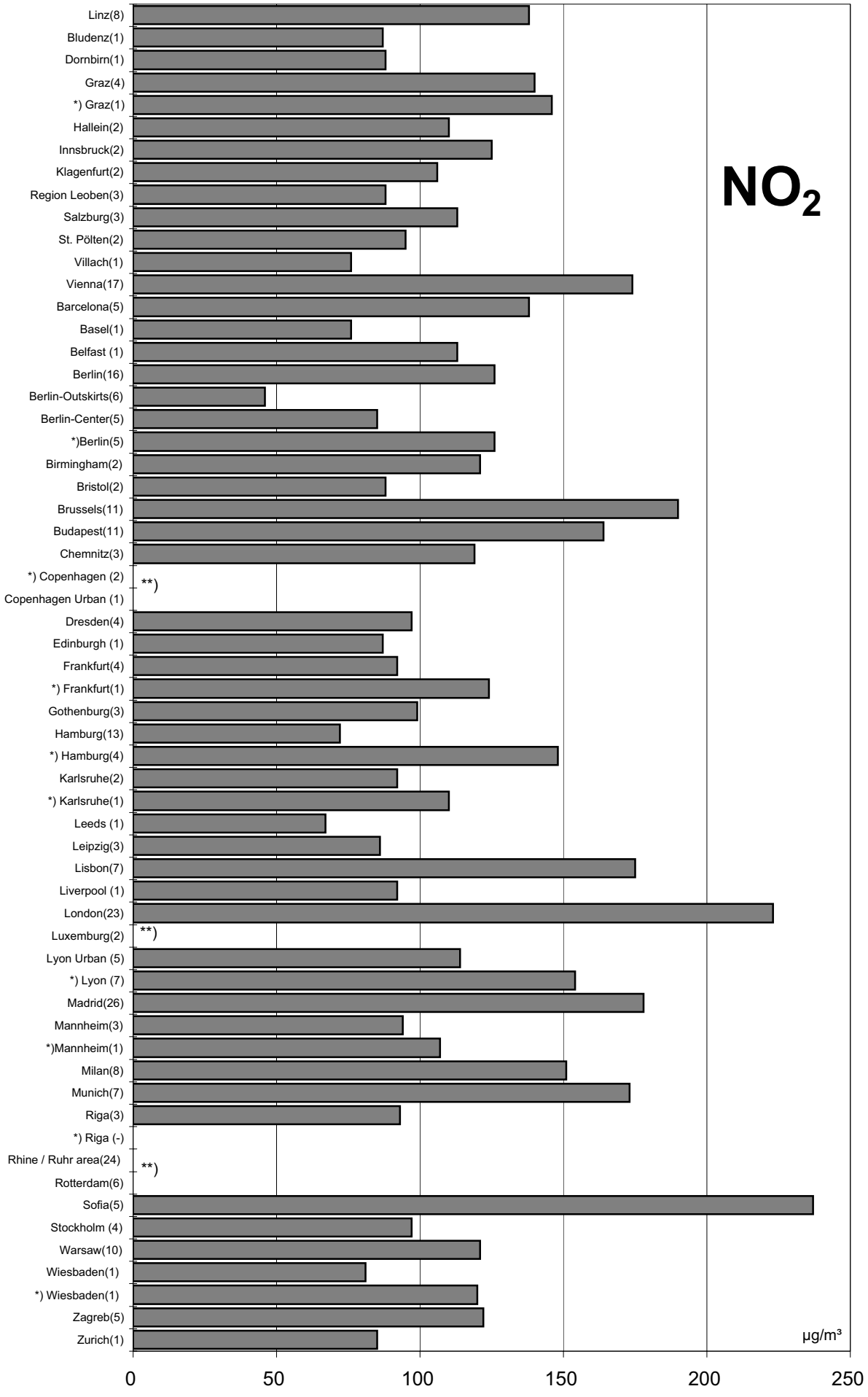


*) traffic-influenced monitoring stations
**)no data

Comparison of The Air Quality in 2005

max. daily mean values (max. stressed monitoring station)

(in parentheses: number of monitoring stations)

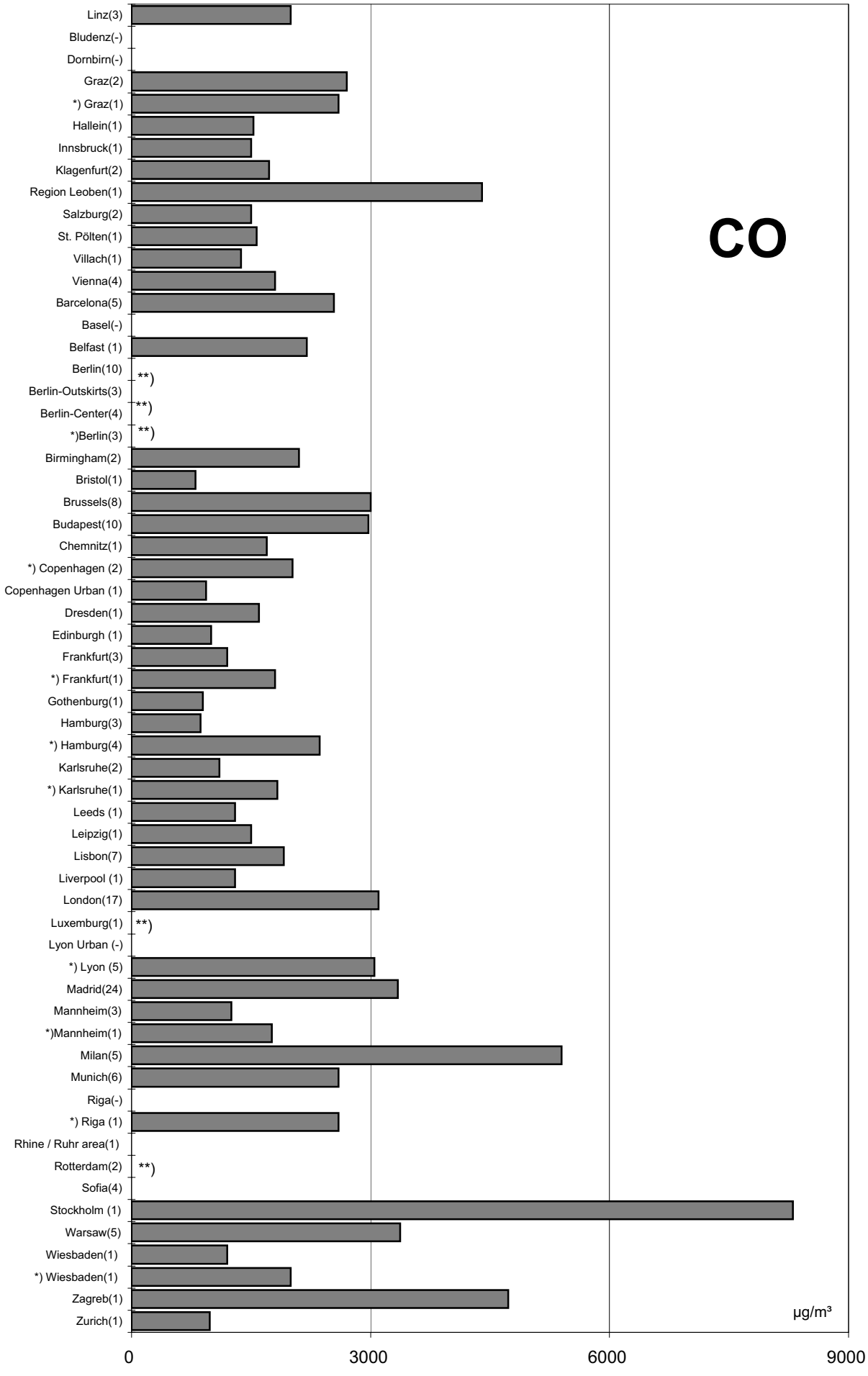


*) traffic-influenced monitoring stations
**)no data

Comparison of The Air Quality in 2005

max. daily mean values (max. stressed monitoring station)

(in parentheses: number of monitoring stations)

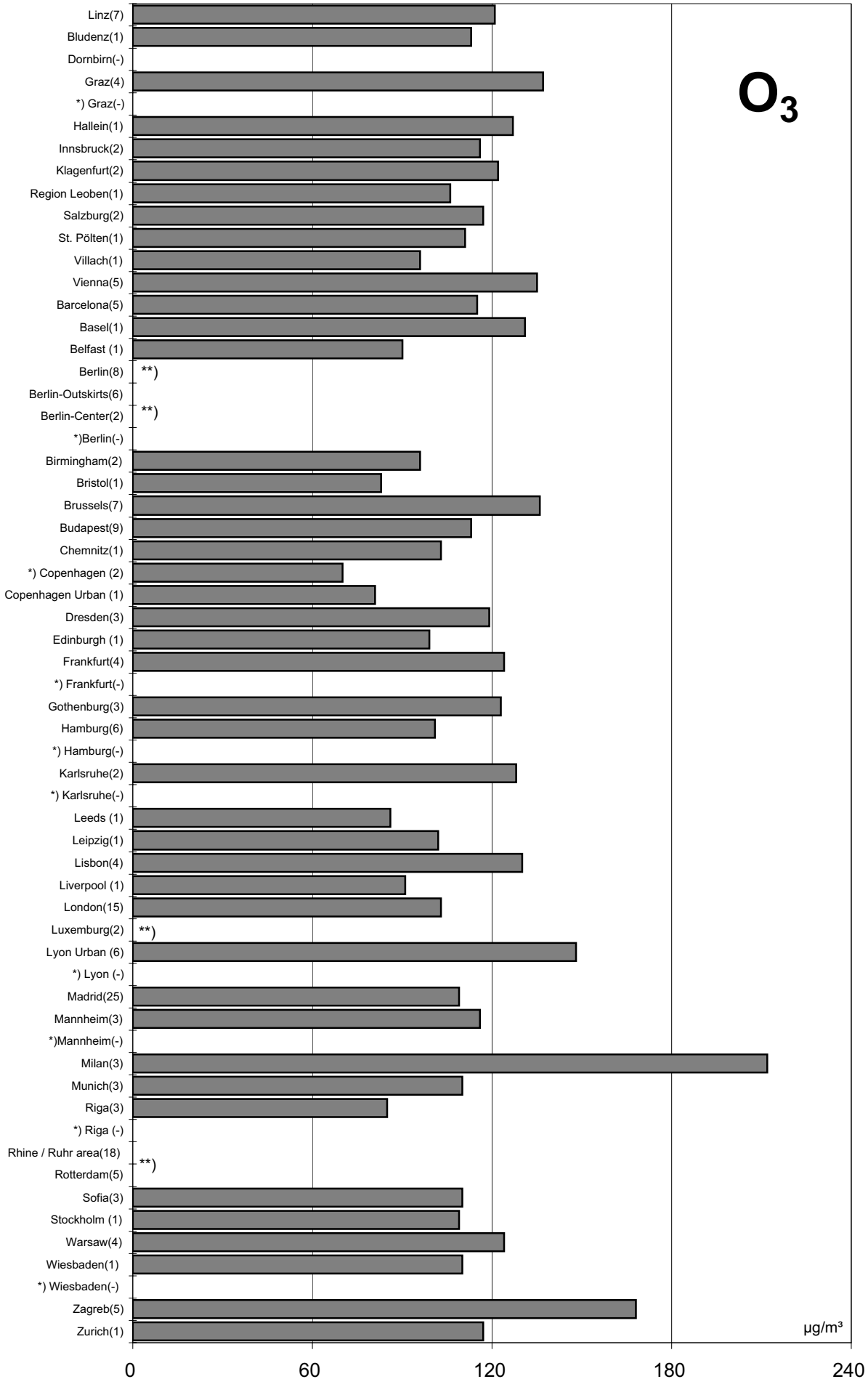


*) traffic-influenced monitoring stations
**)no data

Comparison of The Air Quality in 2005

max. daily mean values (max. stressed monitoring station)

(in parentheses: number of monitoring stations)



*) traffic-influenced monitoring stations
**)no data

Luftgütevergleich

2004

max. 3h-Mittelwerte

Comparison of The Air Quality

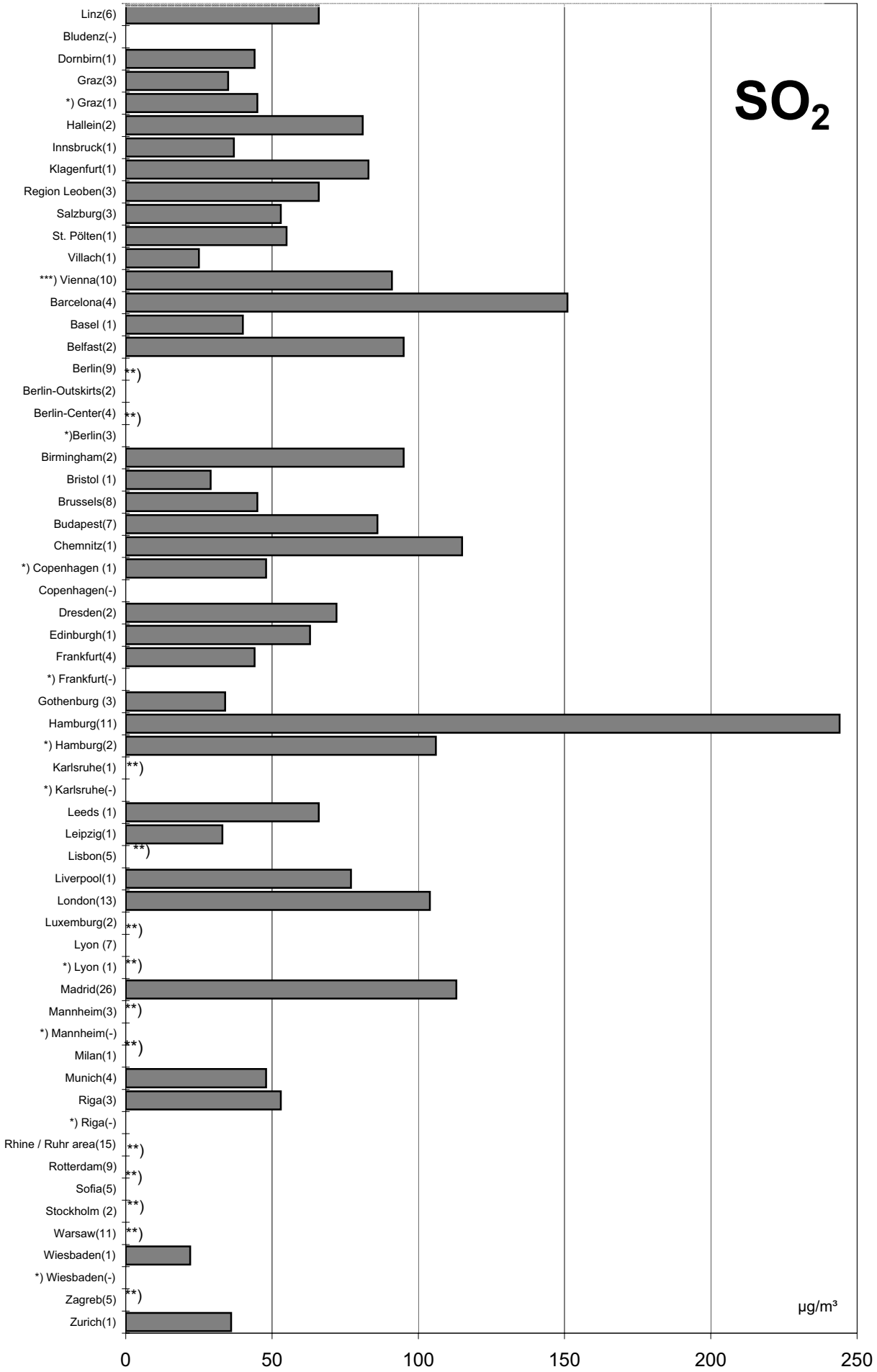
2004

Max. 3h- Mean Values

Comparison of The Air Quality in 2005

max. 3h mean values (max. stressed monitoring station)

(in parentheses: number of monitoring stations)

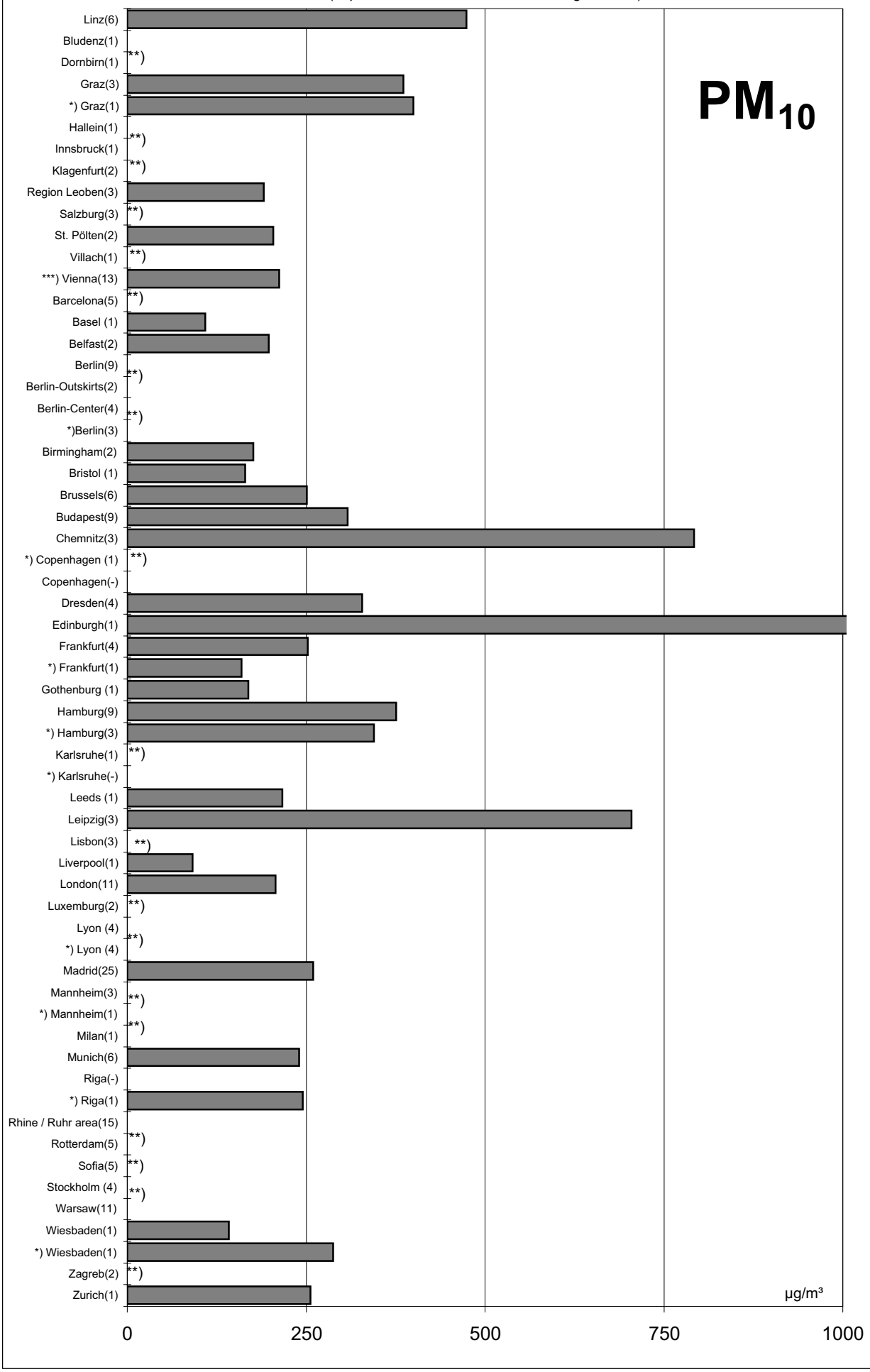


*) traffic-influenced monitoring stations
**) no data
***)max. 99,9 Percentile

Comparison of The Air Quality in 2005

max. 3h mean values (max. stressed monitoring station)

(in parentheses: number of monitoring stations)

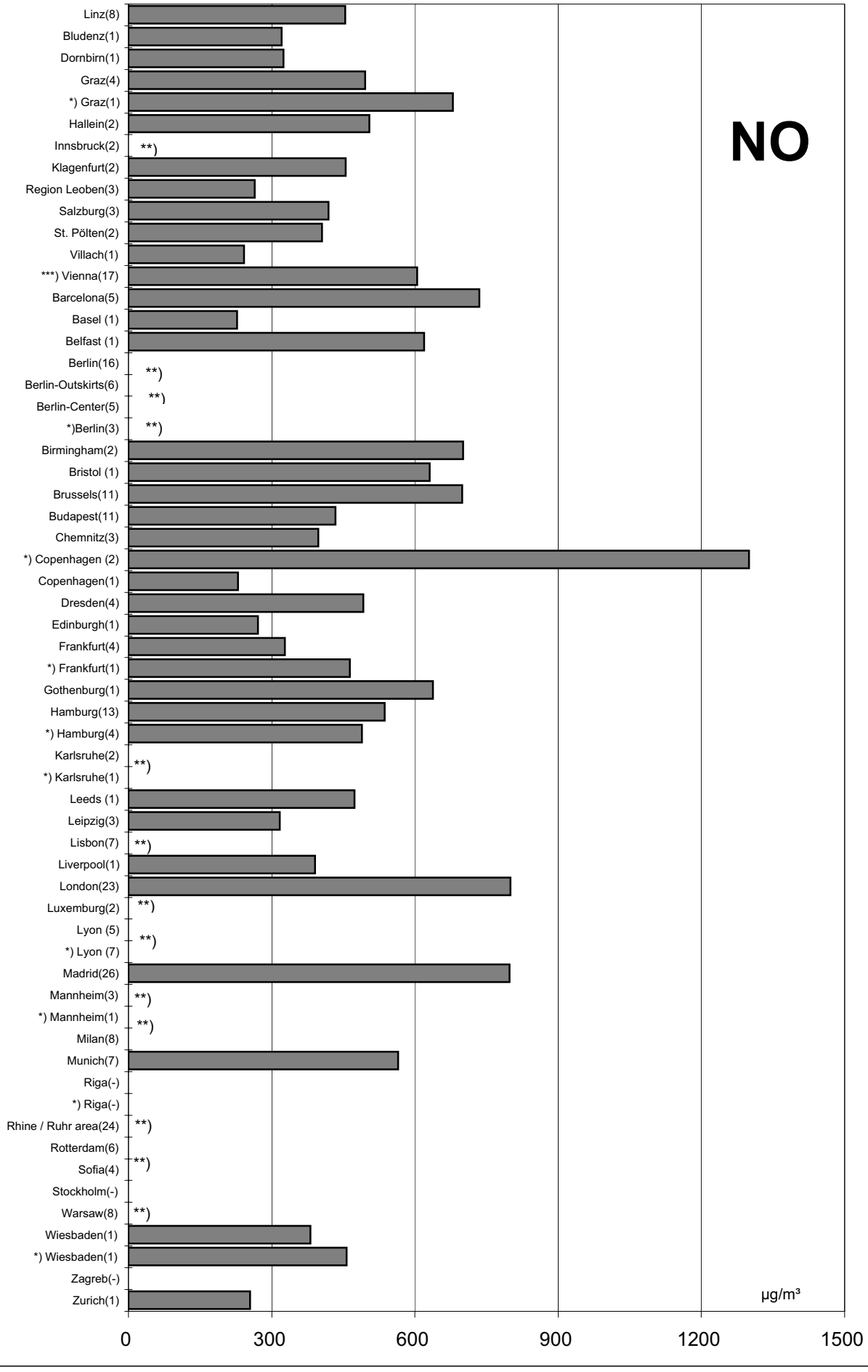


*) traffic-influenced monitoring stations
**) no data
***)max. 99,9 Percentile

Comparison of The Air Quality in 2005

max. 3h mean values (max. stressed monitoring station)

(in parentheses: number of monitoring stations)

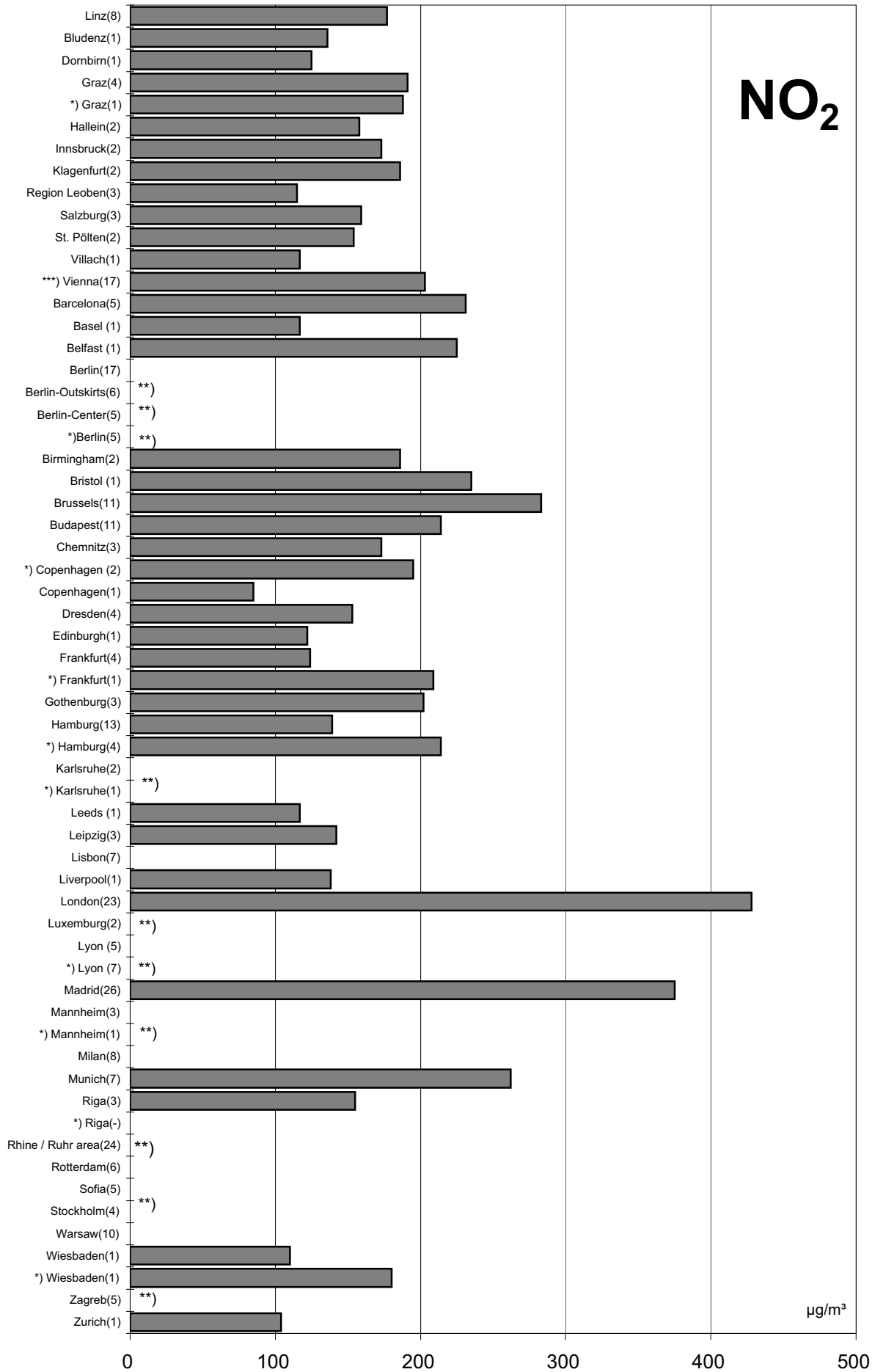


*) traffic-influenced monitoring stations
**)no data
***)max. 99,9-Percentile

Comparison of The Air Quality in 2005

max. 3h mean values (max. stressed monitoring station)

(in parentheses: number of monitoring stations

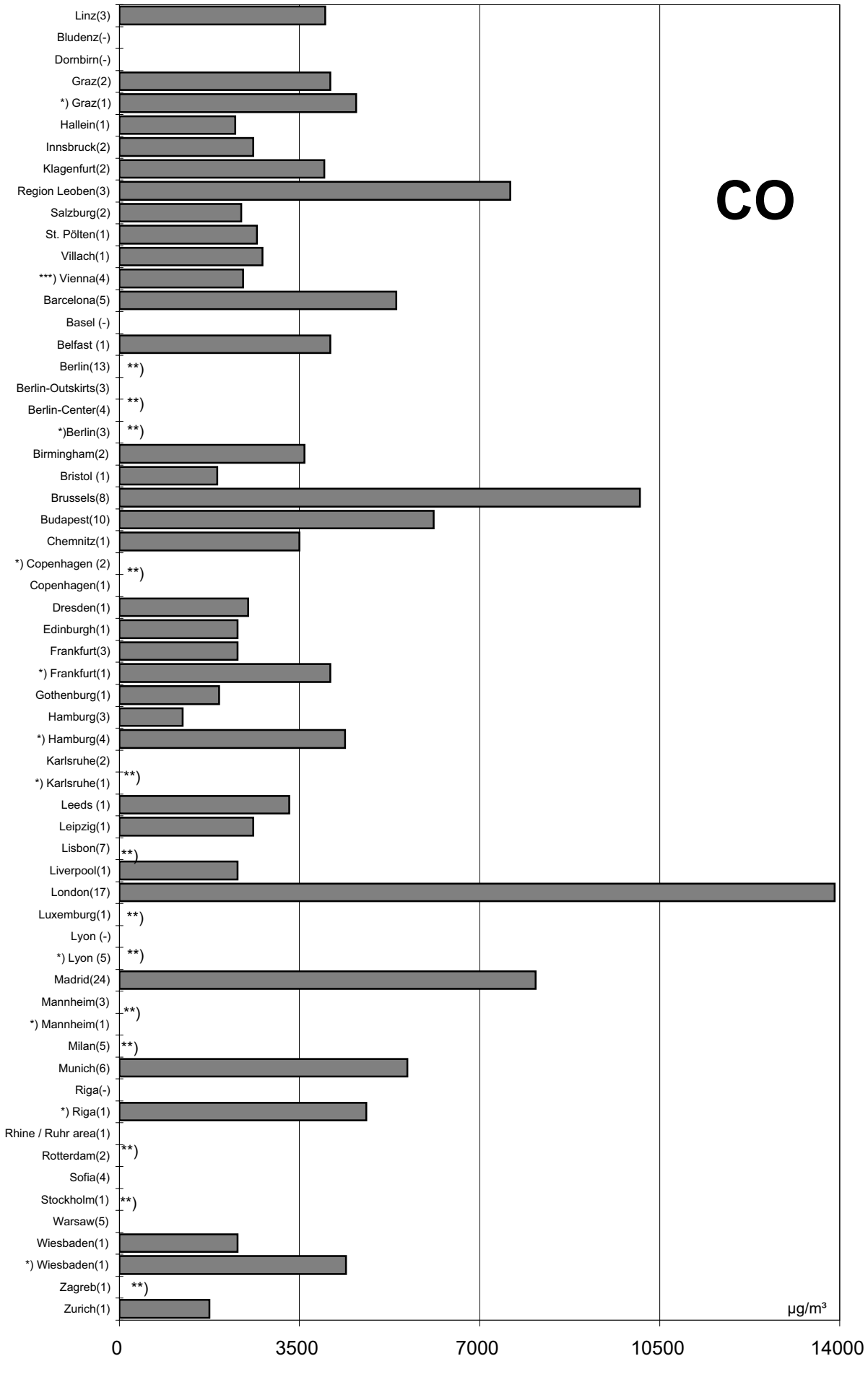


*) traffic-influenced monitoring stations
**)no data
***)max. 99,9-Percentile

Comparison of The Air Quality in 2005

max. 3h mean values (max. stressed monitoring station)

(in parentheses: number of monitoring stations)

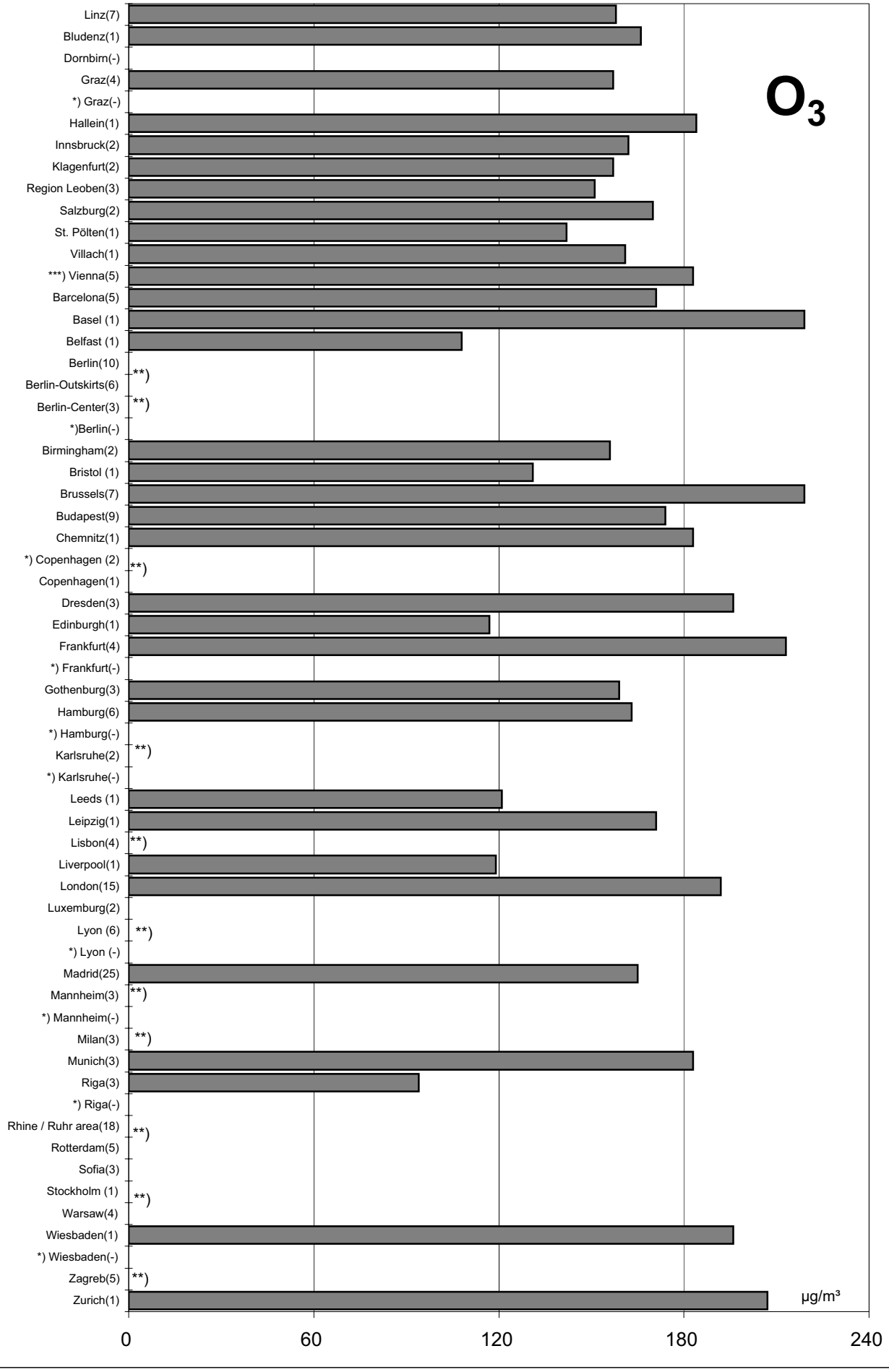


*) traffic-influenced monitoring stations
**)no data
***)max. 99,9-Percentile

Comparison of The Air Quality in 2005

max. 3h mean values (max. stressed monitoring station)

(in parentheses: number of monitoring stations)



*) traffic-influenced monitoring stations
**)no data
***)max. 99,9-Percentile

Luftgütevergleich

2005

max. 1h-Mittelwert

Comparison of The Air Quality

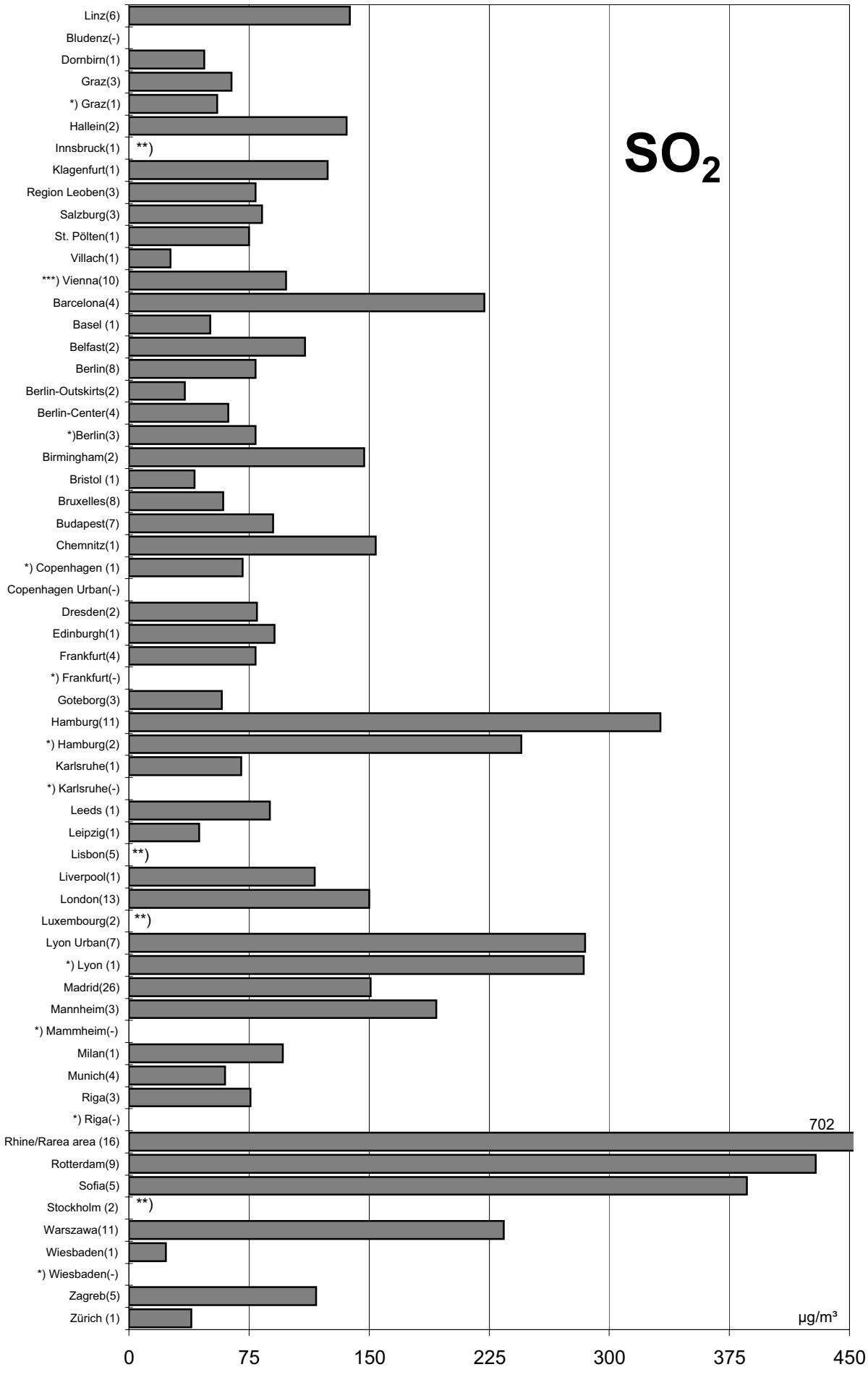
2005

Max. 1h- Mean Values

Comparison of The Air Quality in 2005

max. 1h mean values (max. stressed monitoring station)

(in parentheses: number of monitoring stations)

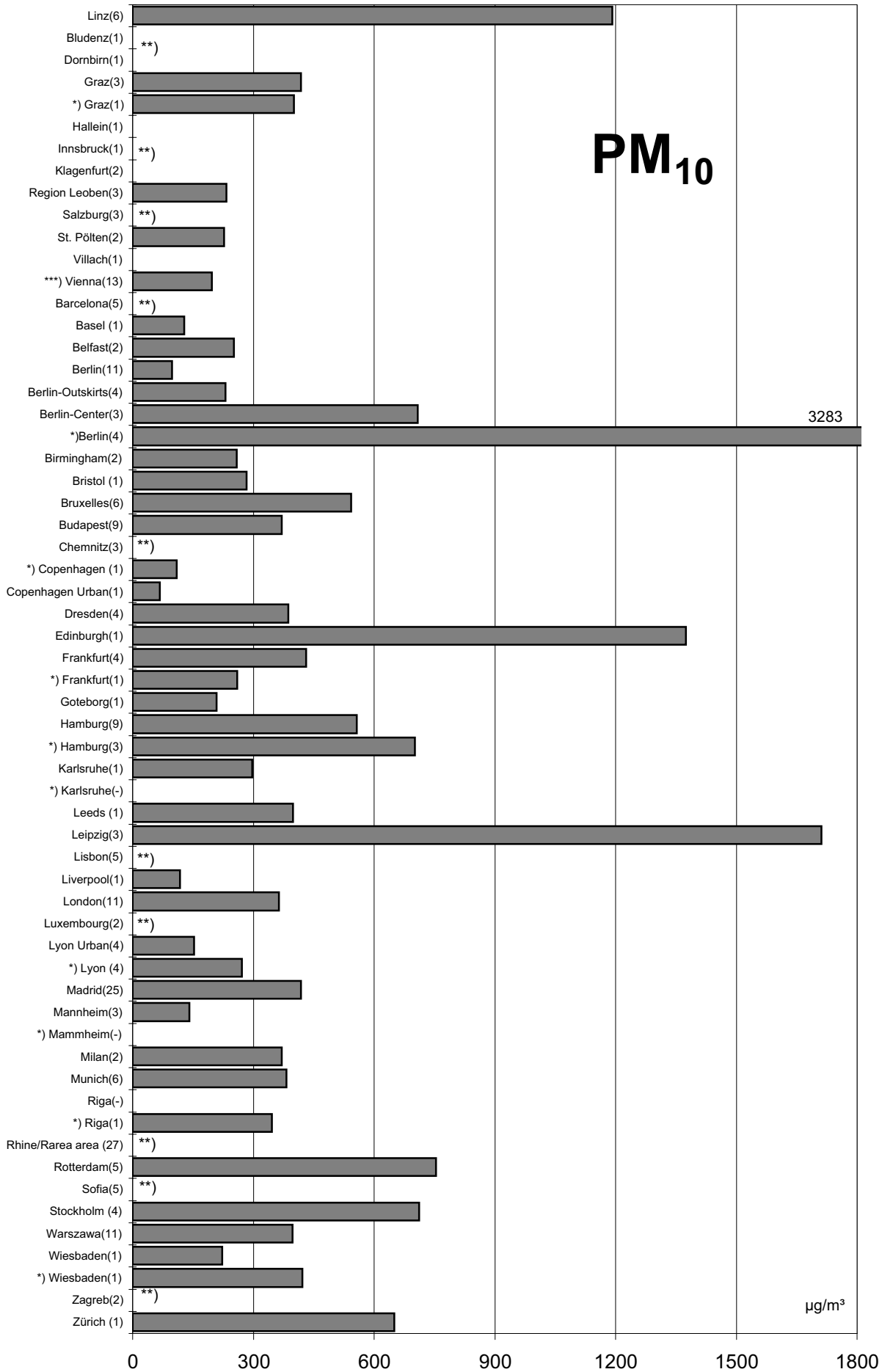


*) traffic-influenced monitoring stations
**)no data
***)max. 99,9-Percentile

Comparison of The Air Quality in 2005

max. 1h mean values (max. stressed monitoring station)

(in parentheses: number of monitoring stations)



*) traffic-influenced monitoring stations

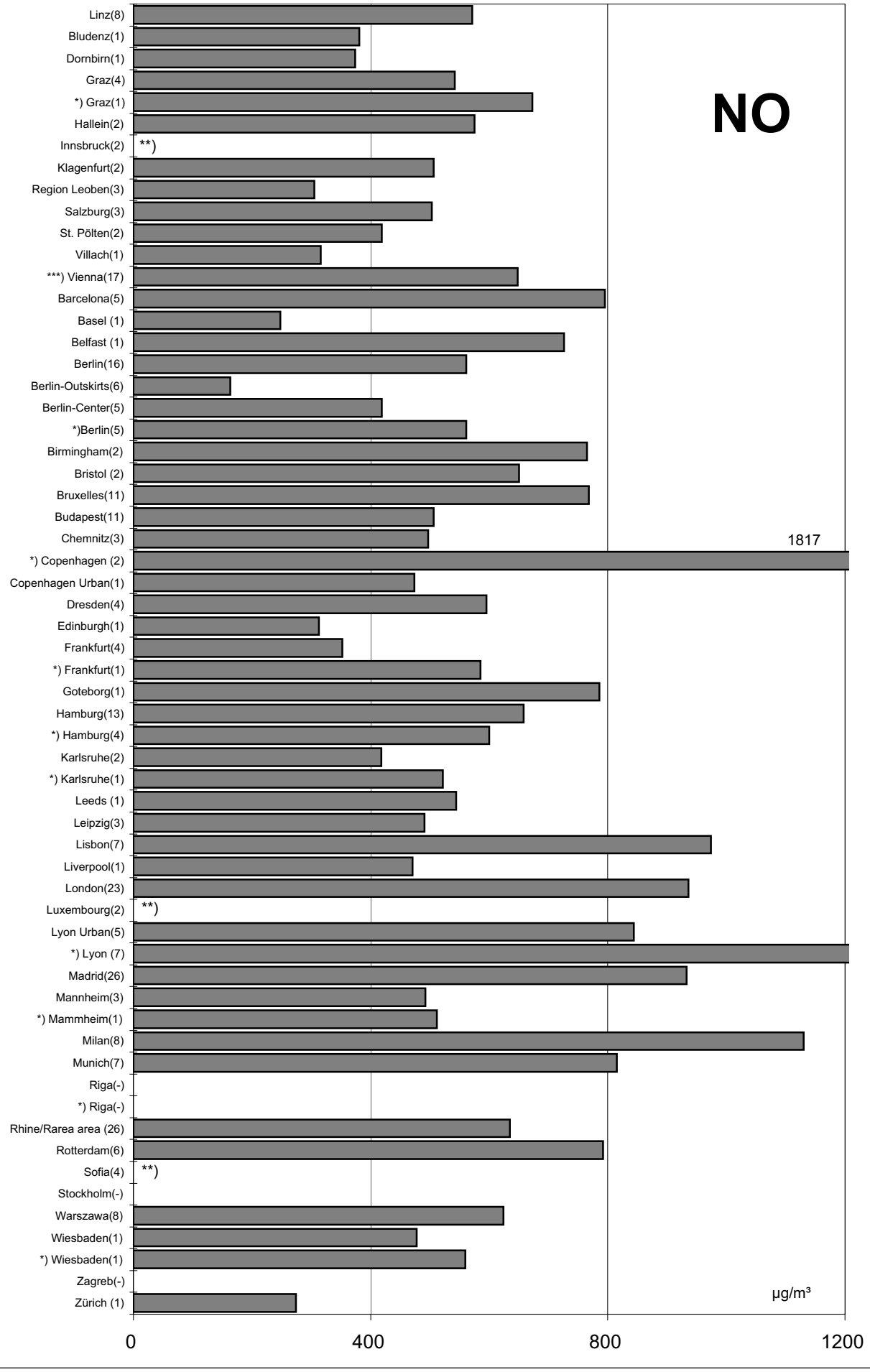
**)no data

***)max. 99,9-Percentile

Comparison of The Air Quality in 2005

max. 1h mean values (max. stressed monitoring station)

(in parentheses: number of monitoring stations)

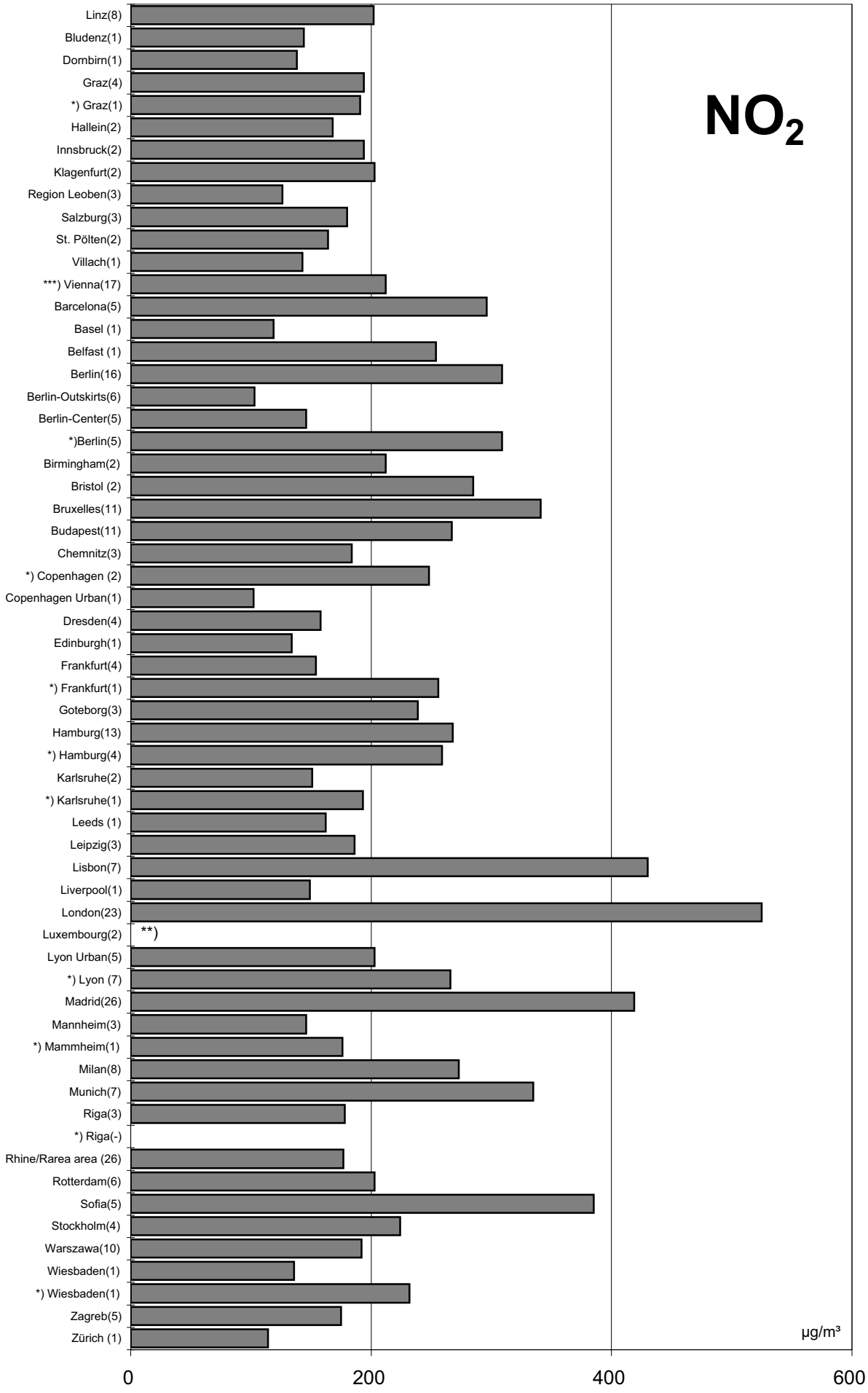


*) traffic-influenced monitoring stations
**)no data
***)max. 99,9-Percentile

Comparison of The Air Quality in 2005

max. 1h mean values (max. stressed monitoring station)

(in parentheses: number of monitoring stations)

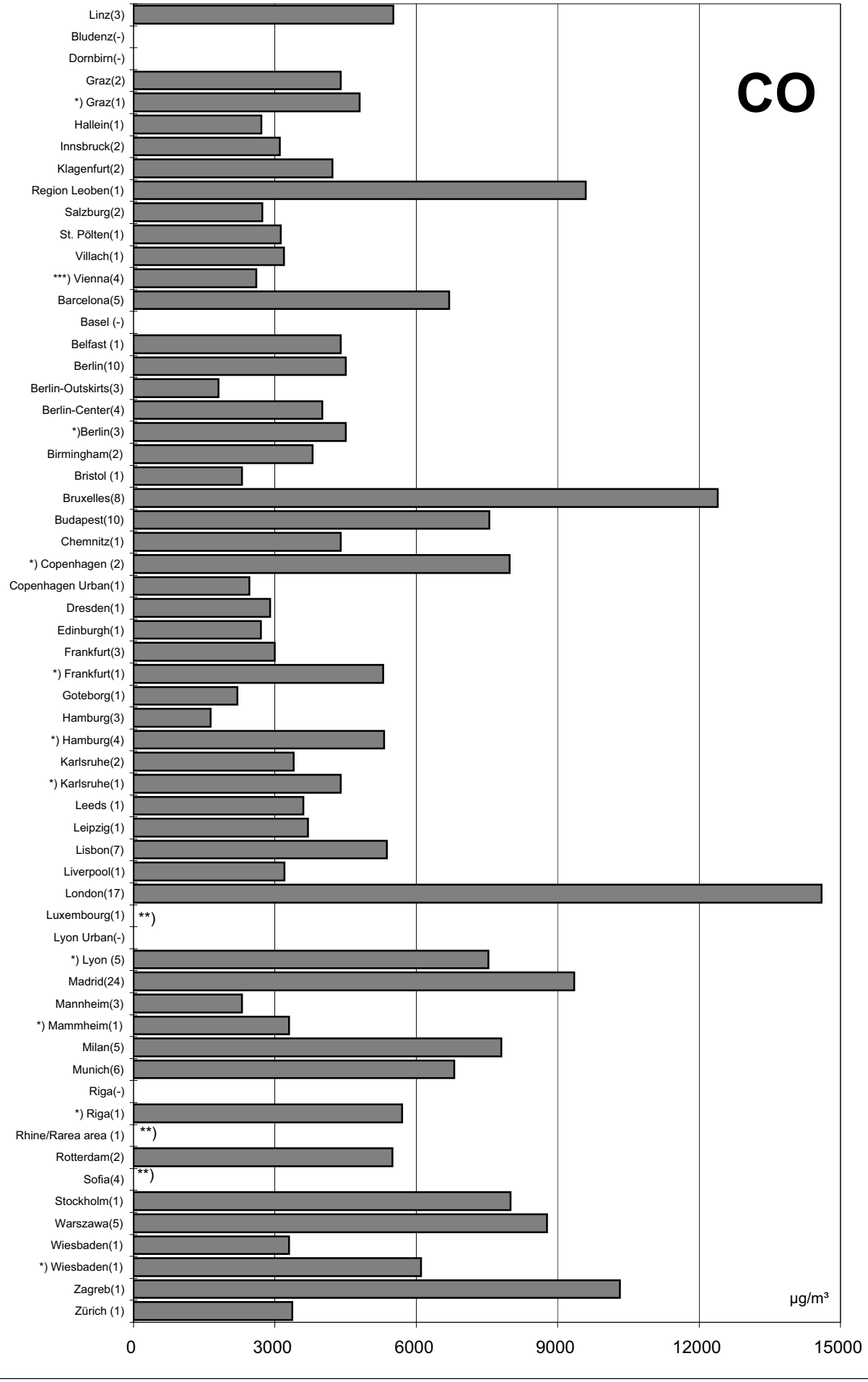


*) traffic-influenced monitoring stations
**)no data
***)max. 99,9-Percentile

Comparison of The Air Quality in 2005

max. 1h mean values (max. stressed monitoring station)

(in parentheses: number of monitoring stations)

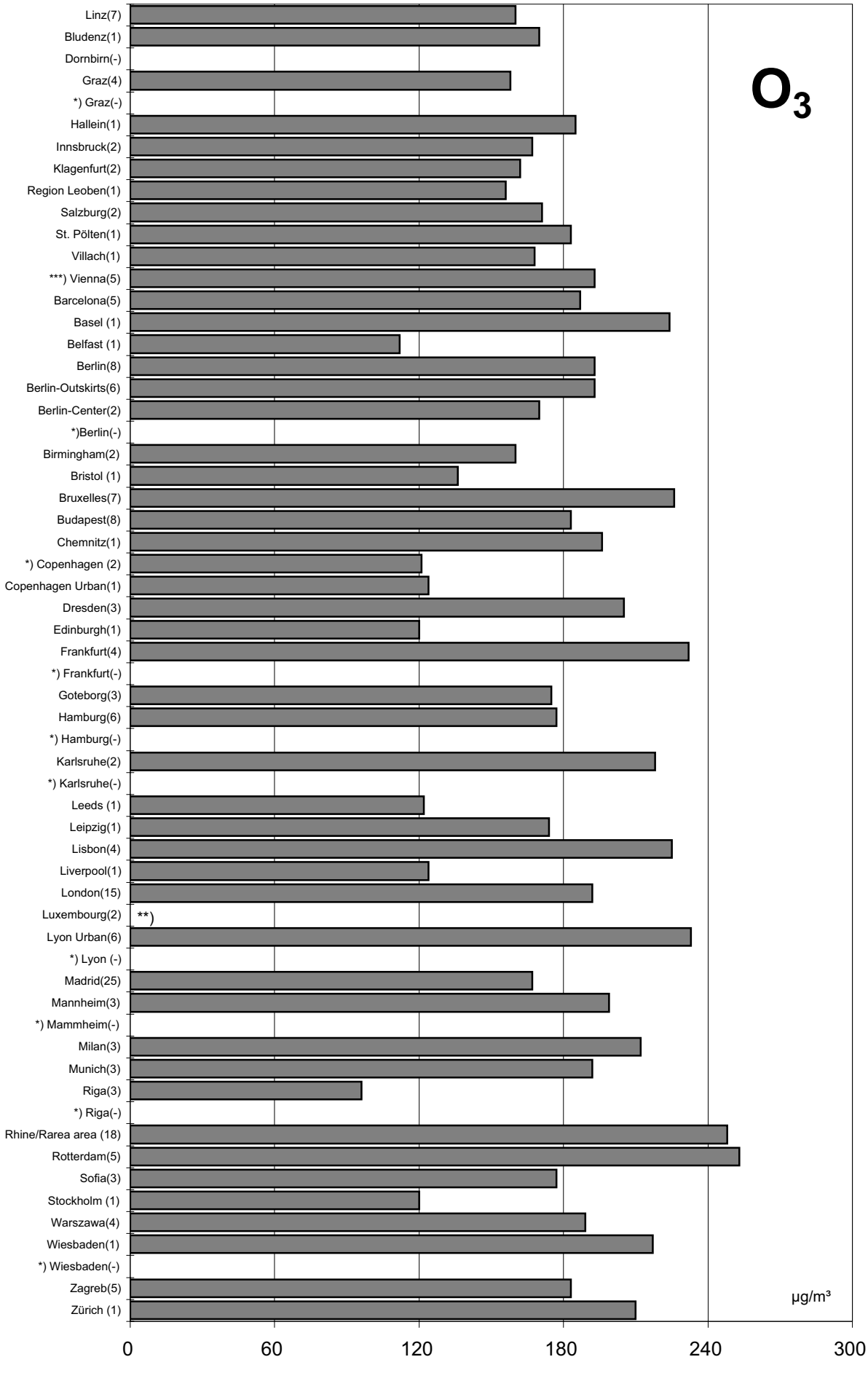


*) traffic-influenced monitoring stations
**)no data
***)max. 99,9-Percentile

Comparison of The Air Quality in 2005

max. 1h mean values (max. stressed monitoring station)

(in parentheses: number of monitoring stations)



*) traffic-influenced monitoring stations

**)no data

***)max. 99,9-Percentile

Luftgütevergleich

2005

max. Halbstunden-Mittelwert

Comparison of The Air Quality

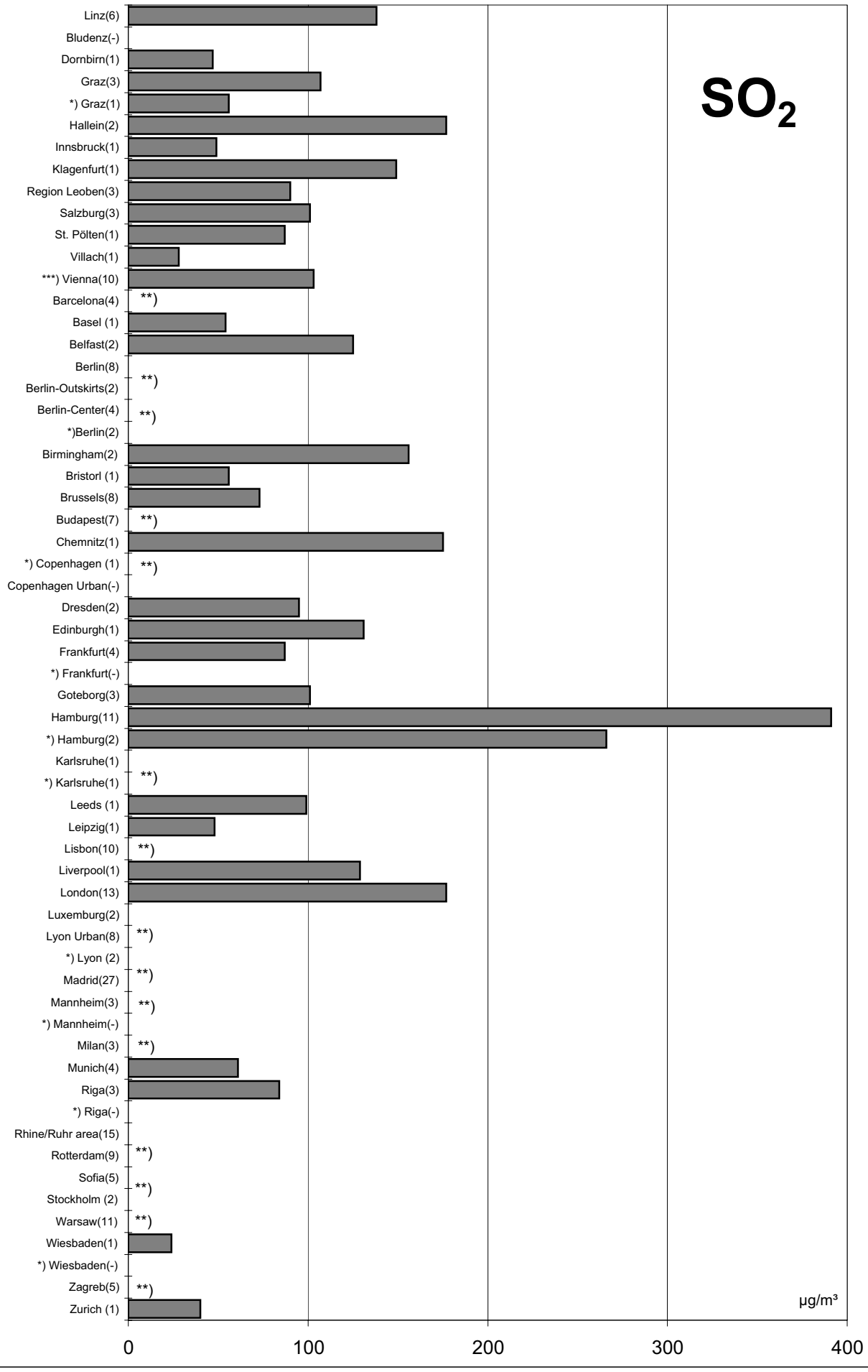
2005

Max. 1/2h- Mean Values

Comparison of The Air Quality in 2005

max. 1/2-h mean values (max. stressed monitoring station)

(in parentheses: number of monitoring stations)

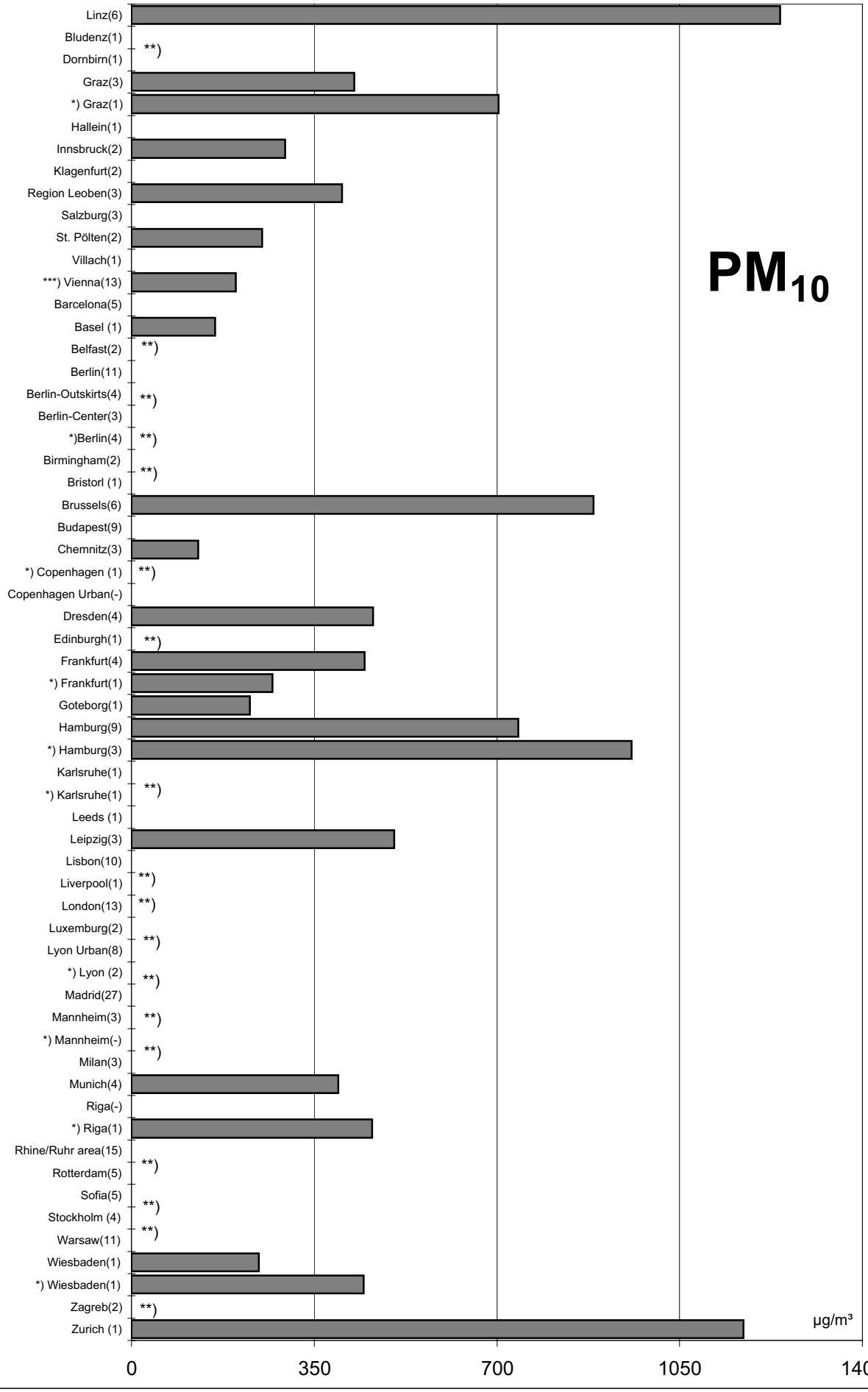


*) traffic-influenced monitoring stations
**)no data
***)max. 99,9-Percentile

Comparison of The Air Quality in 2005

max. 1/2-h mean values (max. stressed monitoring station)

(in parentheses: number of monitoring stations)



*) traffic-influenced monitoring stations

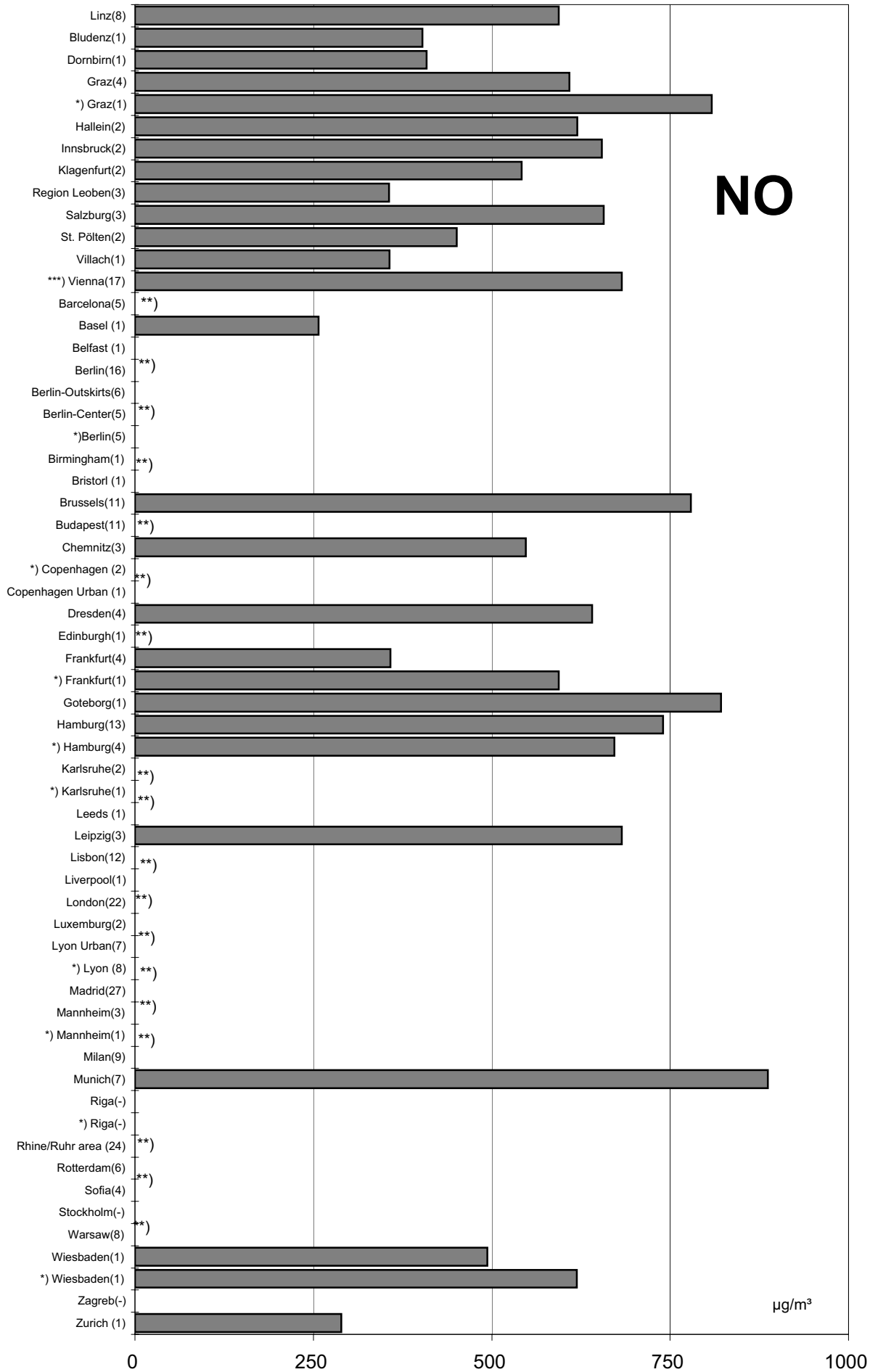
**)no data

***)max. 99,9-Percentile

Comparison of The Air Quality in 2005

max. 1/2-h mean values (max. stressed monitoring station)

(in parentheses: number of monitoring stations)

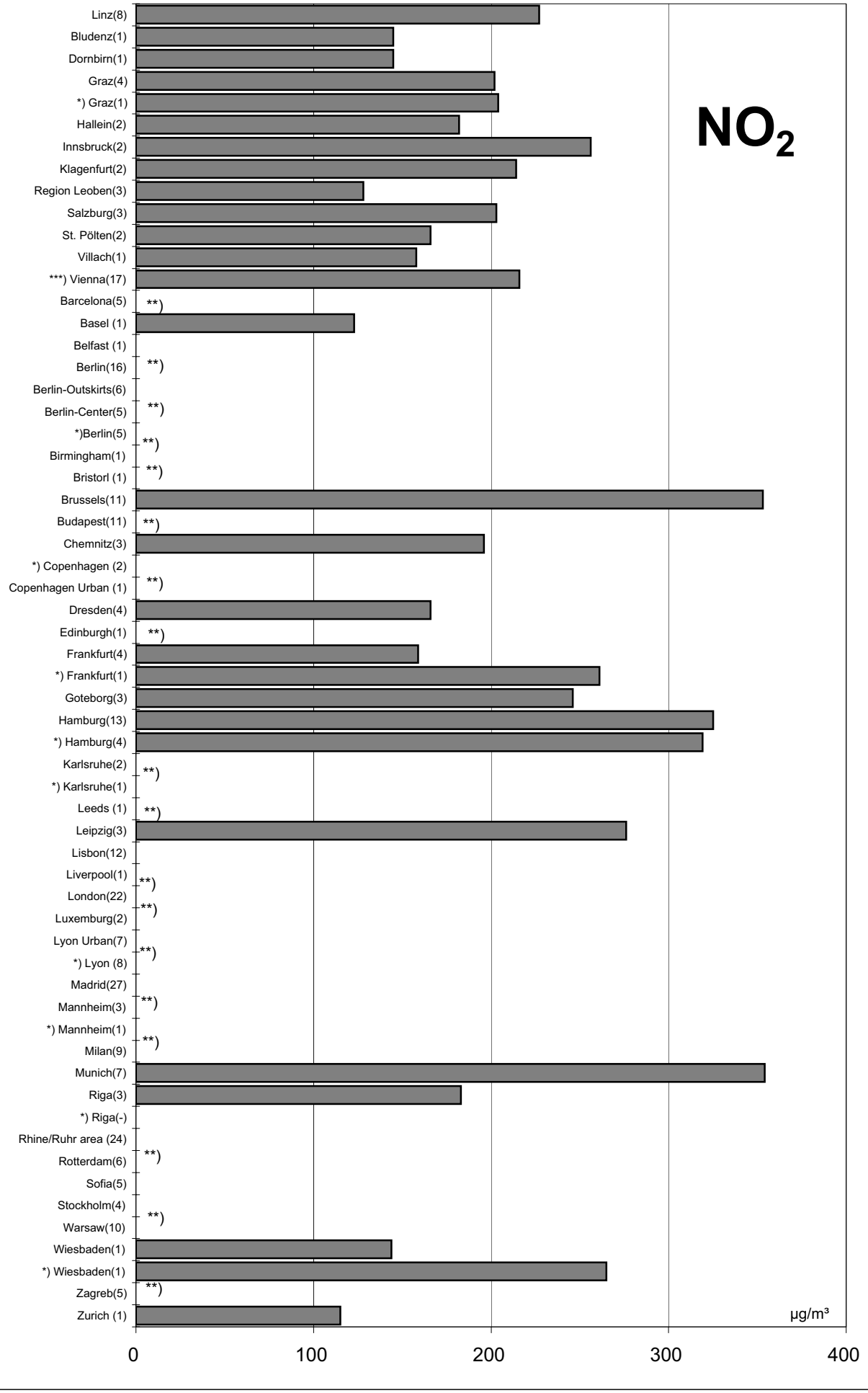


*) traffic-influenced monitoring stations
**)no data
***)max. 99,9-Percentile

Comparison of The Air Quality in 2005

max. 1/2-h mean values (max. stressed monitoring station)

(in parentheses: number of monitoring stations

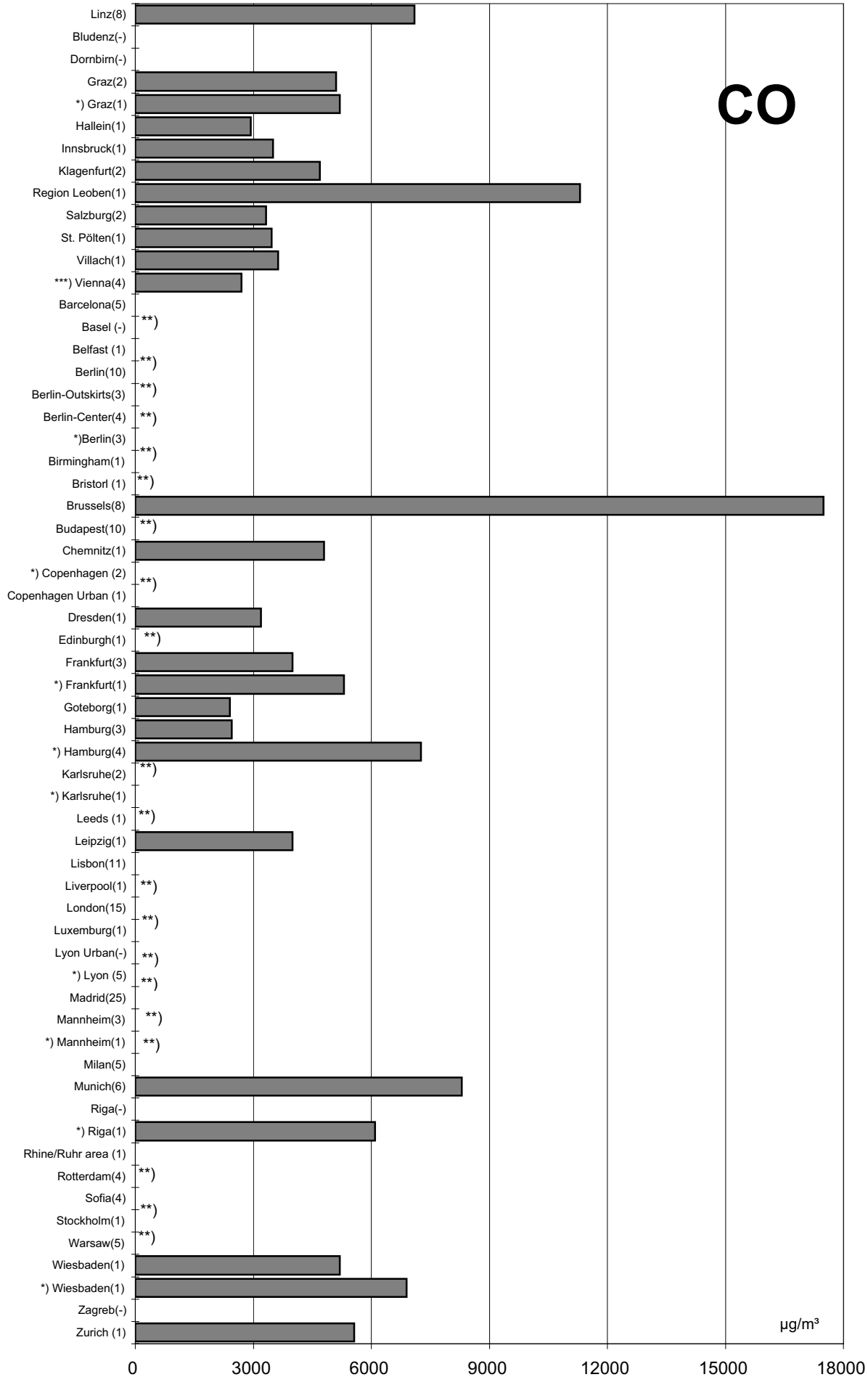


*) traffic-influenced monitoring stations
**)no data
***)max. 99,9-Percentile

Comparison of The Air Quality in 2005

max. 1/2-h mean values (max. stressed monitoring station)

(in parentheses: number of monitoring stations)



*) traffic-influenced monitoring stations

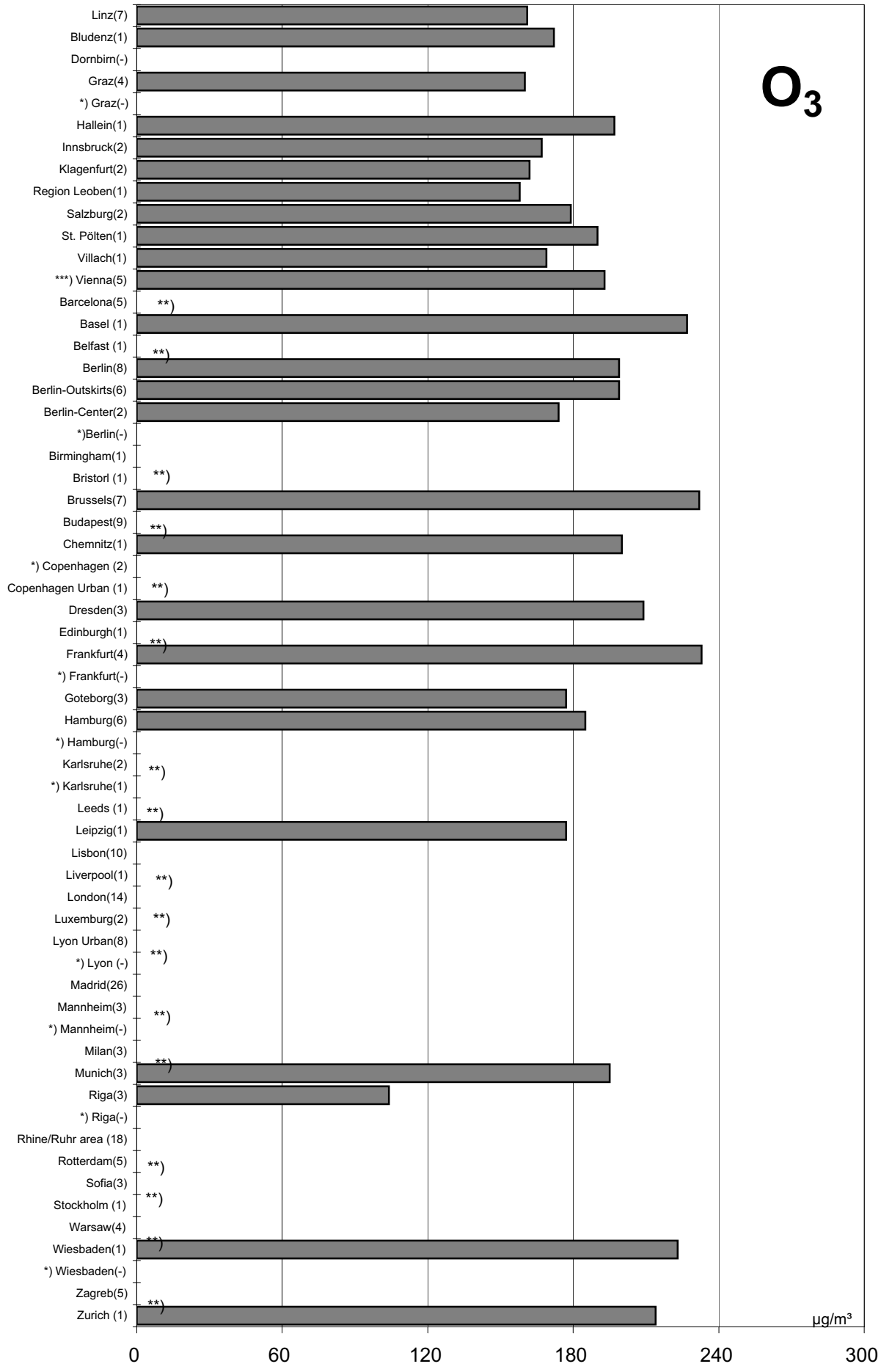
**)no data

***)max. 99,9-Percentile

Comparison of The Air Quality in 2005

max. 1/2-h mean values (max. stressed monitoring station)

(in parentheses: number of monitoring stations)



*) traffic-influenced monitoring stations
**)no data
***)max. 99,9-Percentile

Luftgütevergleich

2005

max. 98-Percentil/Jahr

Comparison of The Air Quality

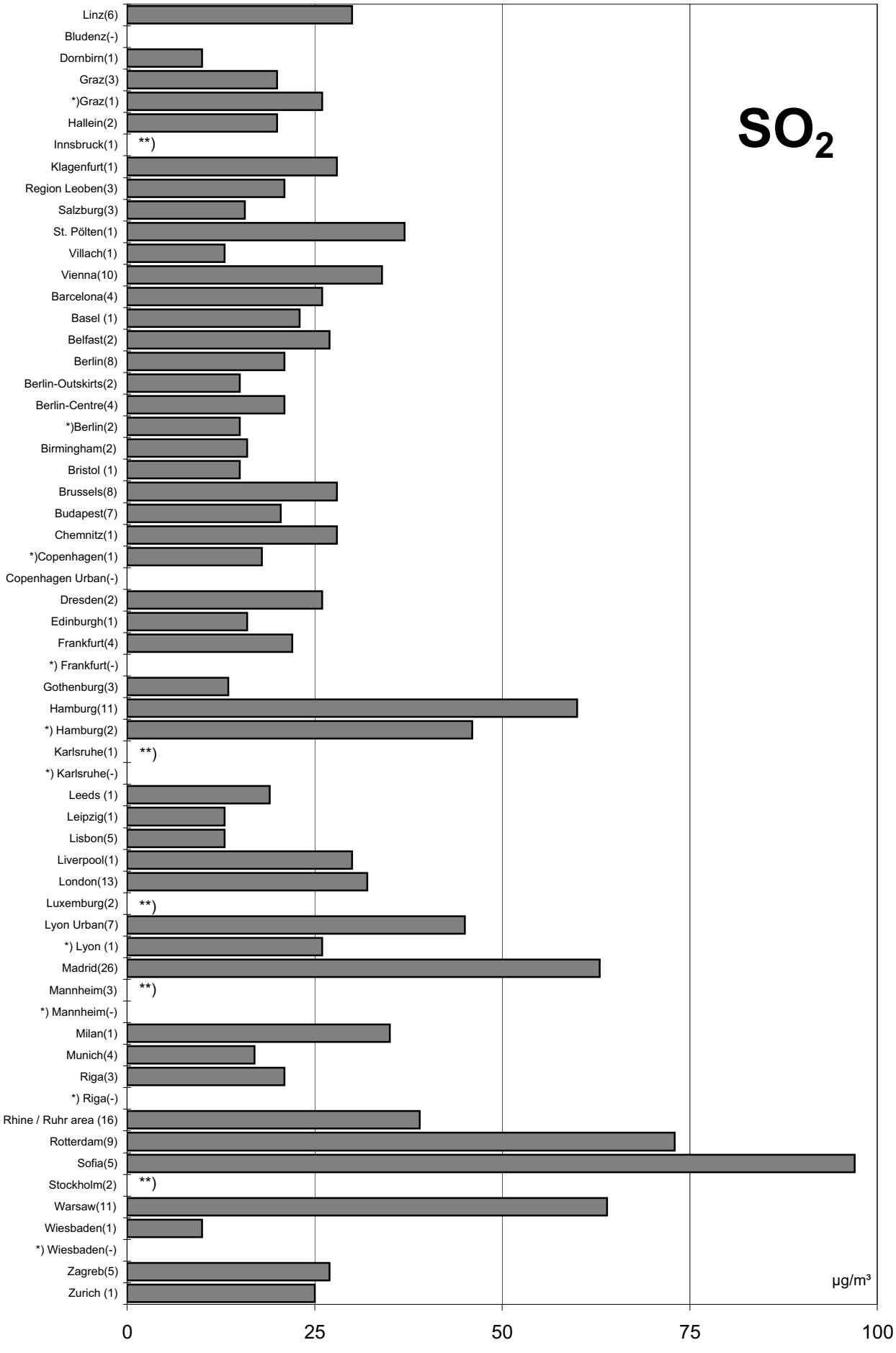
2005

Max. 98- Percentile per Year

Comparison of The Air Quality in 2005

max. 98-Percentile (max. stressed monitoring station)

(in parentheses: number of monitoring stations)

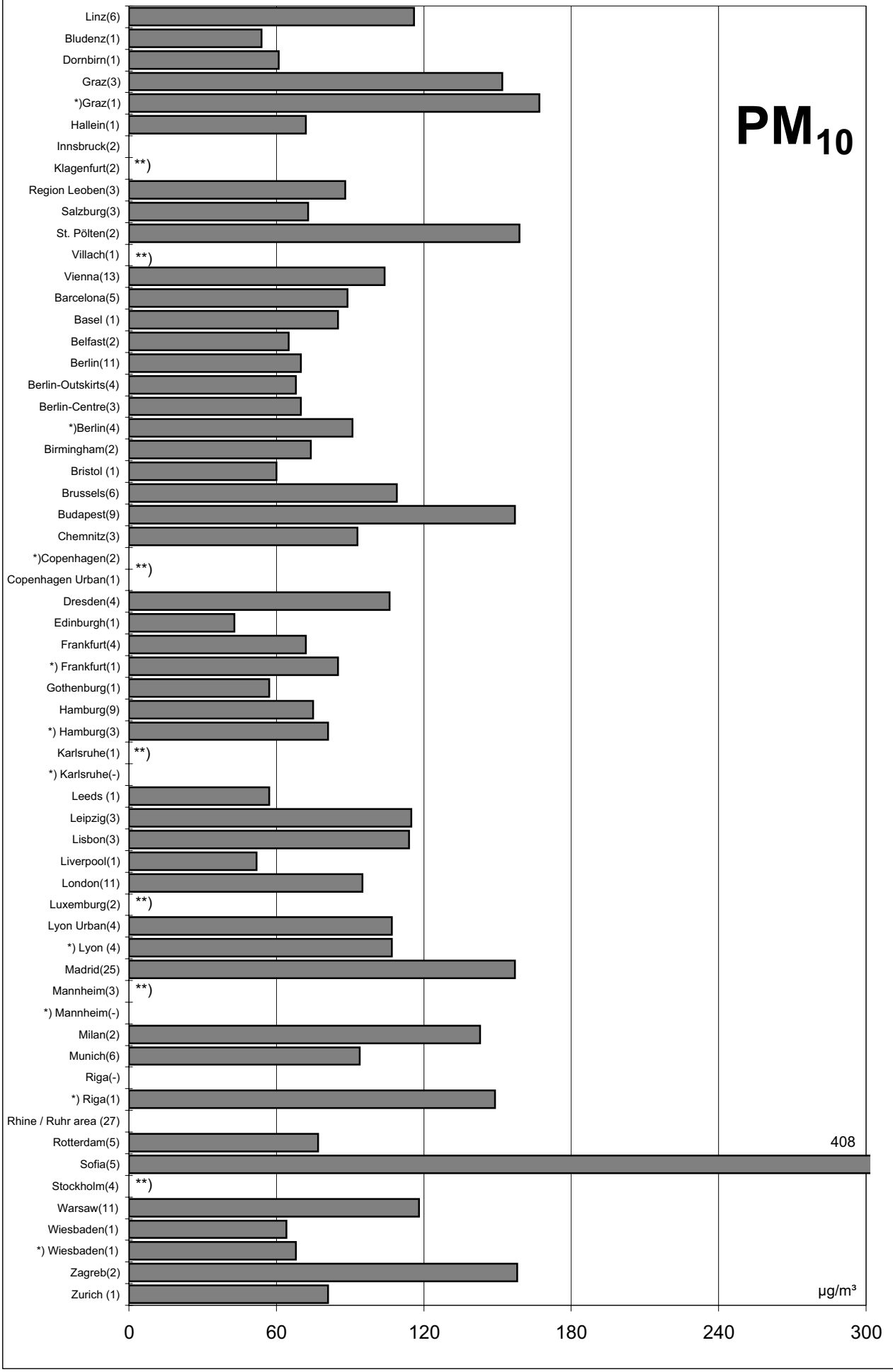


*) traffic-influenced monitoring stations
**)no data

Comparison of The Air Quality in 2005

max. 98-Percentile (max. stressed monitoring station)

(in parentheses: number of monitoring stations)



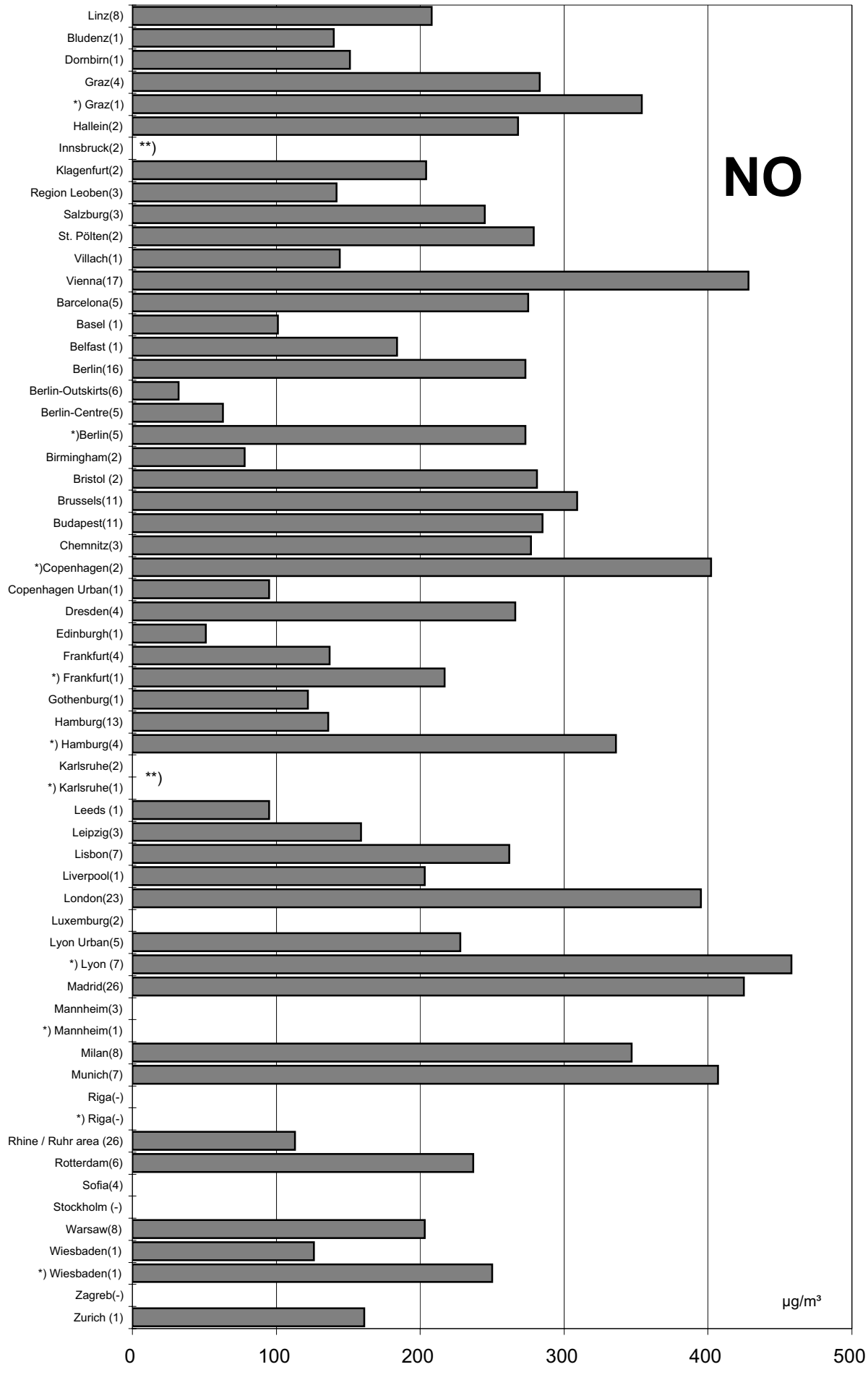
*) traffic-influenced monitoring stations

**)no data

Comparison of The Air Quality in 2005

max. 98-Percentile (max. stressed monitoring station)

(in parentheses: number of monitoring stations)

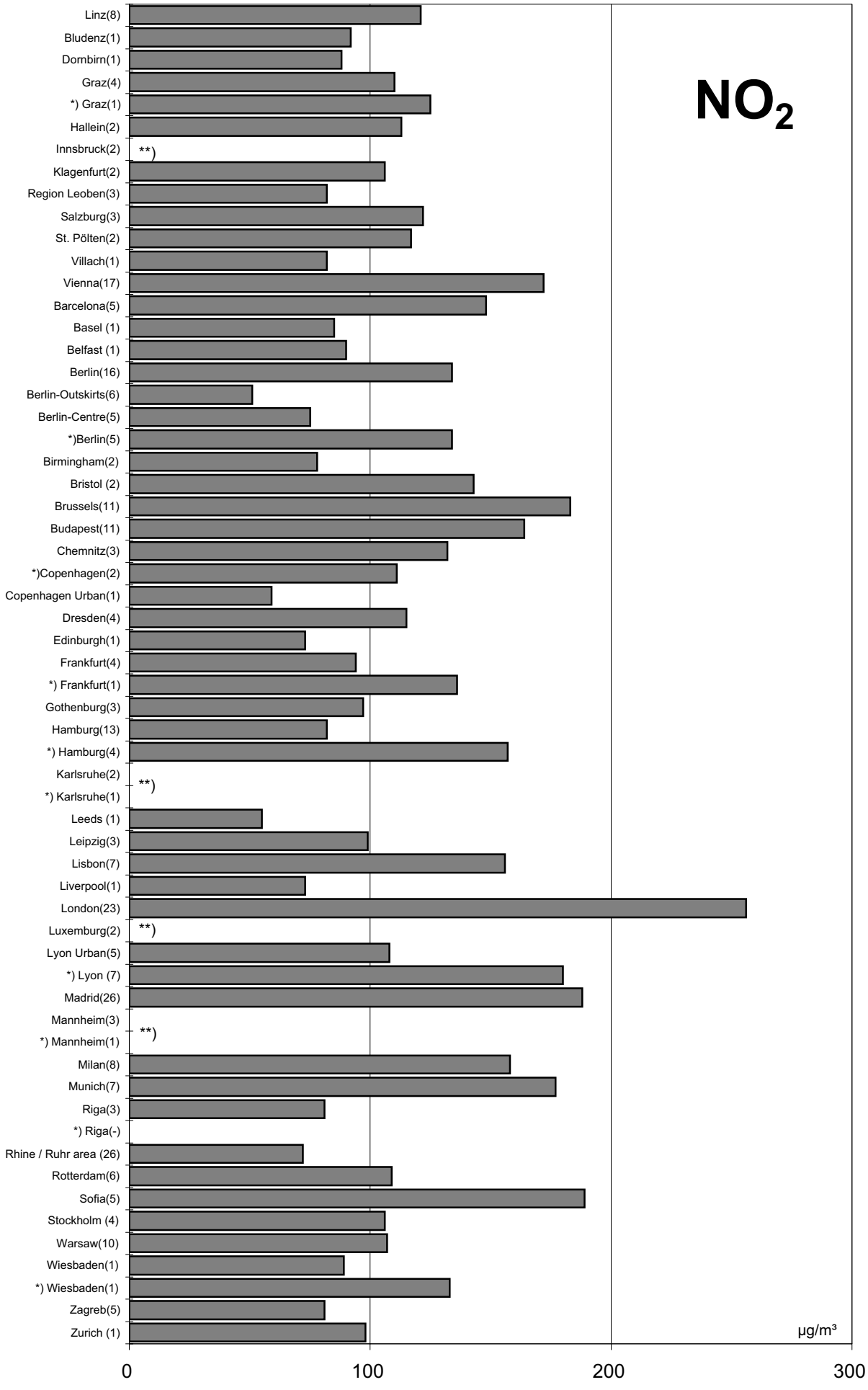


*) traffic-influenced monitoring stations
**)no data

Comparison of The Air Quality in 2005

max. 98-Percentile (max. stressed monitoring station)

(in parentheses: number of monitoring stations)

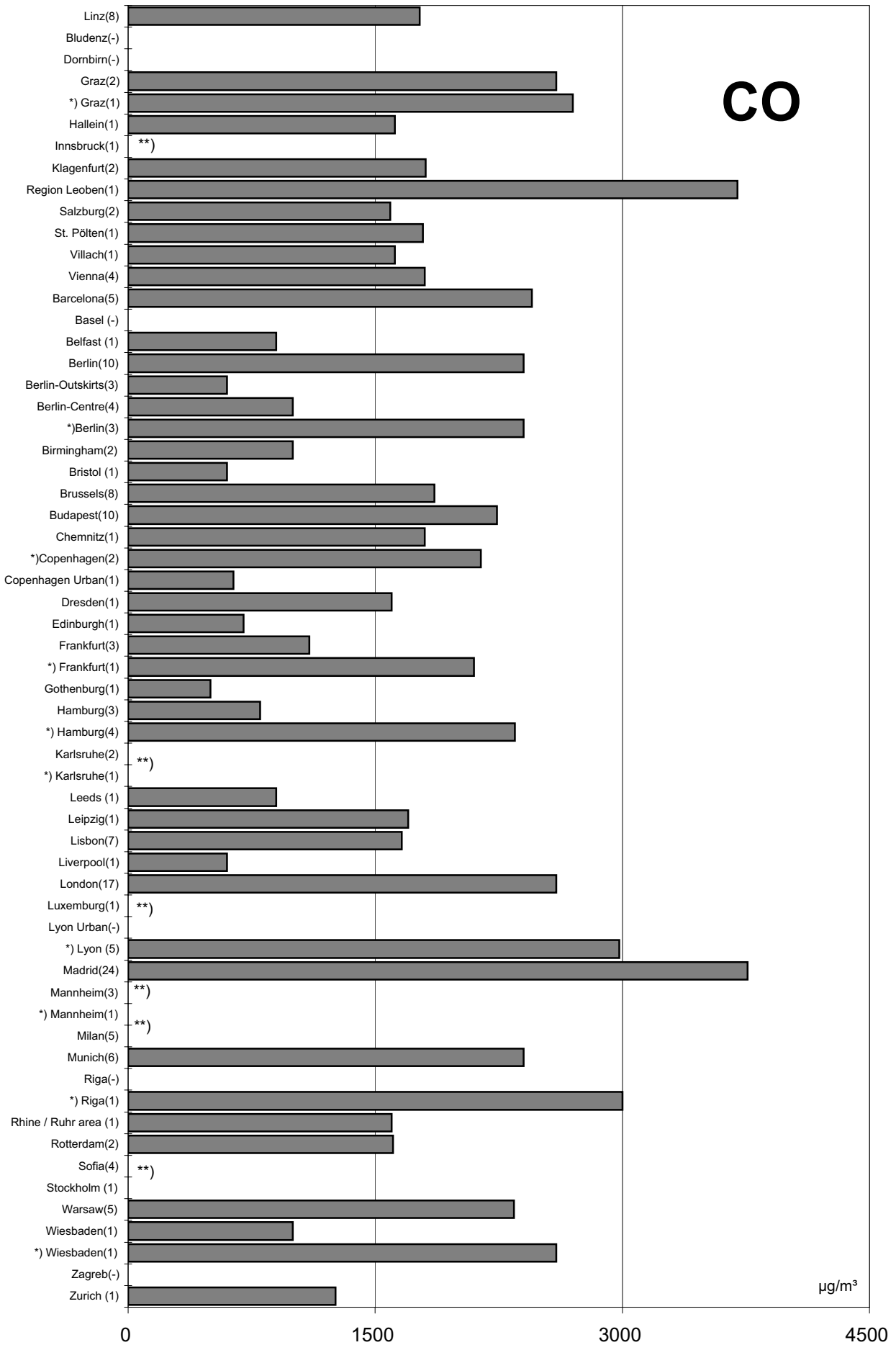


*) traffic-influenced monitoring stations
**)no data

Comparison of The Air Quality in 2005

max. 98-Percentile (max. stressed monitoring station)

(in parentheses: number of monitoring stations

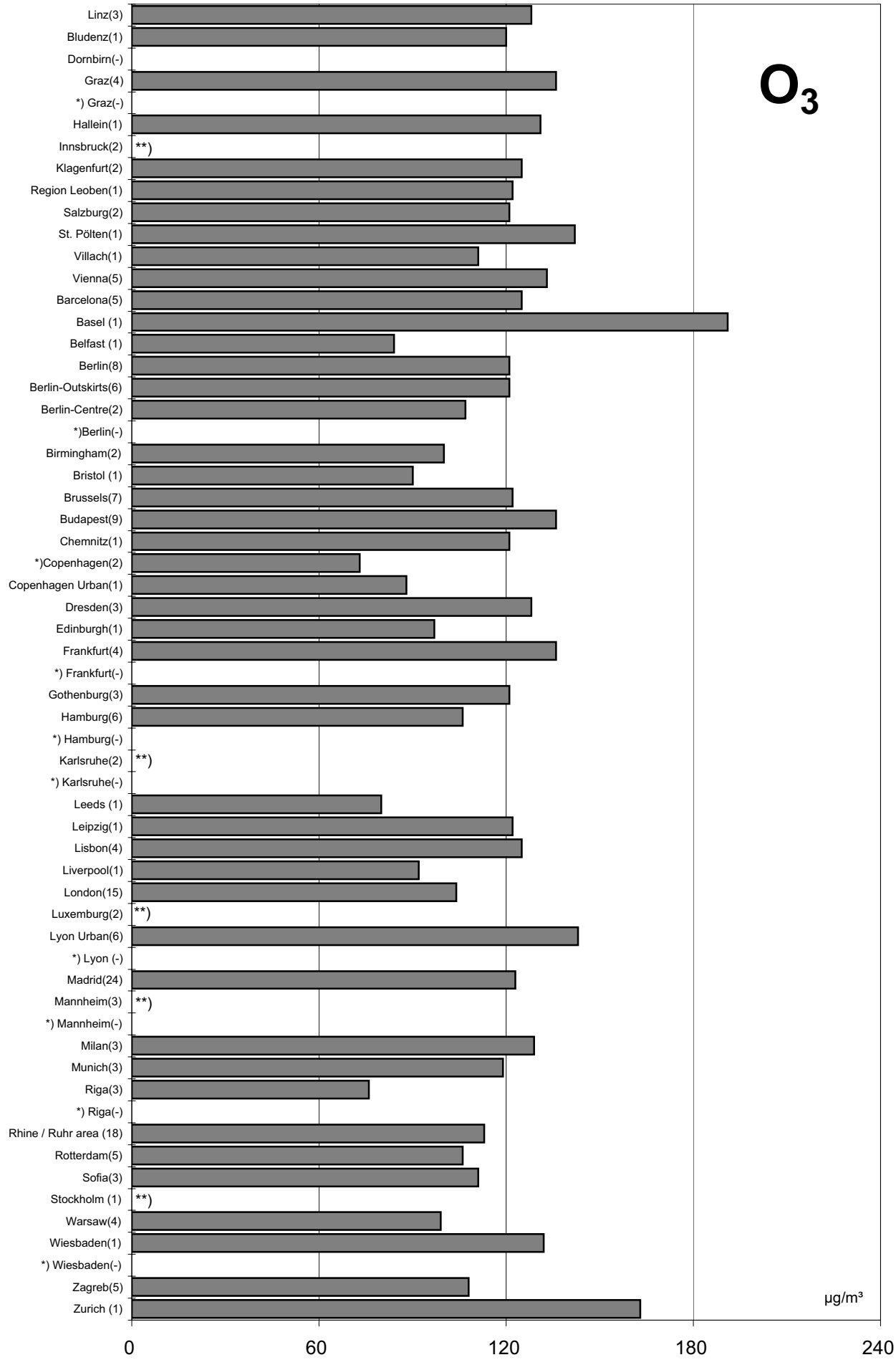


*) traffic-influenced monitoring stations
**)no data

Comparison of The Air Quality in 2005

max. 98-Percentile (max. stressed monitoring station)

(in parentheses: number of monitoring stations)



*) traffic-influenced monitoring stations
**)no data

Jahresvergleich

1992 - 2004

Jahresmittelwerte

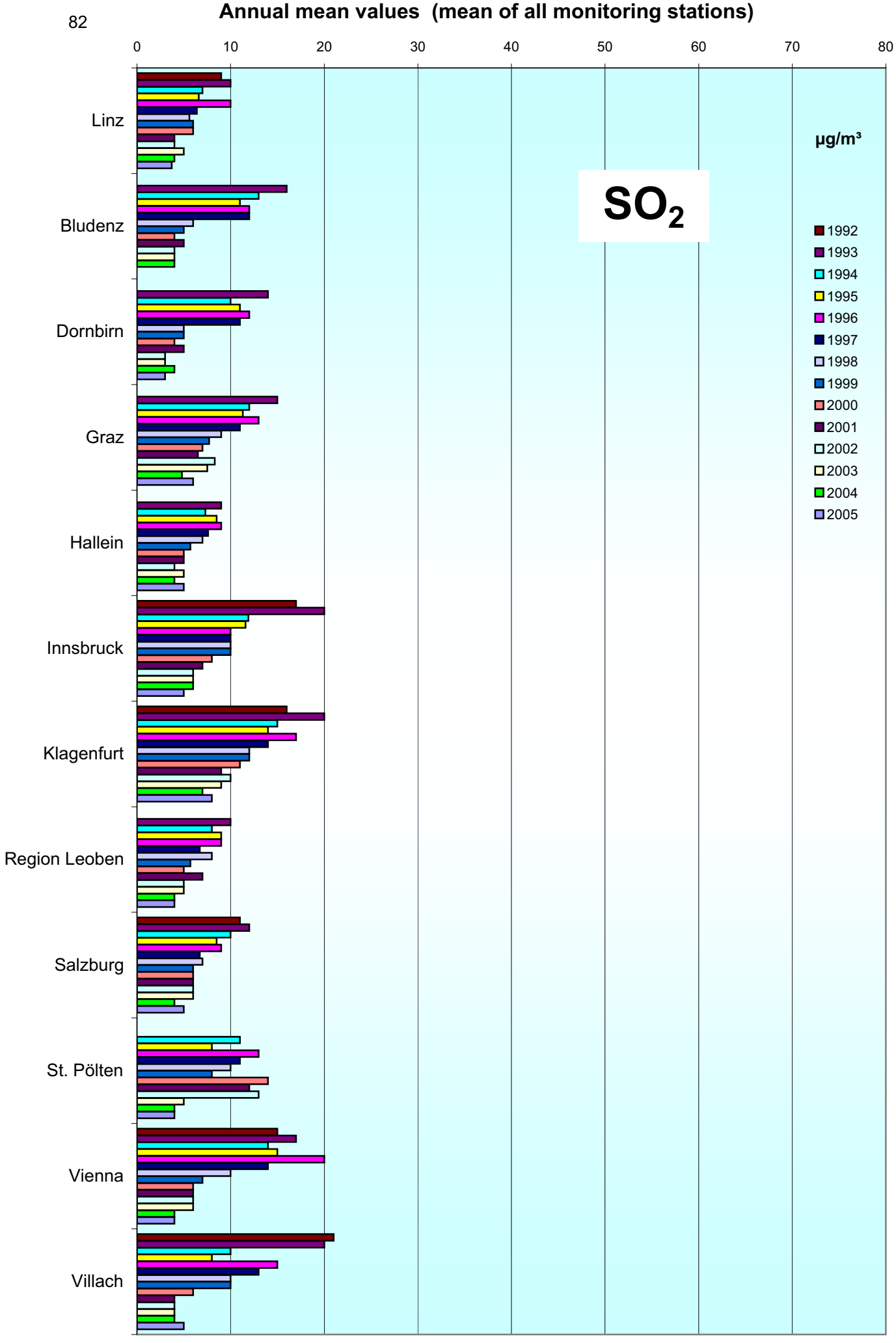
Comparison of The Air Quality Over The Years

1992 - 2004

Annual Mean Values

Comparison of The Air Quality 1992 - 2005

Annual mean values (mean of all monitoring stations)



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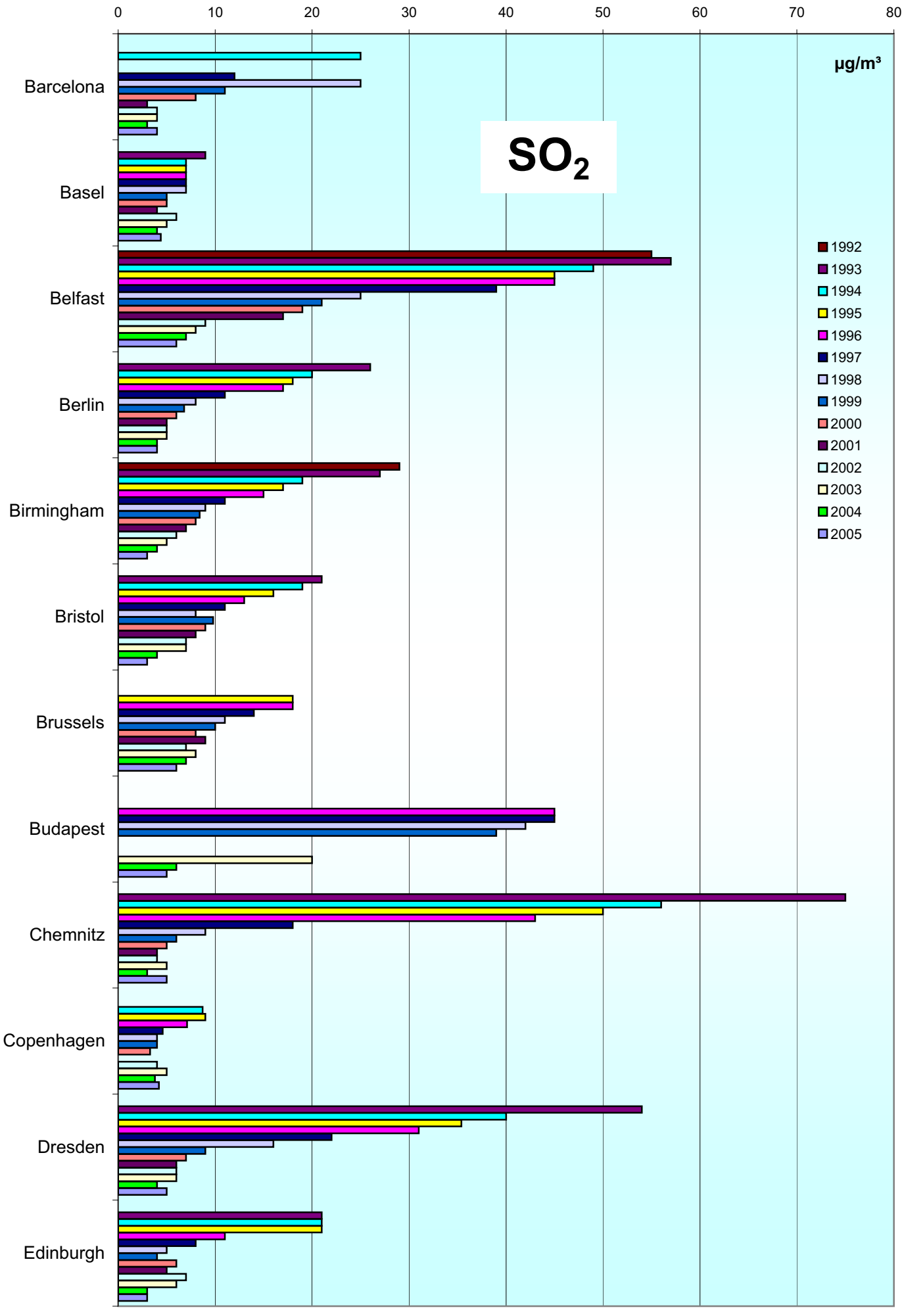
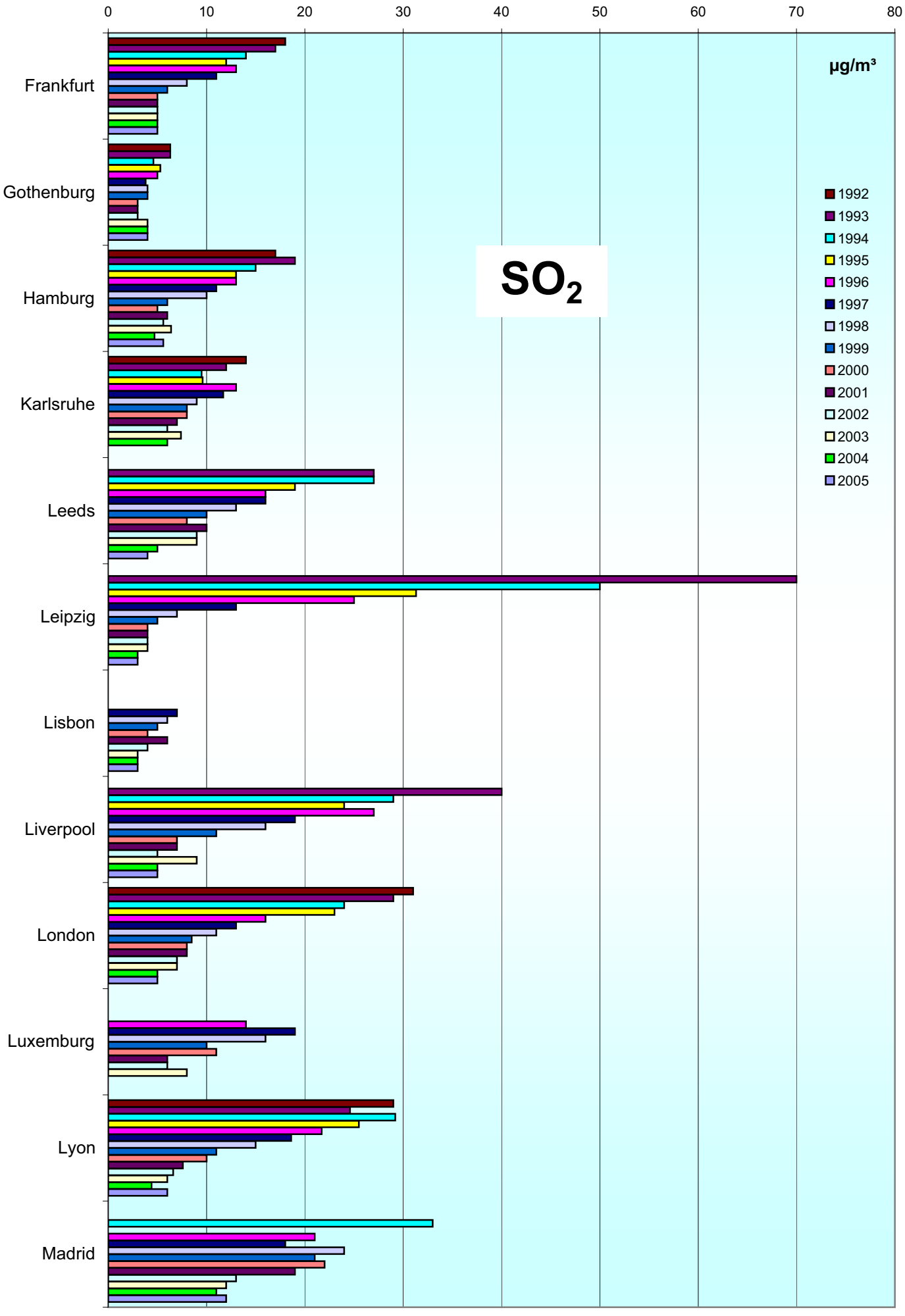
Comparison of The Air Quality 1992 - 2005

Annual mean values (mean of all monitoring stations)



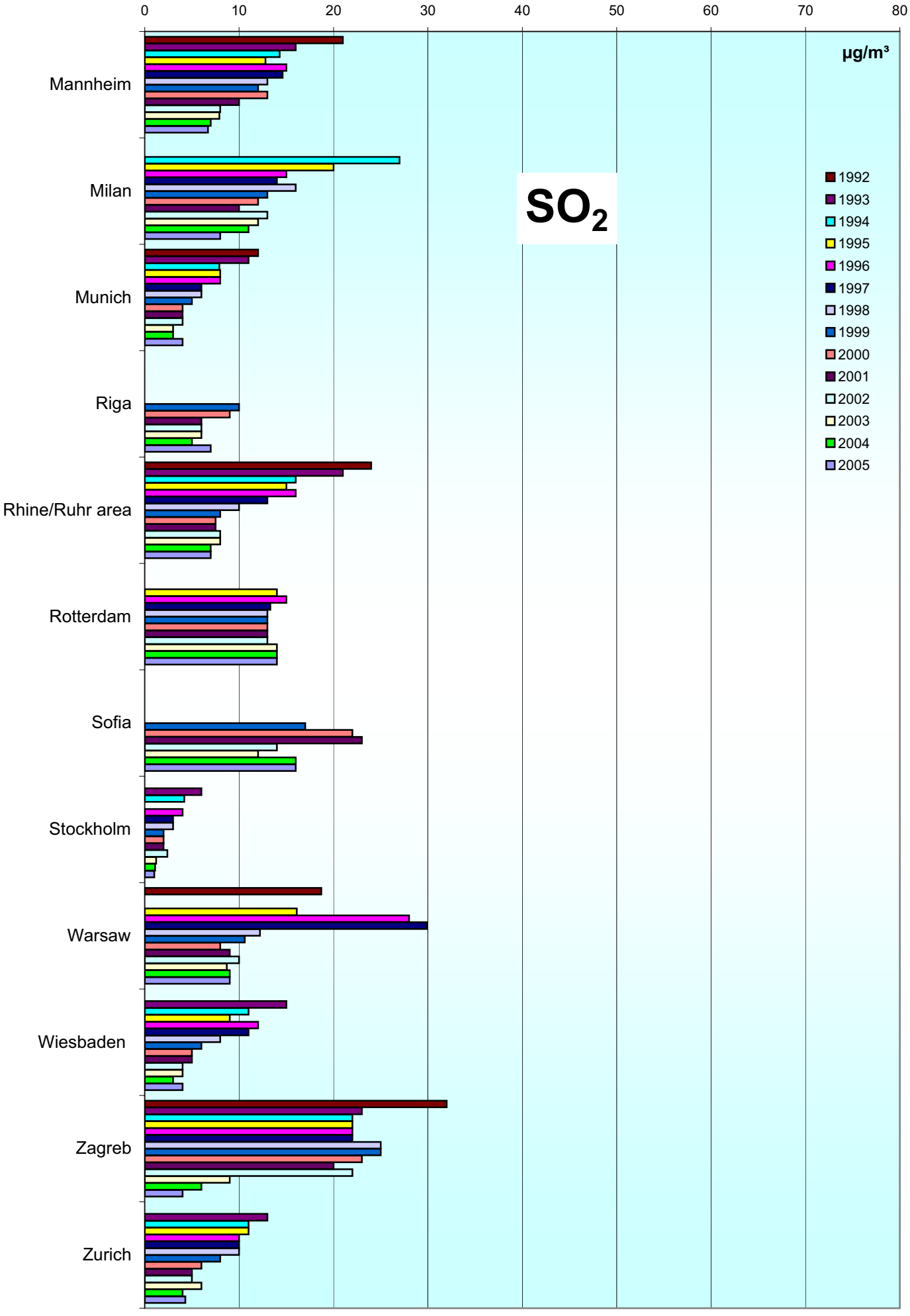
Comparison of The Air Quality 1992 - 2005

Annual mean values (mean of all monitoring stations)



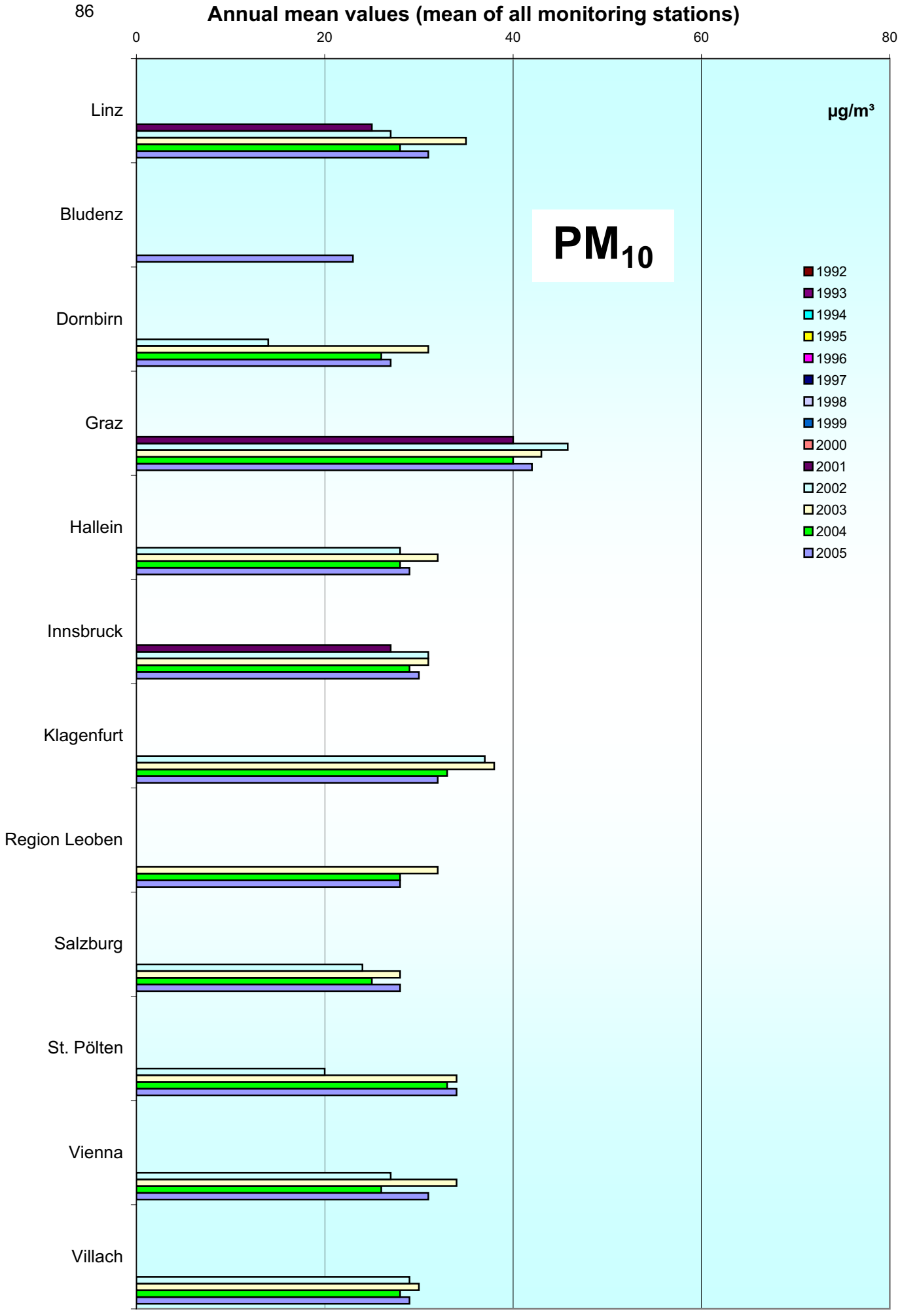
Comparison of The Air Quality 1992 - 2005

Annual mean values (mean of all monitoring stations)



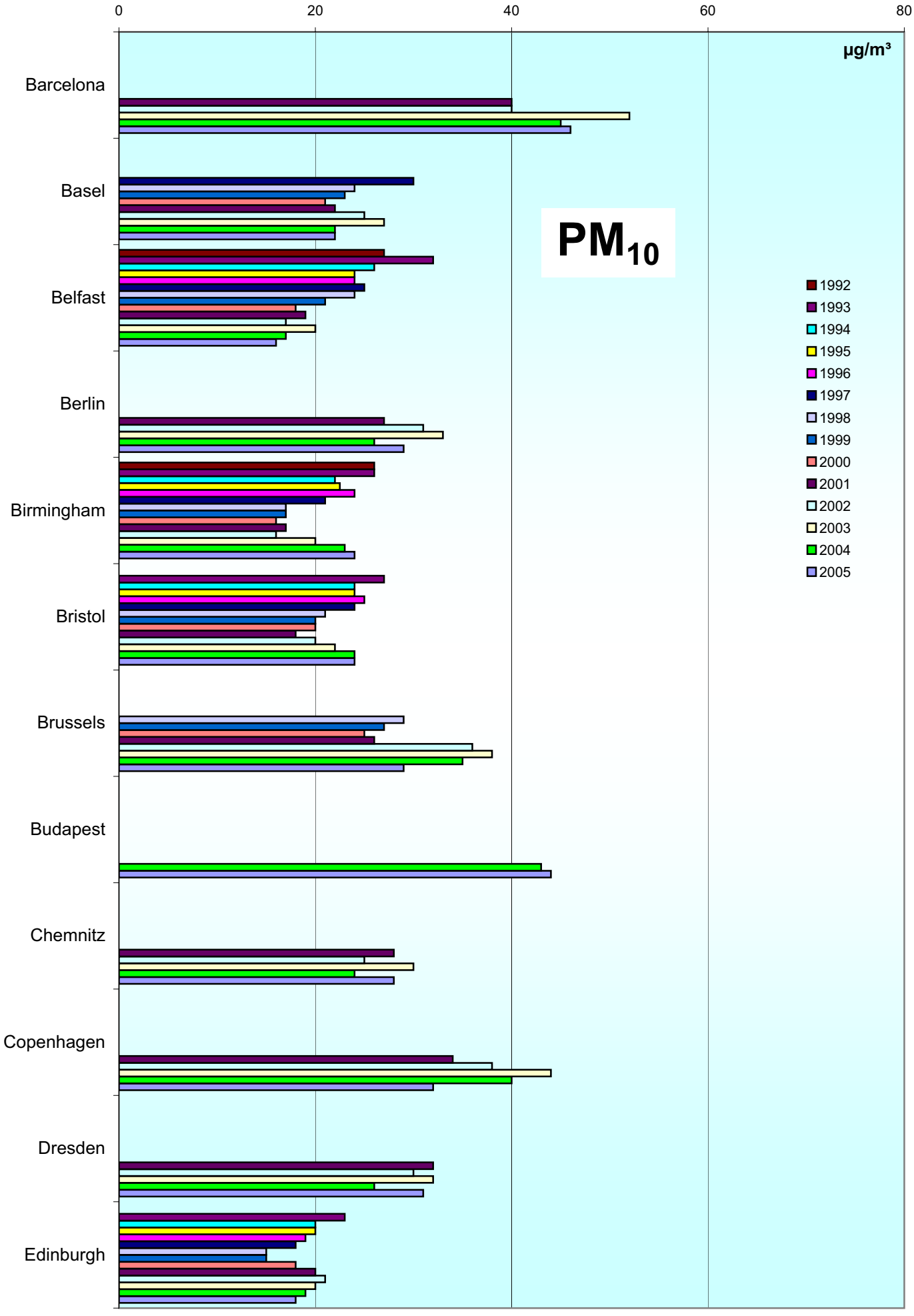
Comparison of The Air Quality 1992 - 2005

Annual mean values (mean of all monitoring stations)



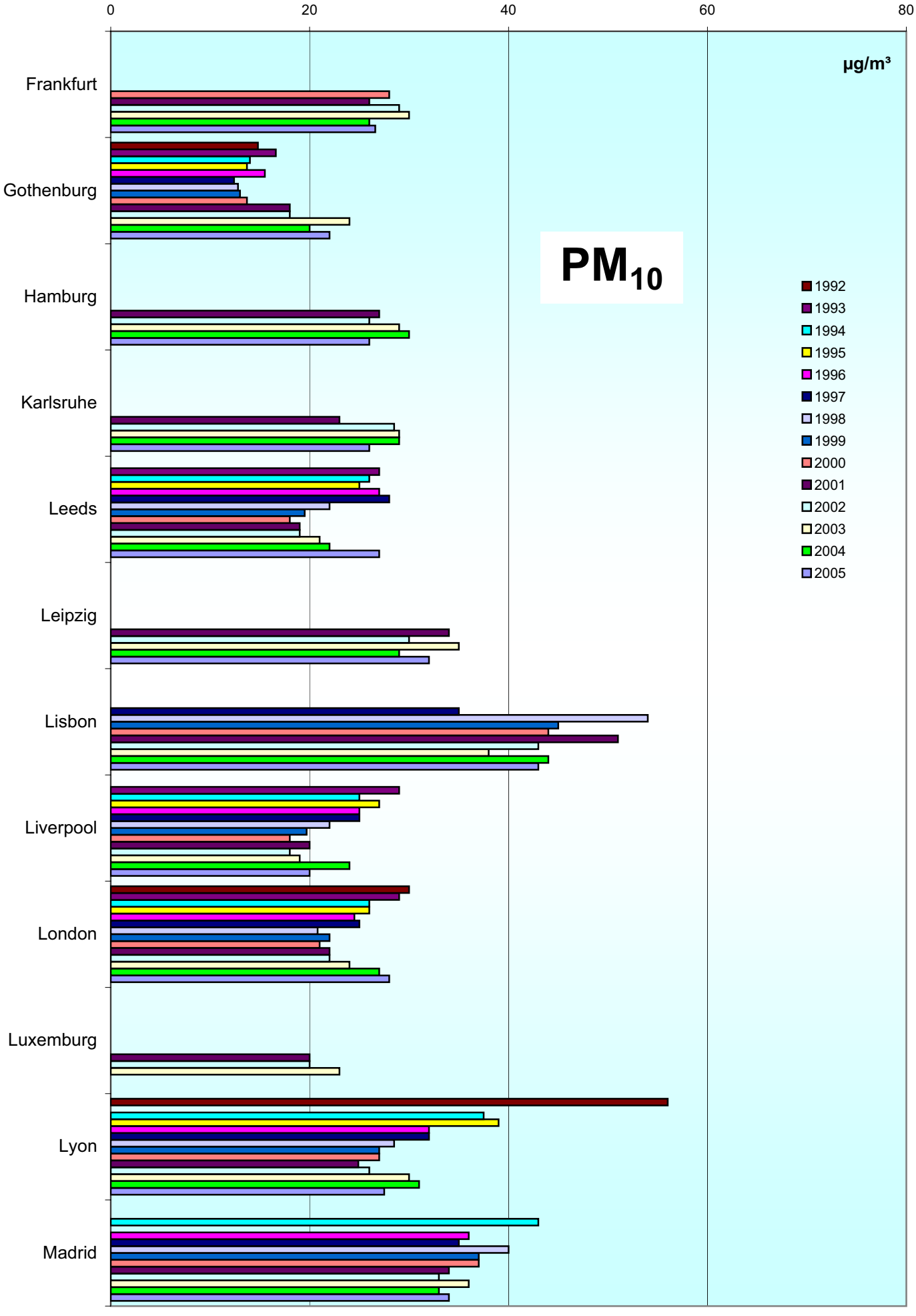
Comparison of The Air Quality 1992 - 2005

Annual mean values (mean of all monitoring stations)



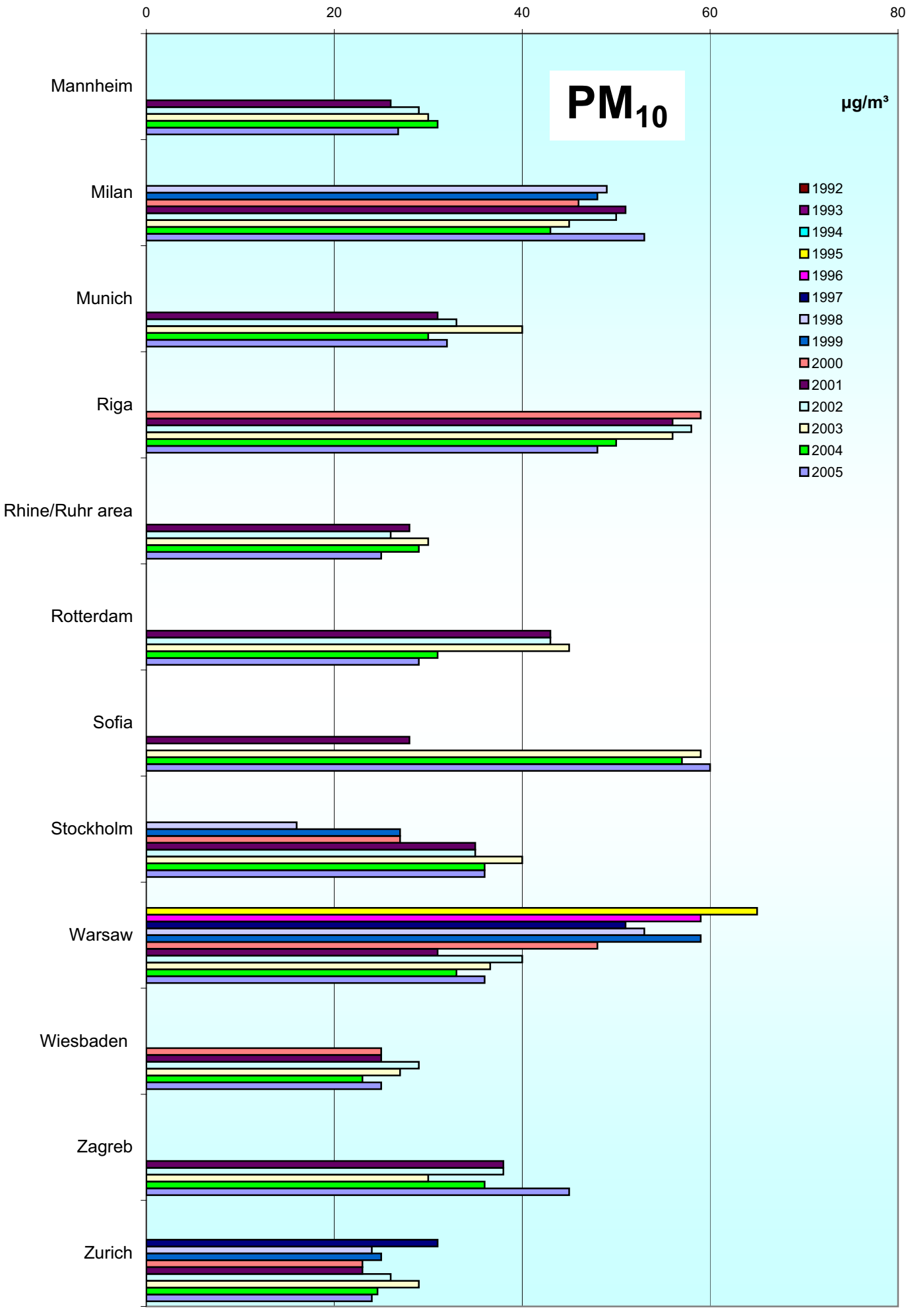
Comparison of The Air Quality 1992 - 2005

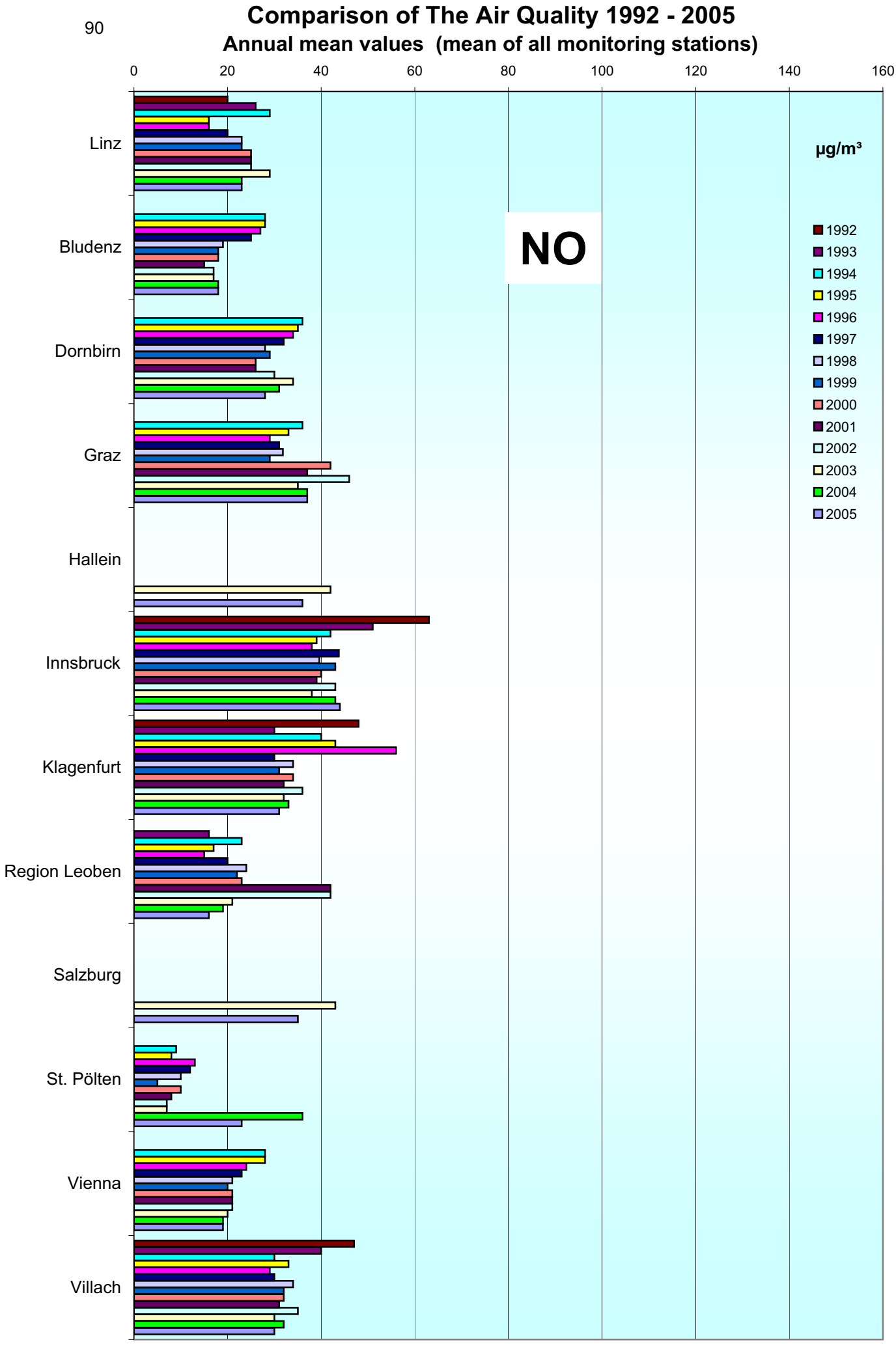
Annual mean values (mean of all monitoring stations)



Comparison of The Air Quality 1992 - 2005

Annual mean values (mean of all monitoring stations)





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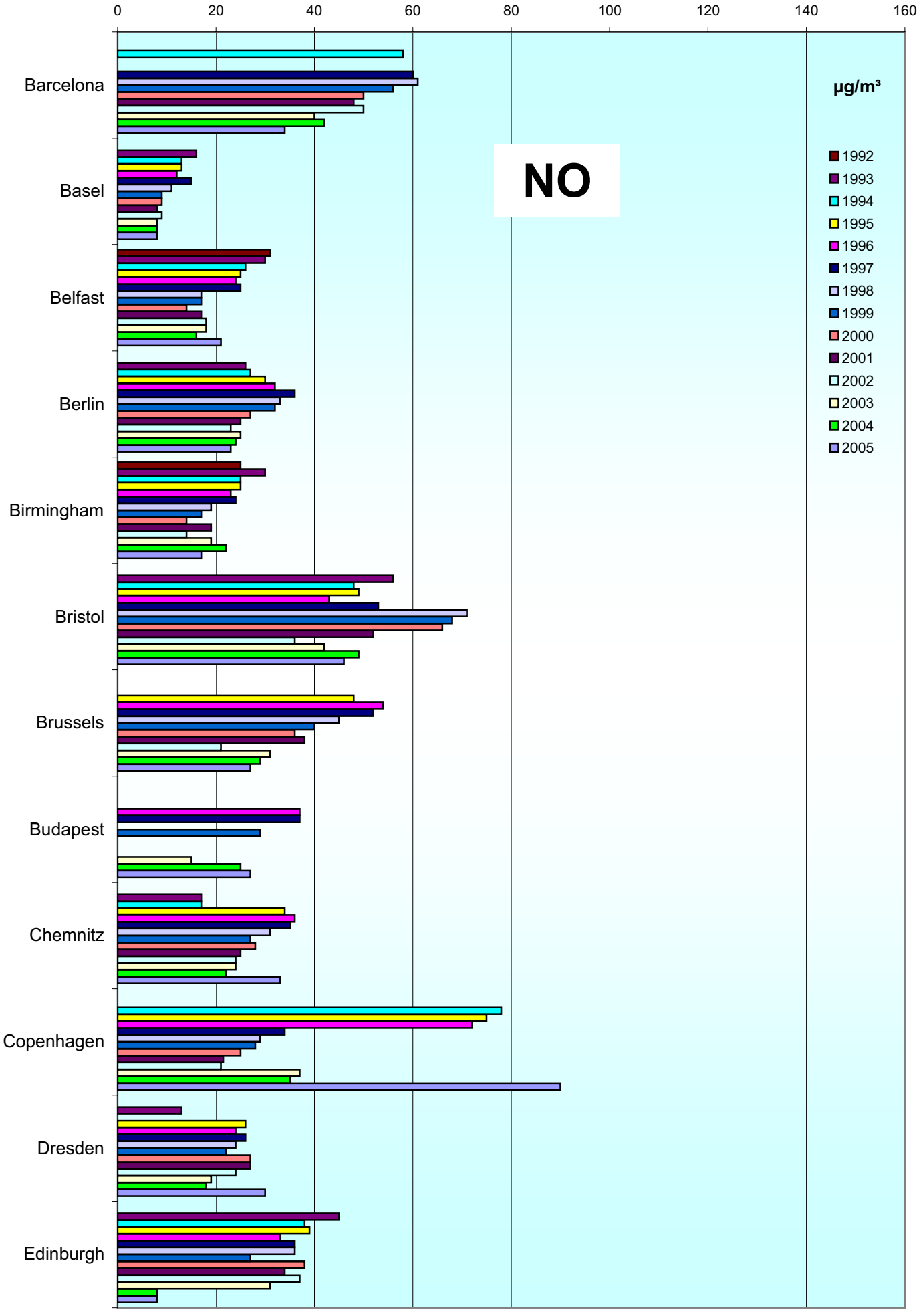
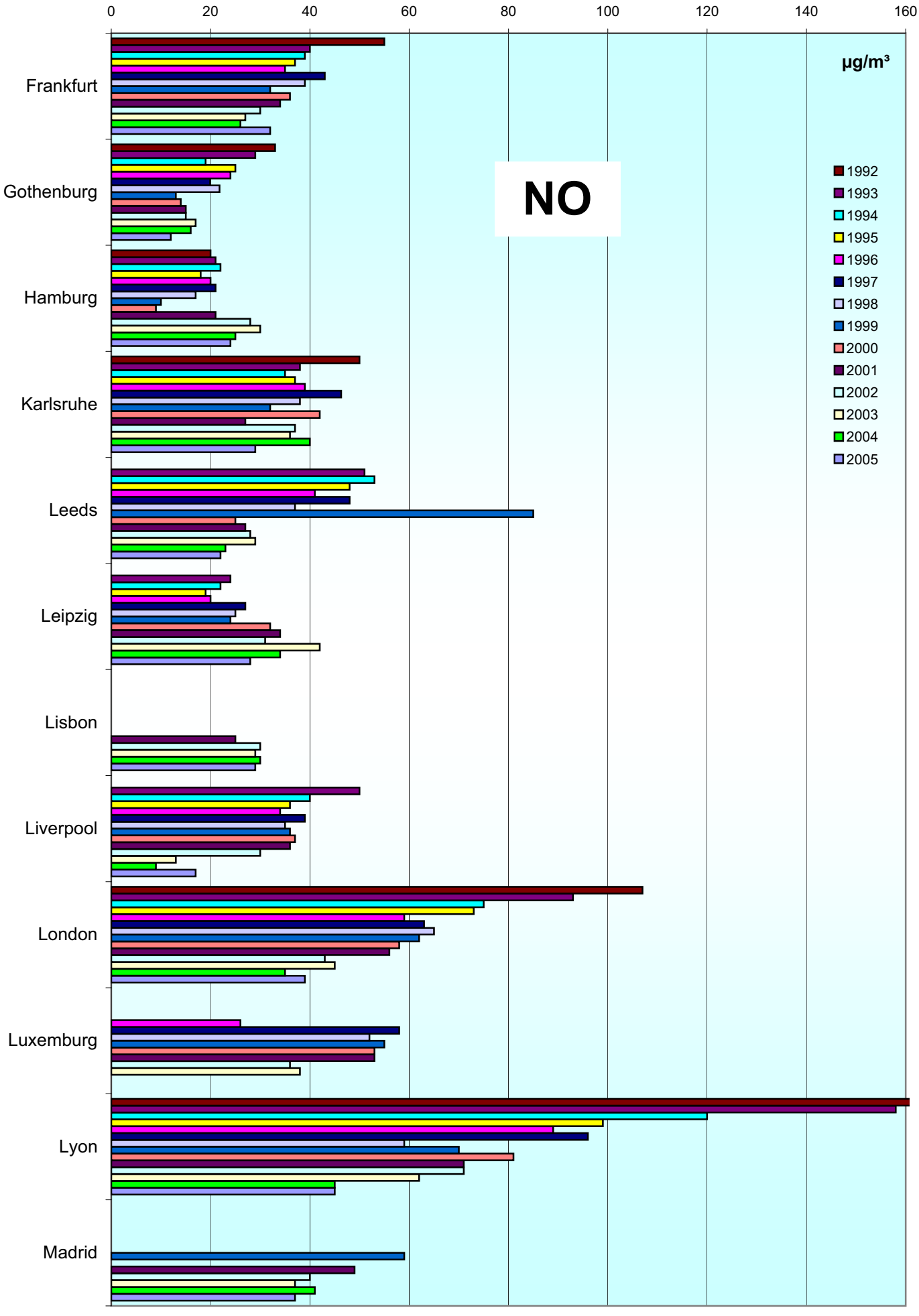
Comparison of The Air Quality 1992 - 2005

Annual mean values (mean of all monitoring stations)



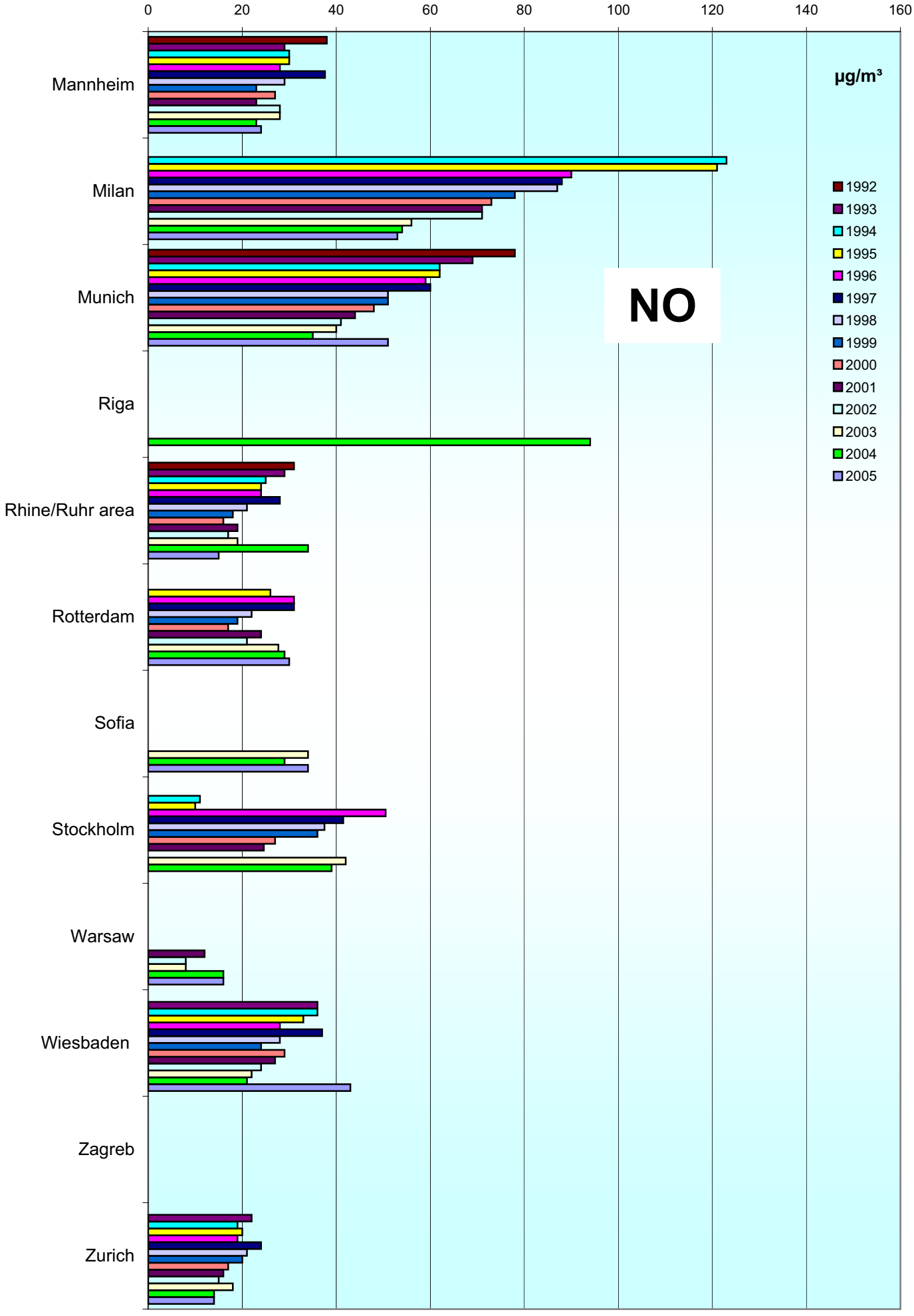
Comparison of The Air Quality 1992 - 2005

Annual mean values (mean of all monitoring stations)



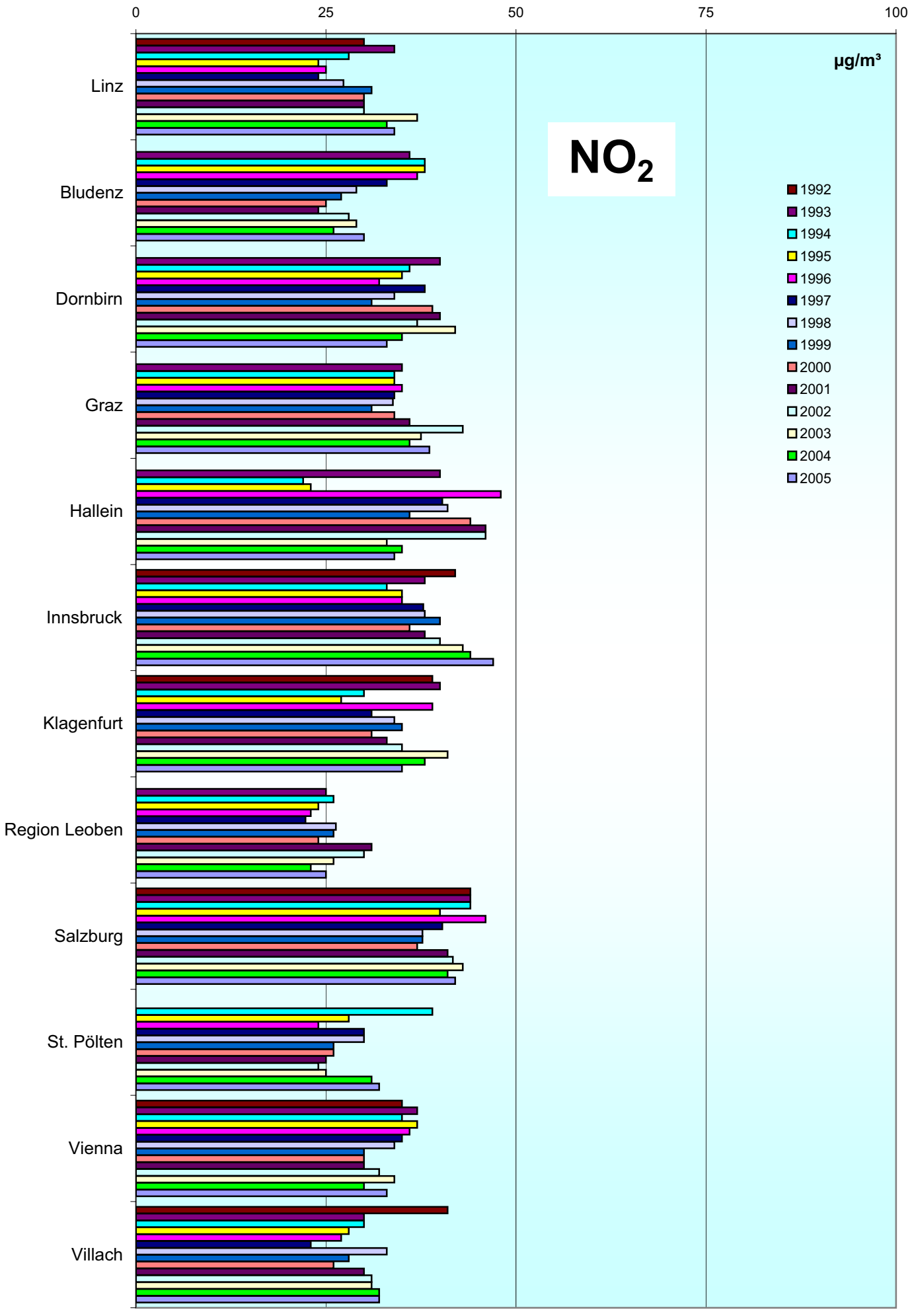
Comparison of The Air Quality 1992 - 2005

Annual mean values (mean of all monitoring stations)



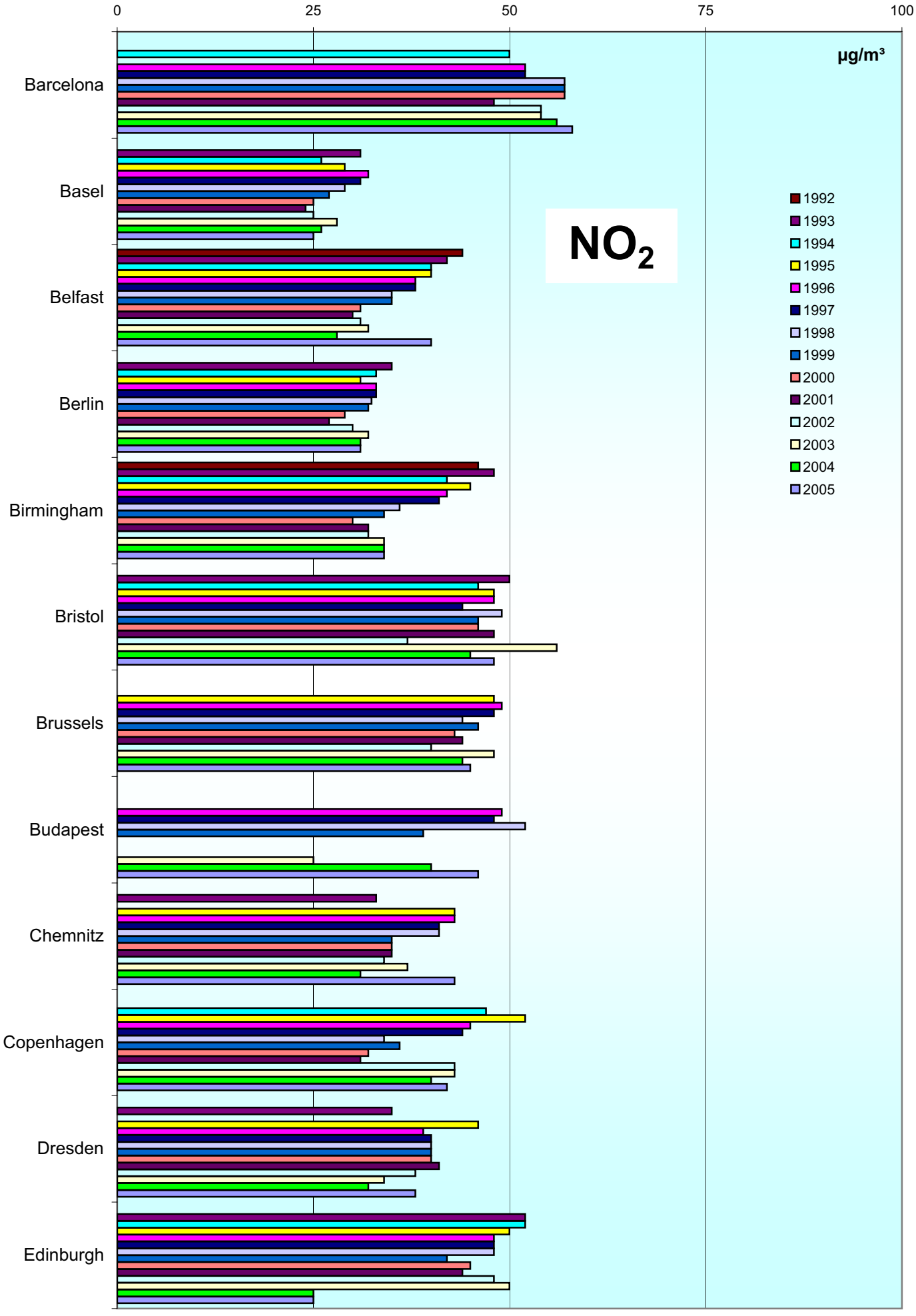
Comparison of The Air Quality 1992 - 2005

Annual mean values (mean of all monitoring stations)



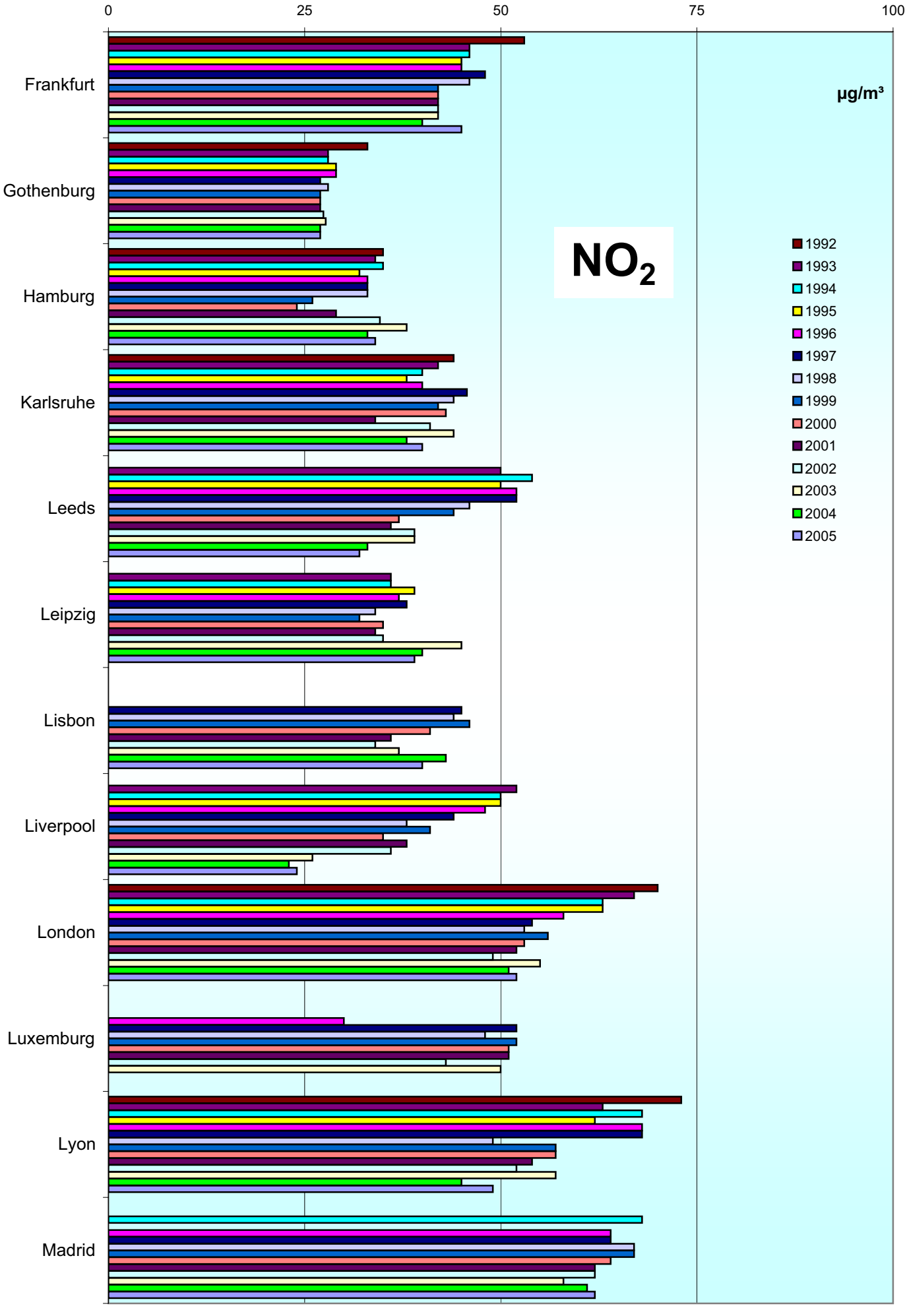
Comparison of The Air Quality 1992 - 2005

Annual mean values (mean of all monitoring stations)



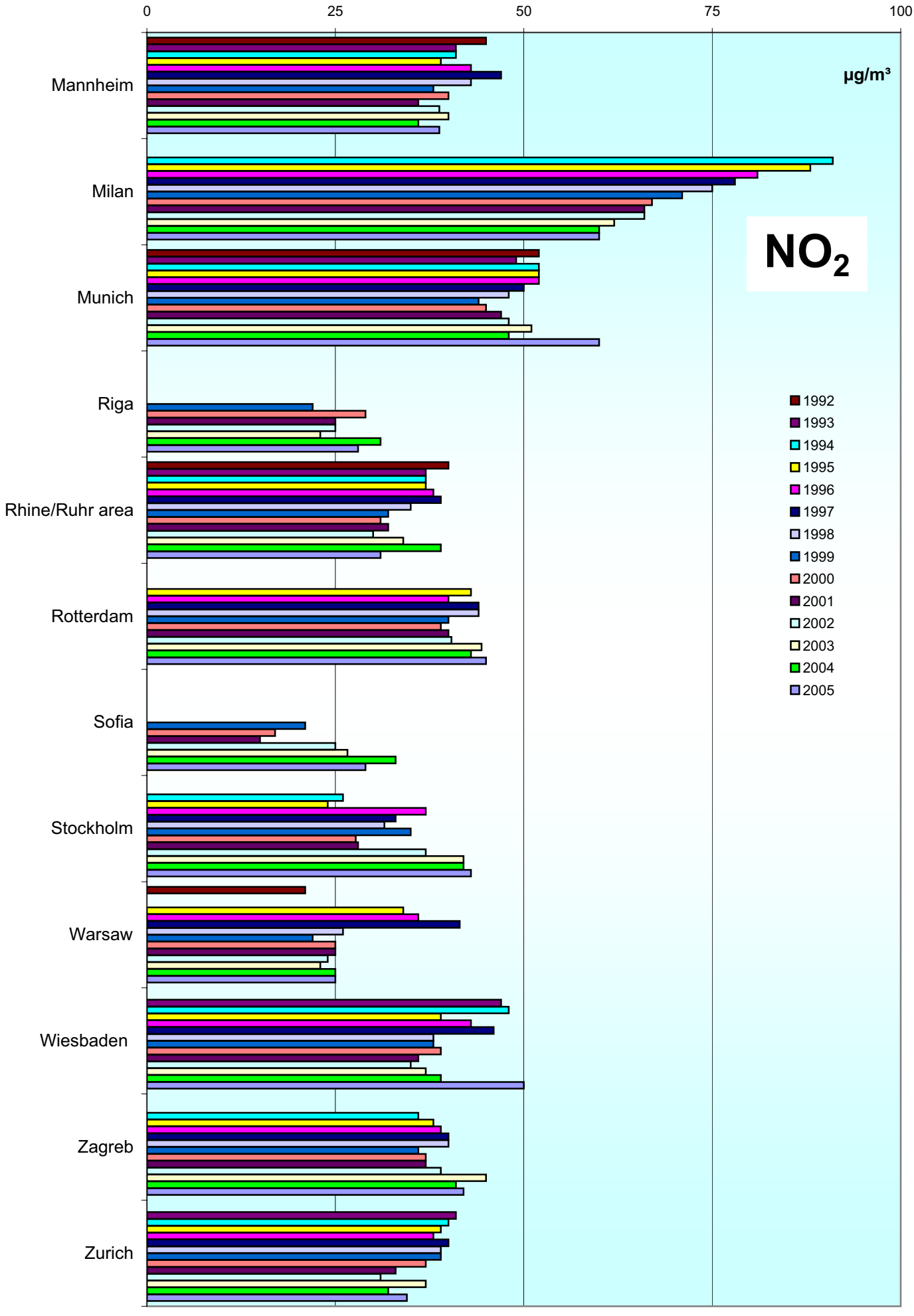
Comparison of The Air Quality 1992 - 2005

Annual mean values (mean of all monitoring stations)



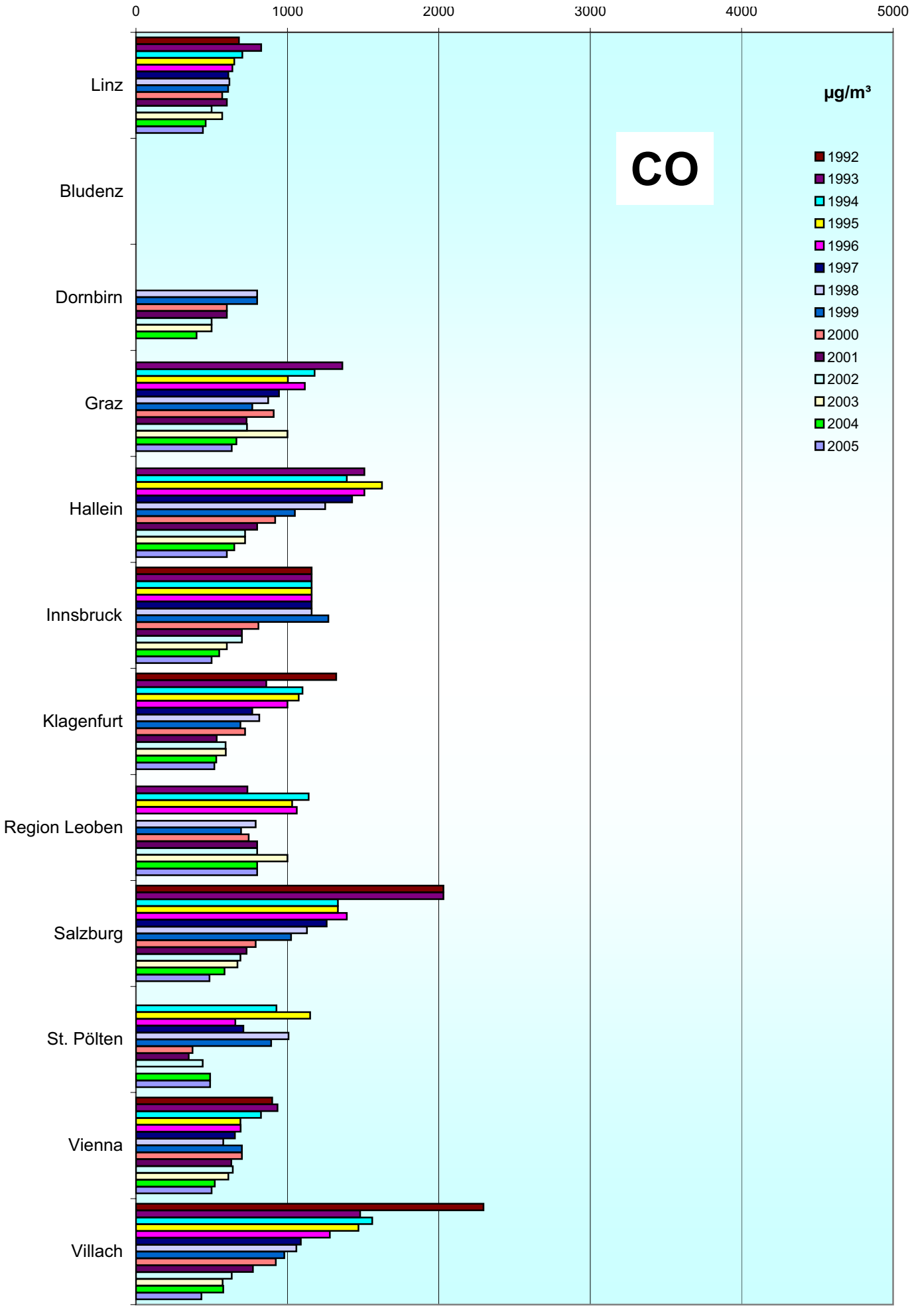
Comparison of The Air Quality 1992 - 2005

Annual mean values (mean of all monitoring stations)



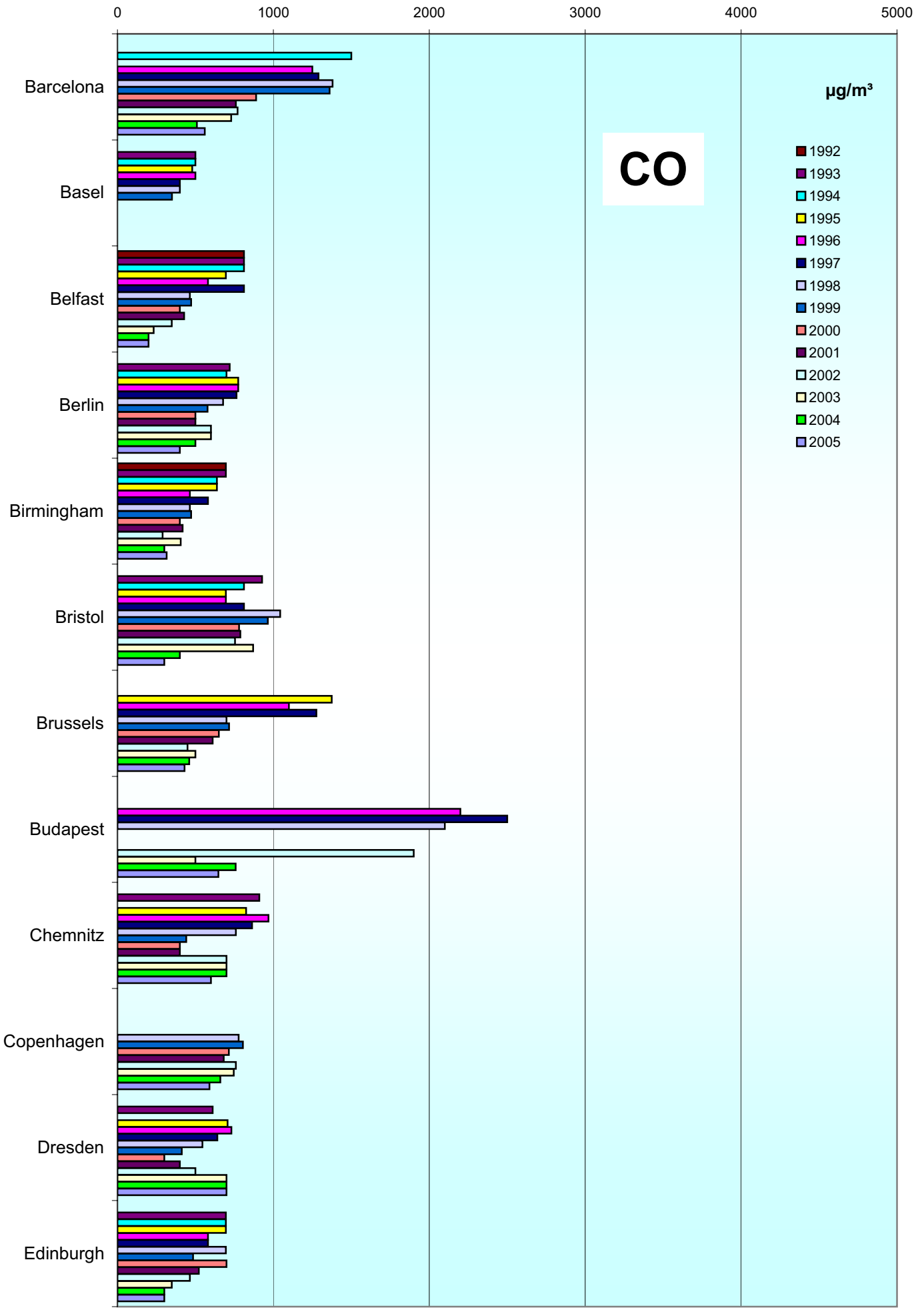
Comparison of The Air Quality 1992 - 2005

Annual mean values (mean of all monitoring stations)



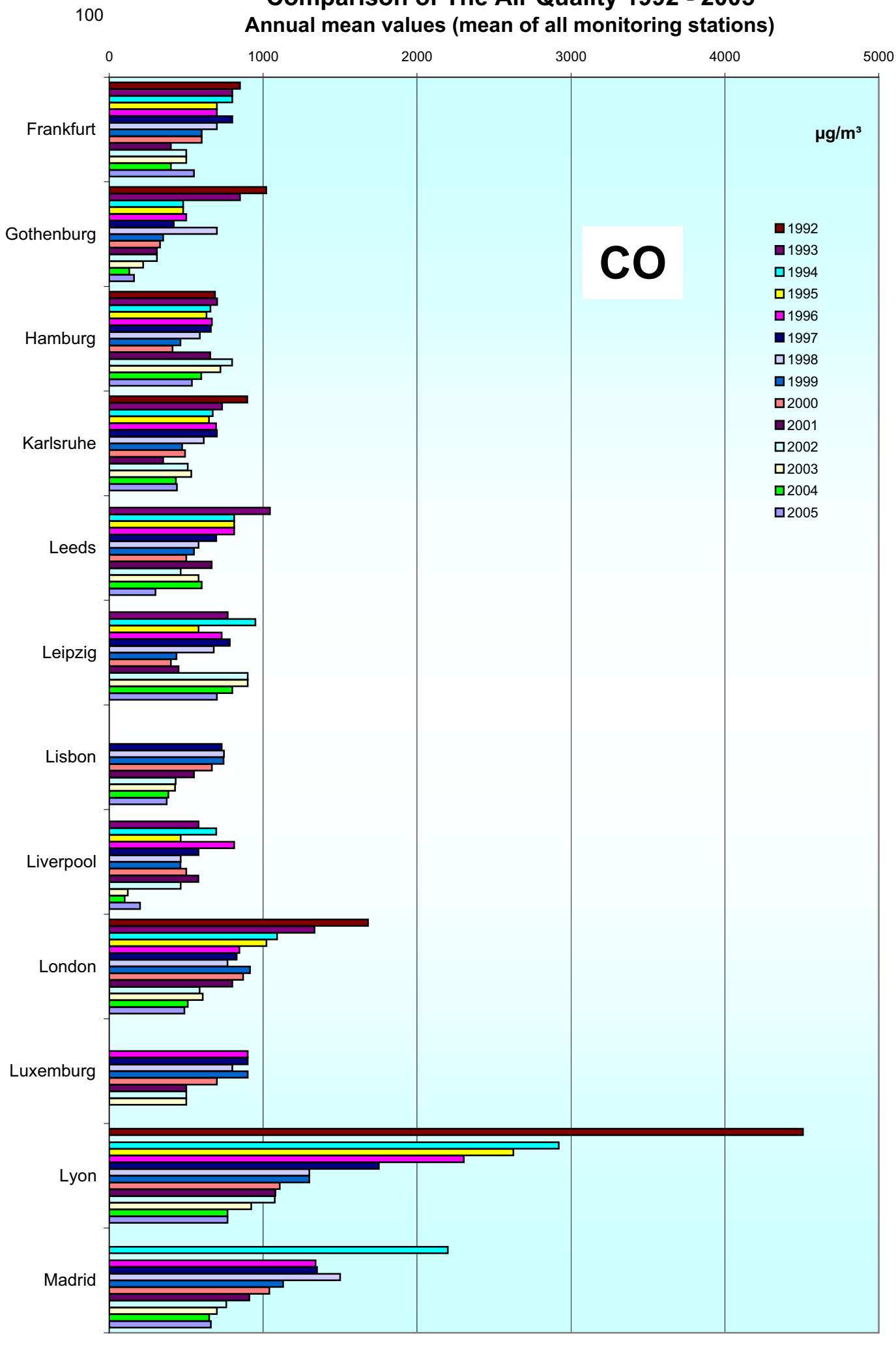
Comparison of The Air Quality 1992 - 2005

Annual mean values (mean of all monitoring stations)



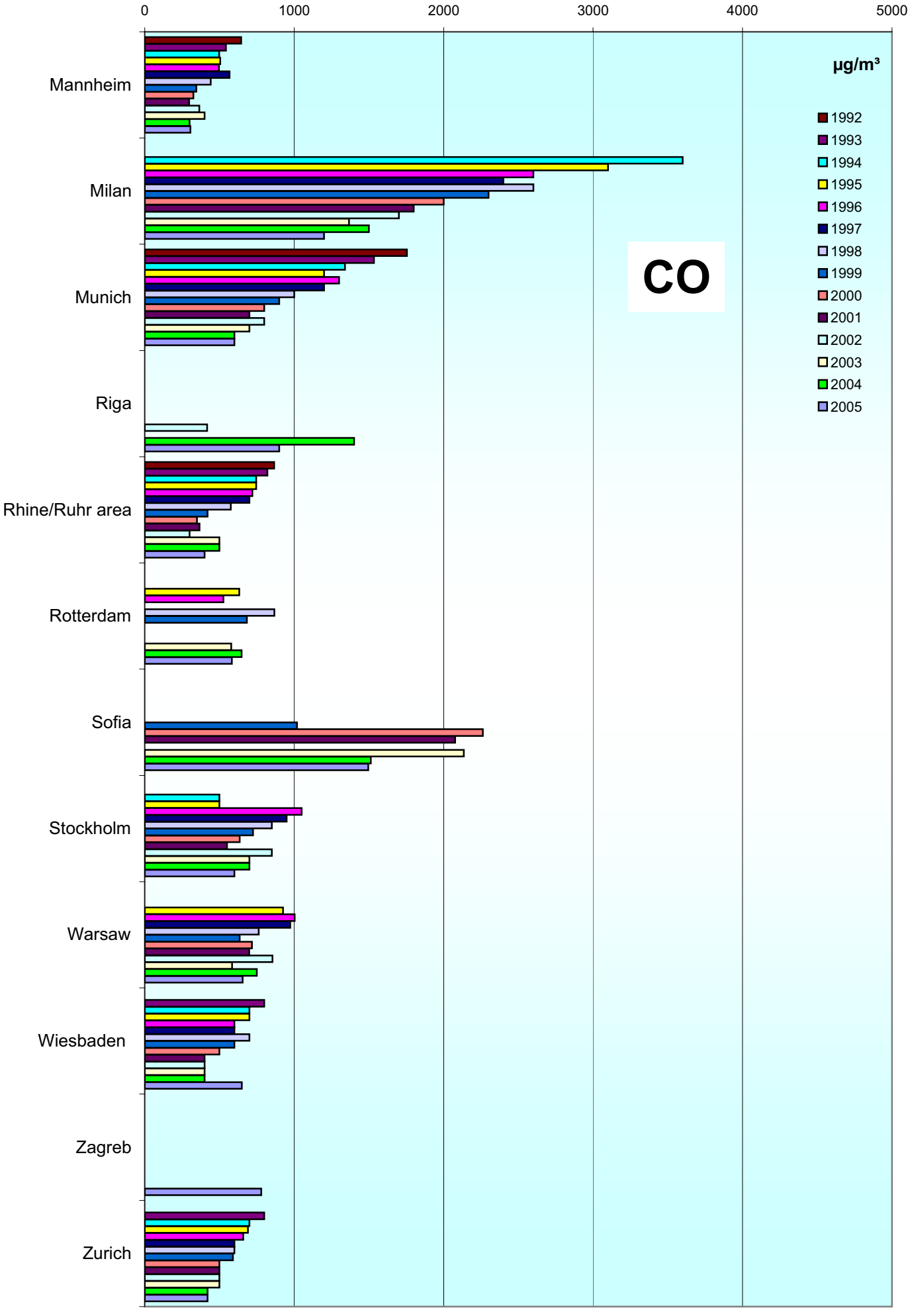
Comparison of The Air Quality 1992 - 2005

Annual mean values (mean of all monitoring stations)



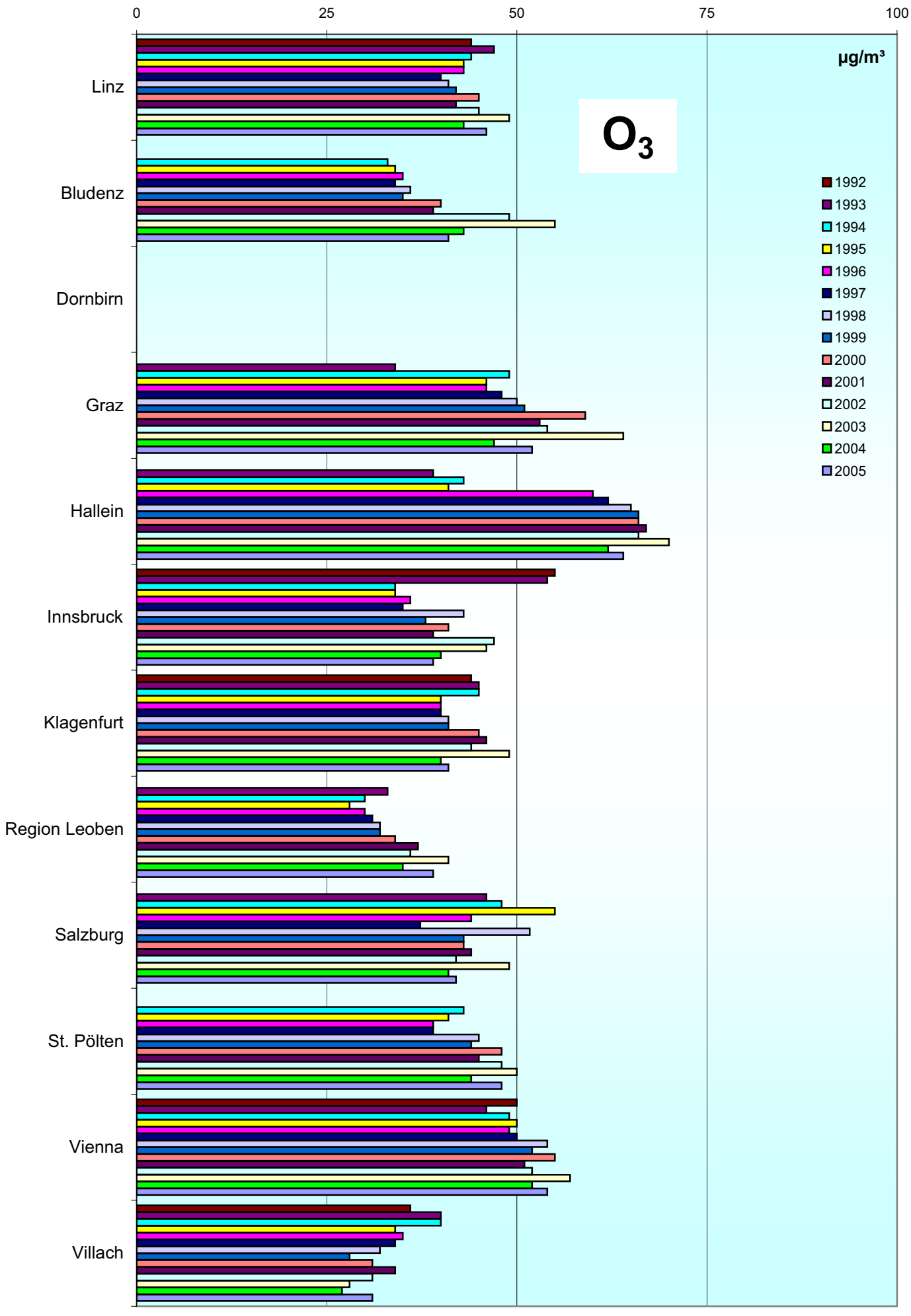
Comparison of The Air Quality 1992 - 2005

Annual mean values (mean of all monitoring stations)



Comparison of The Air Quality 1992 - 2005

Annual mean values (mean of all monitoring stations)



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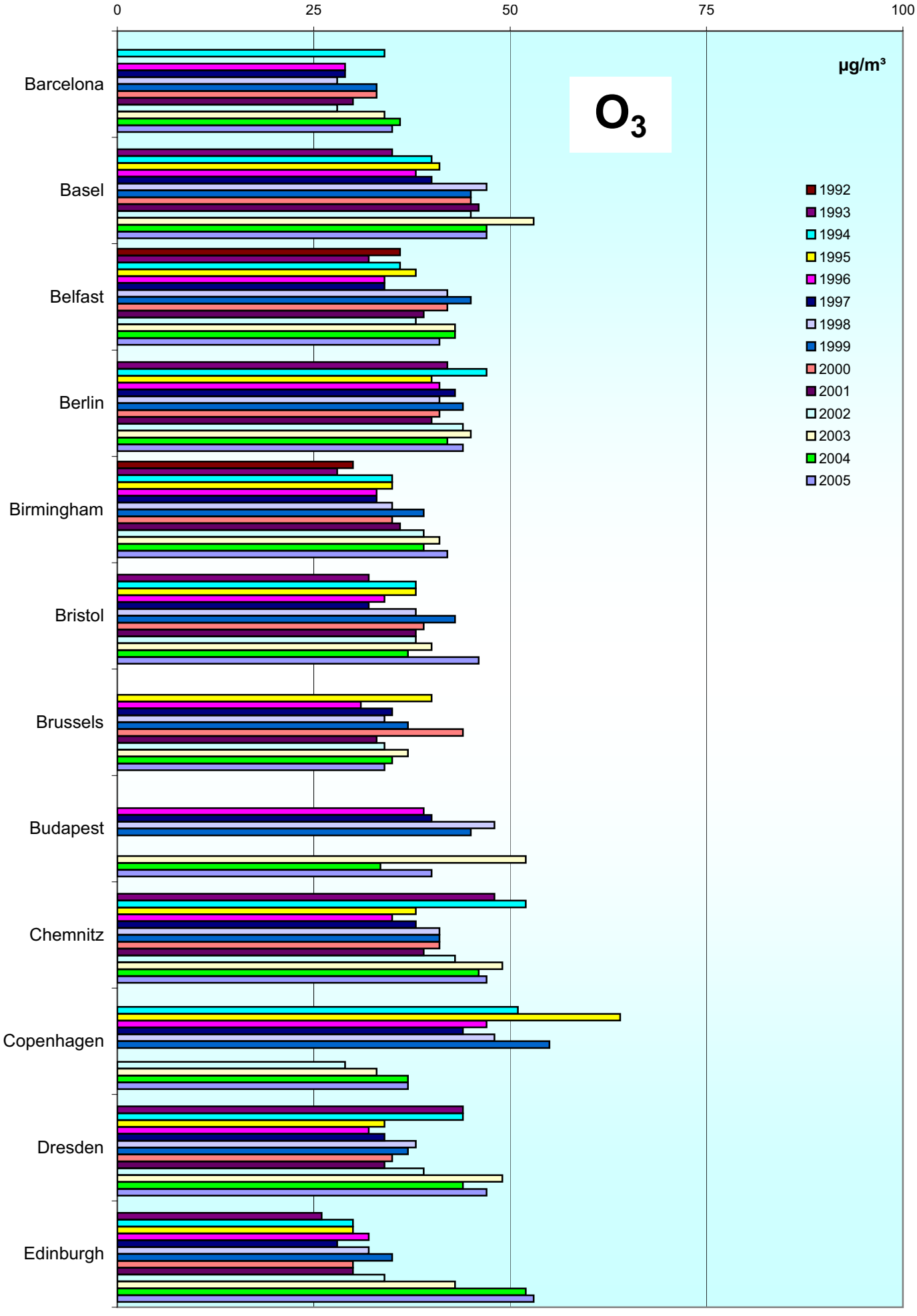
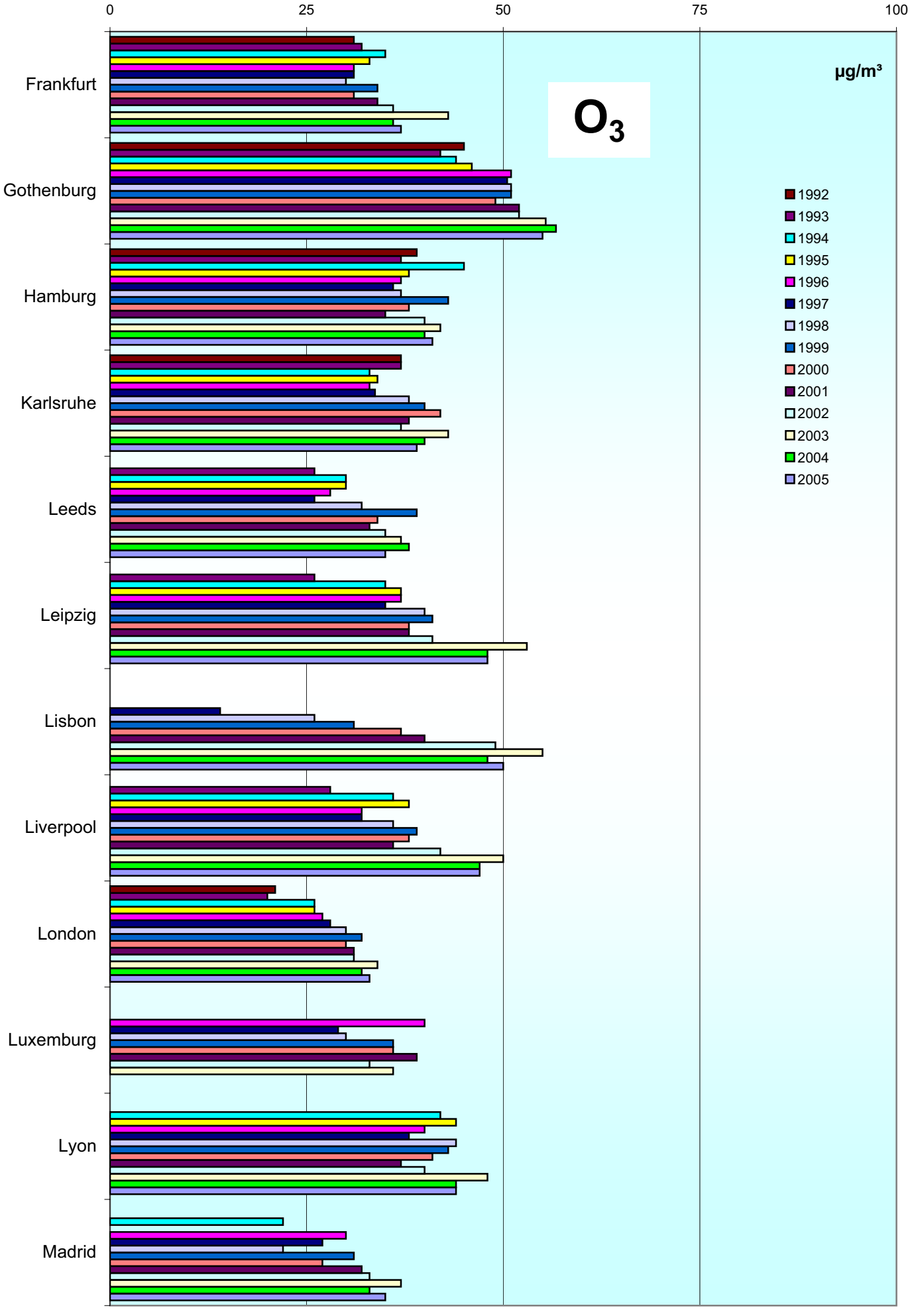
Comparison of The Air Quality 1992 - 2005

Annual mean values (mean of all monitoring stations)



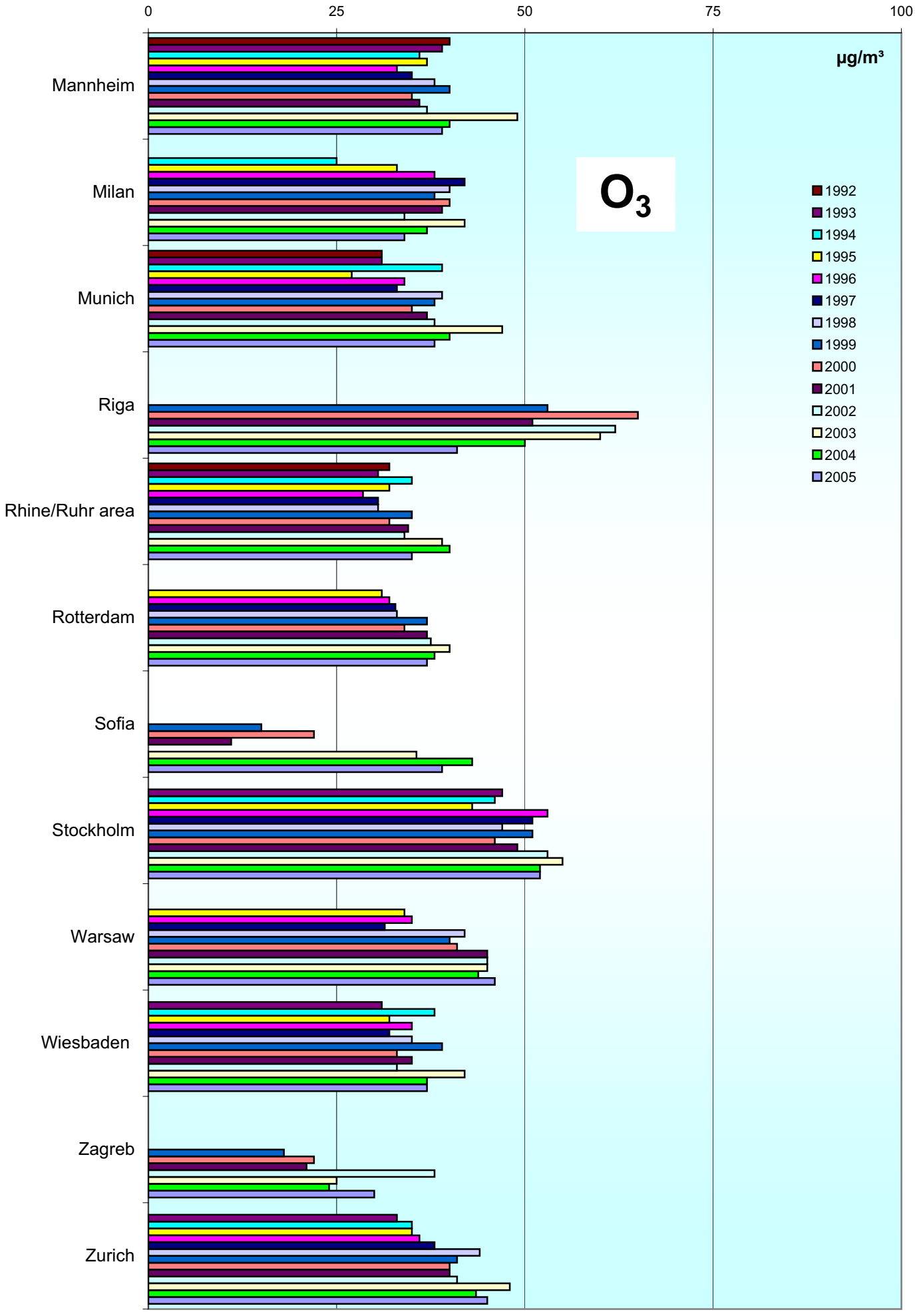
Comparison of The Air Quality 1992 - 2005

Annual mean values (mean of all monitoring stations)



Comparison of The Air Quality 1992 - 2005

Annual mean values (mean of all monitoring stations)



Jahresvergleich

1992 - 2005

max. Tagesmittelwerte

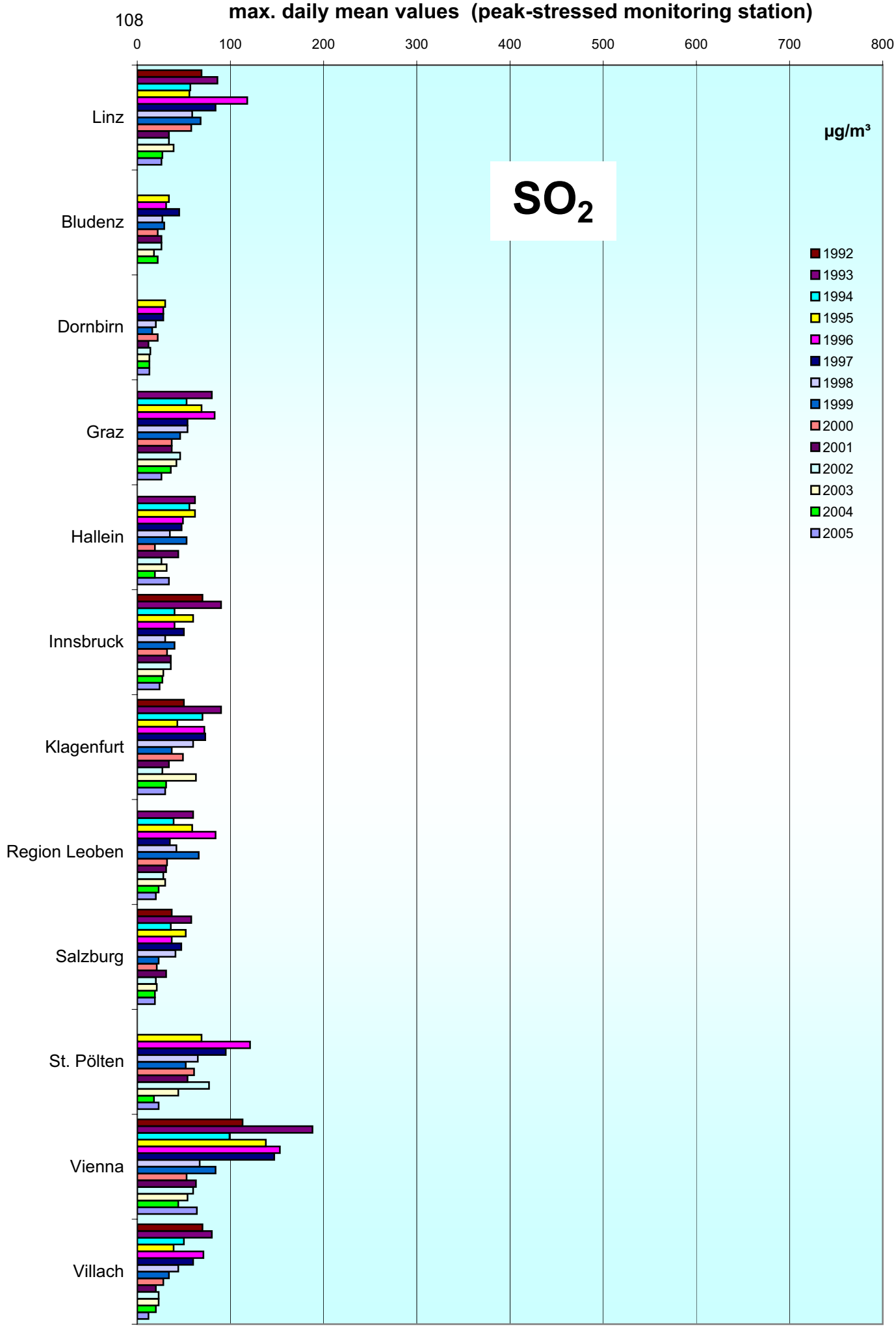
Comparison of The Air Quality Over The Years

1992 - 2005

Max. Daily Mean Values

Comparison of The Air Quality 1992 - 2005

max. daily mean values (peak-stressed monitoring station)



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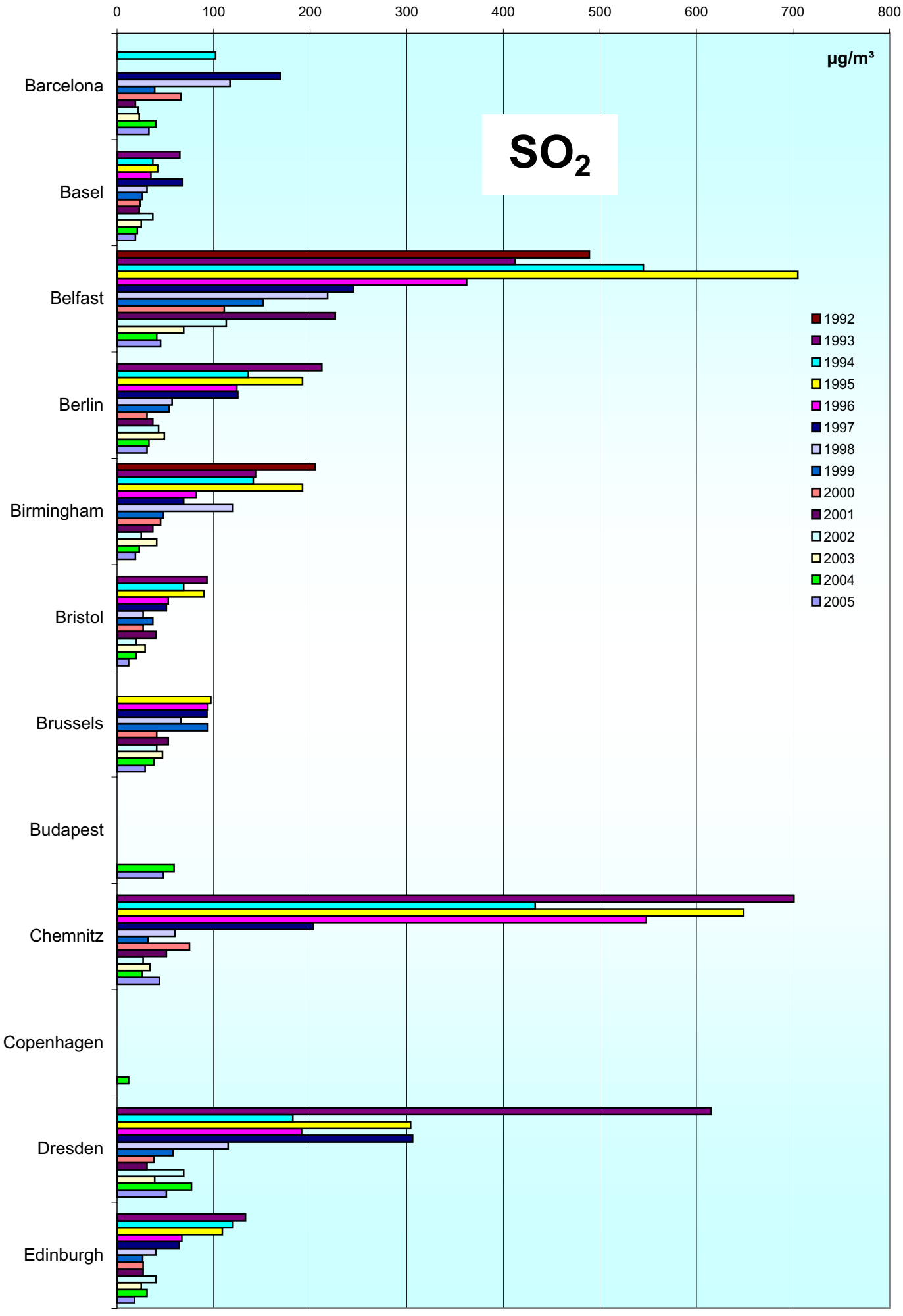
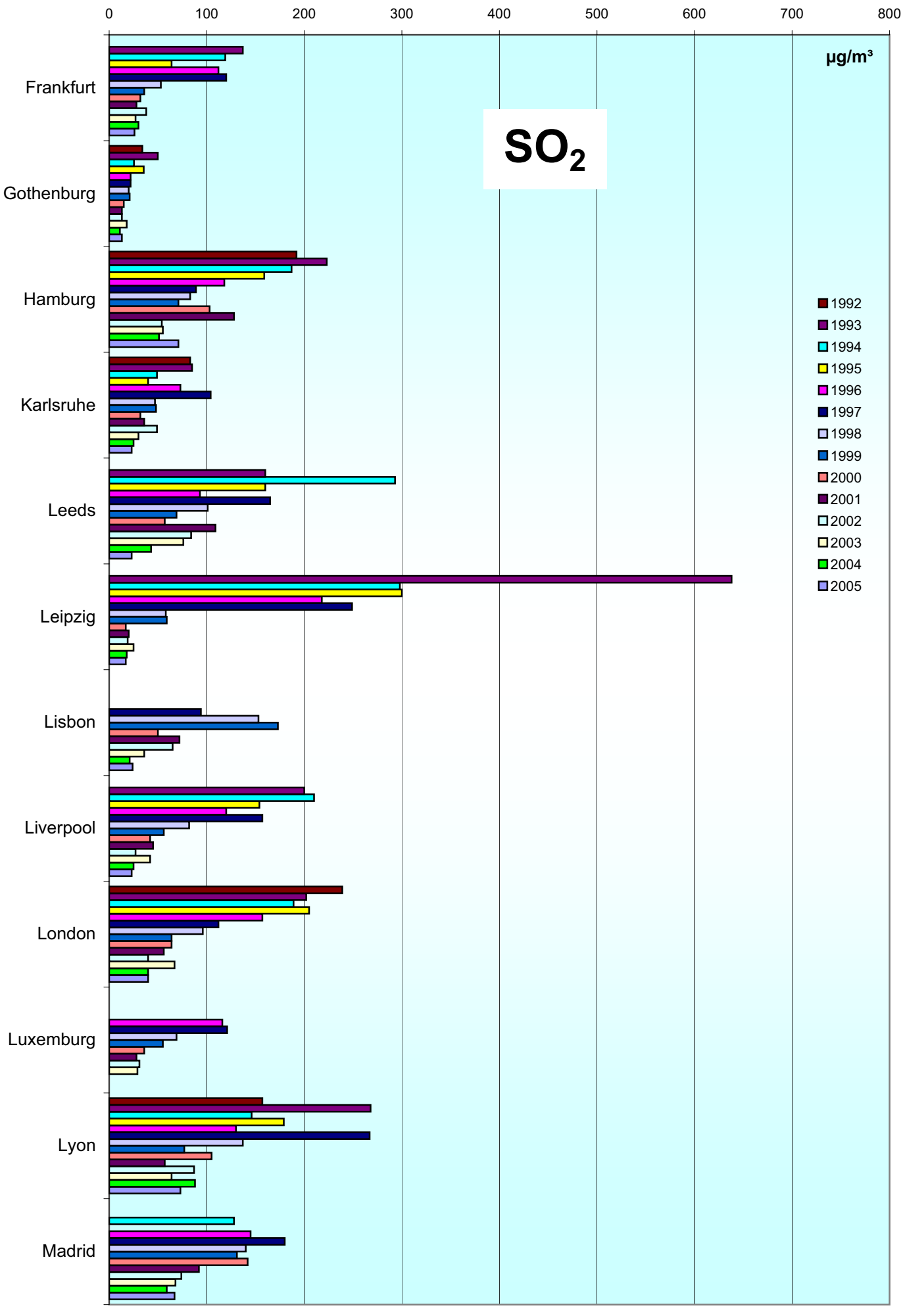
Comparison of The Air Quality 1992 - 2005

max. daily mean values (peak-stressed monitoring station)



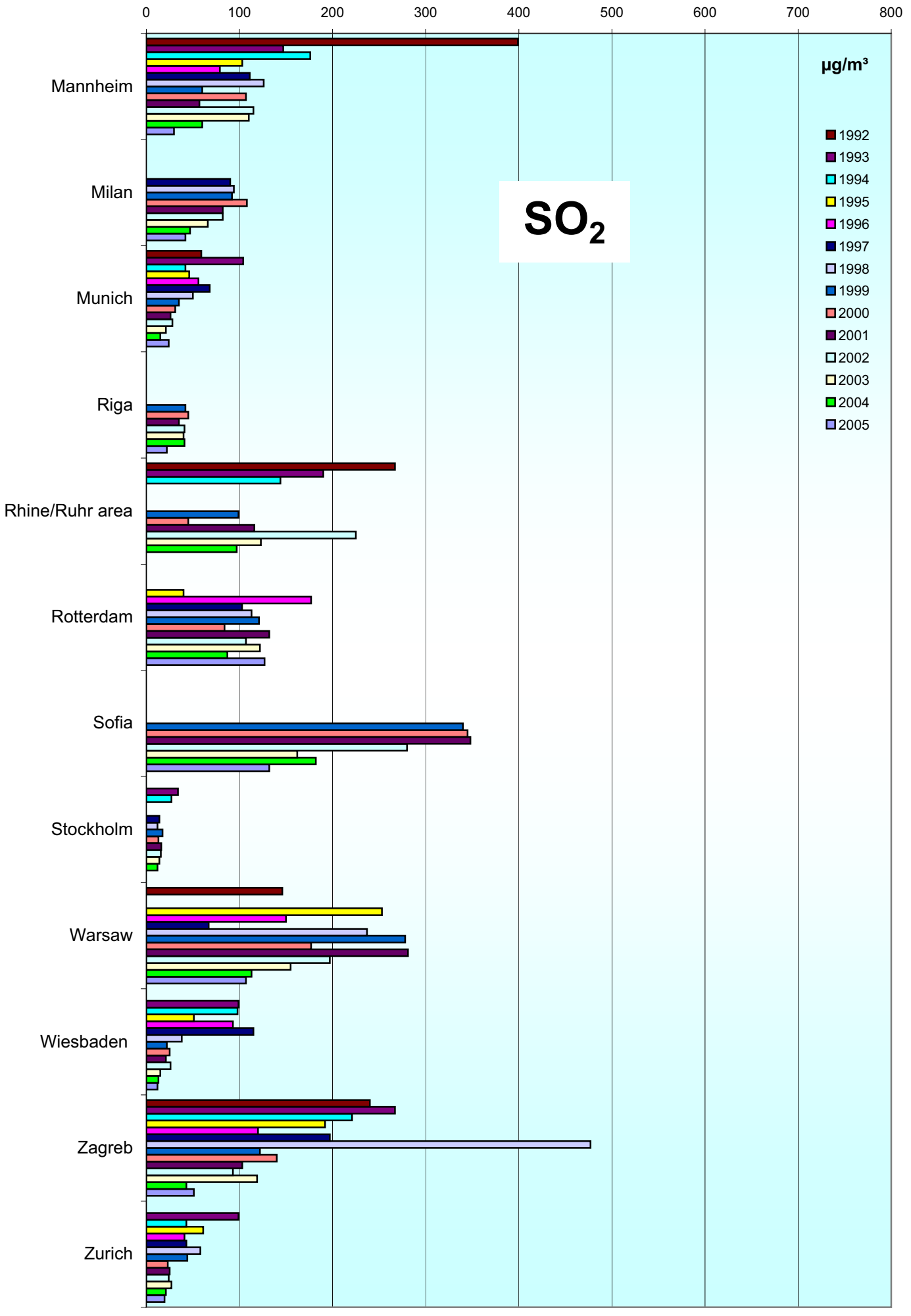
Comparison of The Air Quality 1992 - 2005

max. daily mean values (peak-stressed monitoring station)



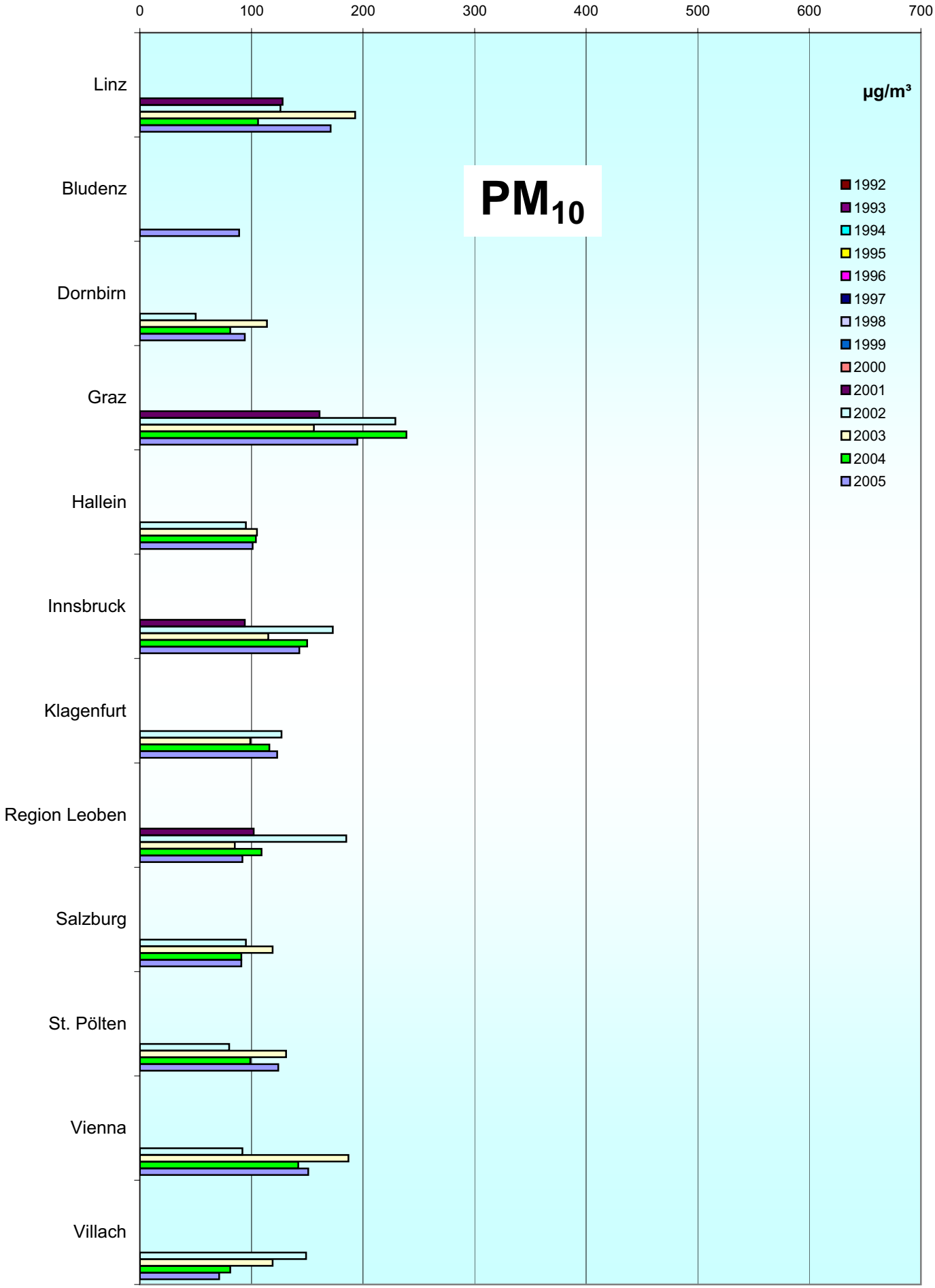
Comparison of The Air Quality 1992 - 2005

max. daily mean values (peak-stressed monitoring station)



Comparison of The Air Quality 1992 - 2005

112 **max. daily mean values (peak-stressed monitoring station)**



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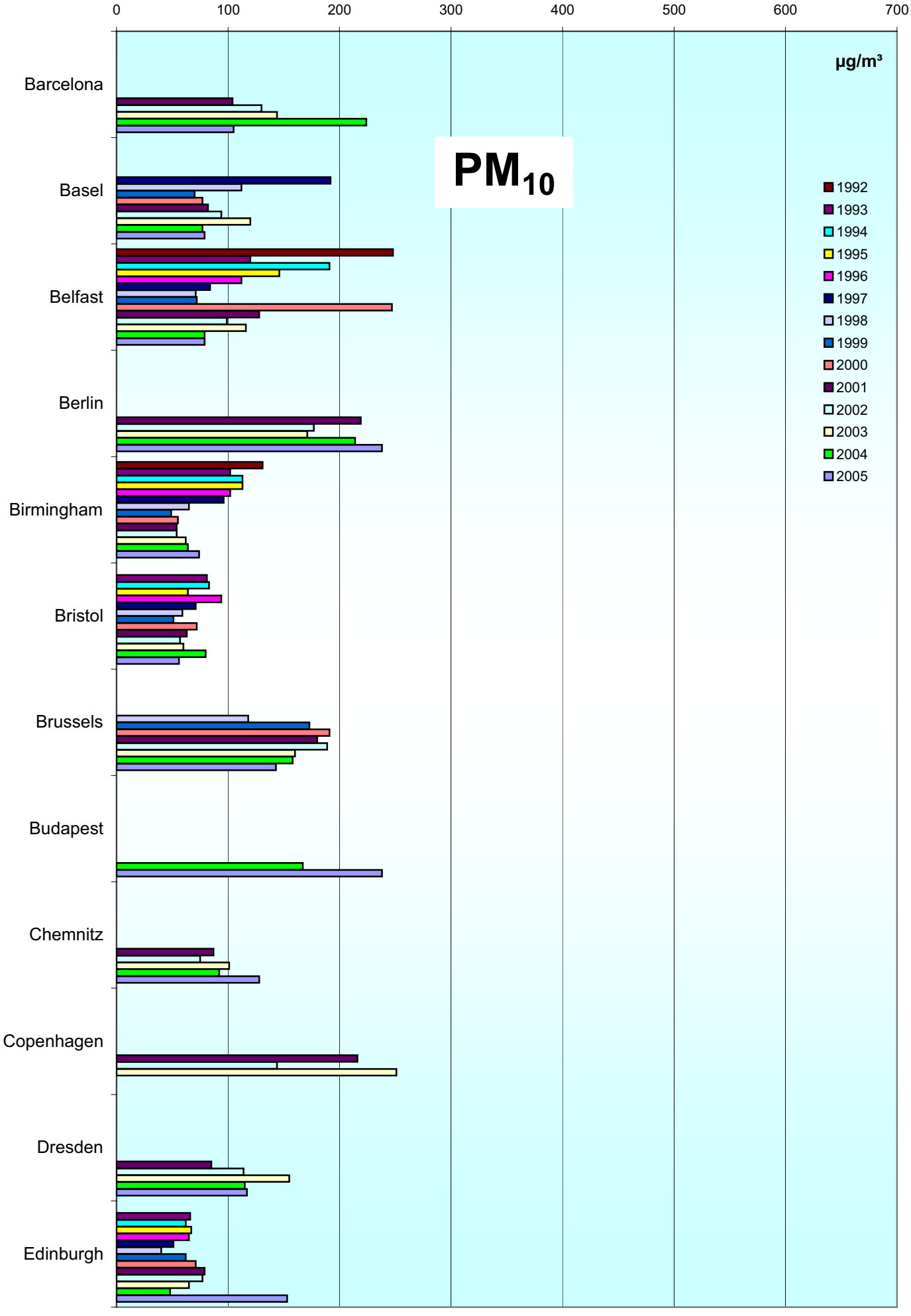
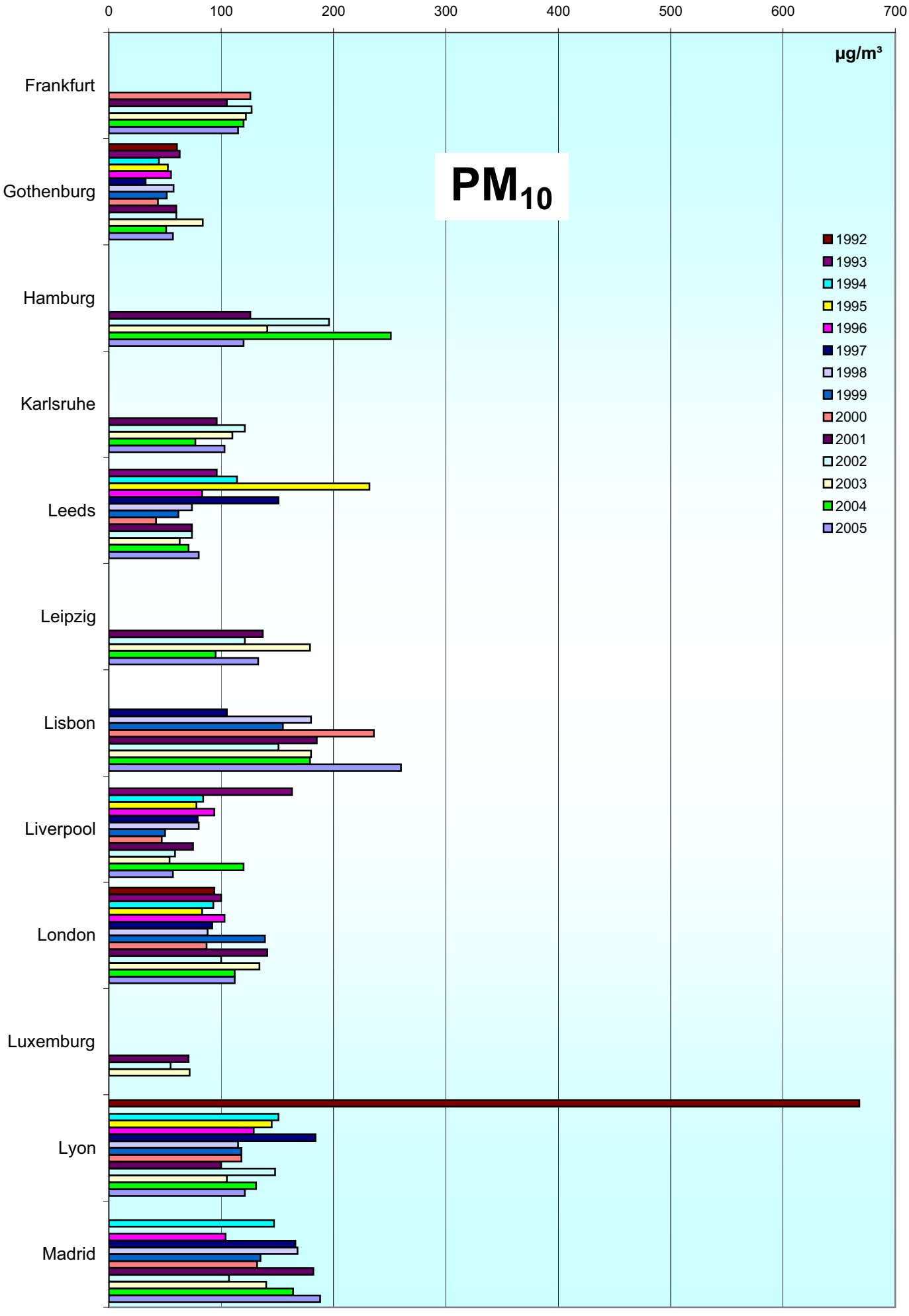
Comparison of The Air Quality 1992 - 2005

max. daily mean values (peak-stressed monitoring station)



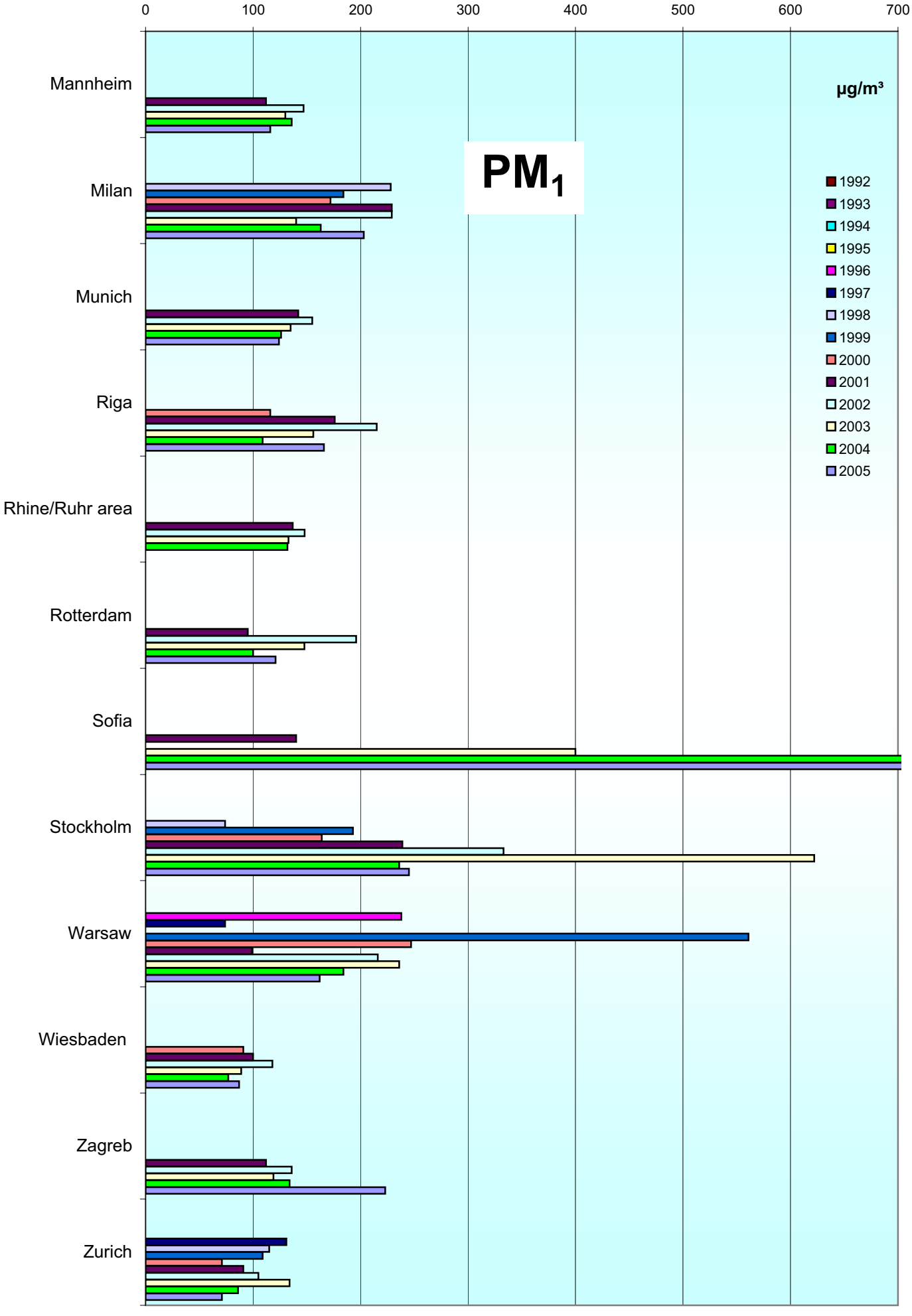
Comparison of The Air Quality 1992 - 2005

max. daily mean values (peak-stressed monitoring station)



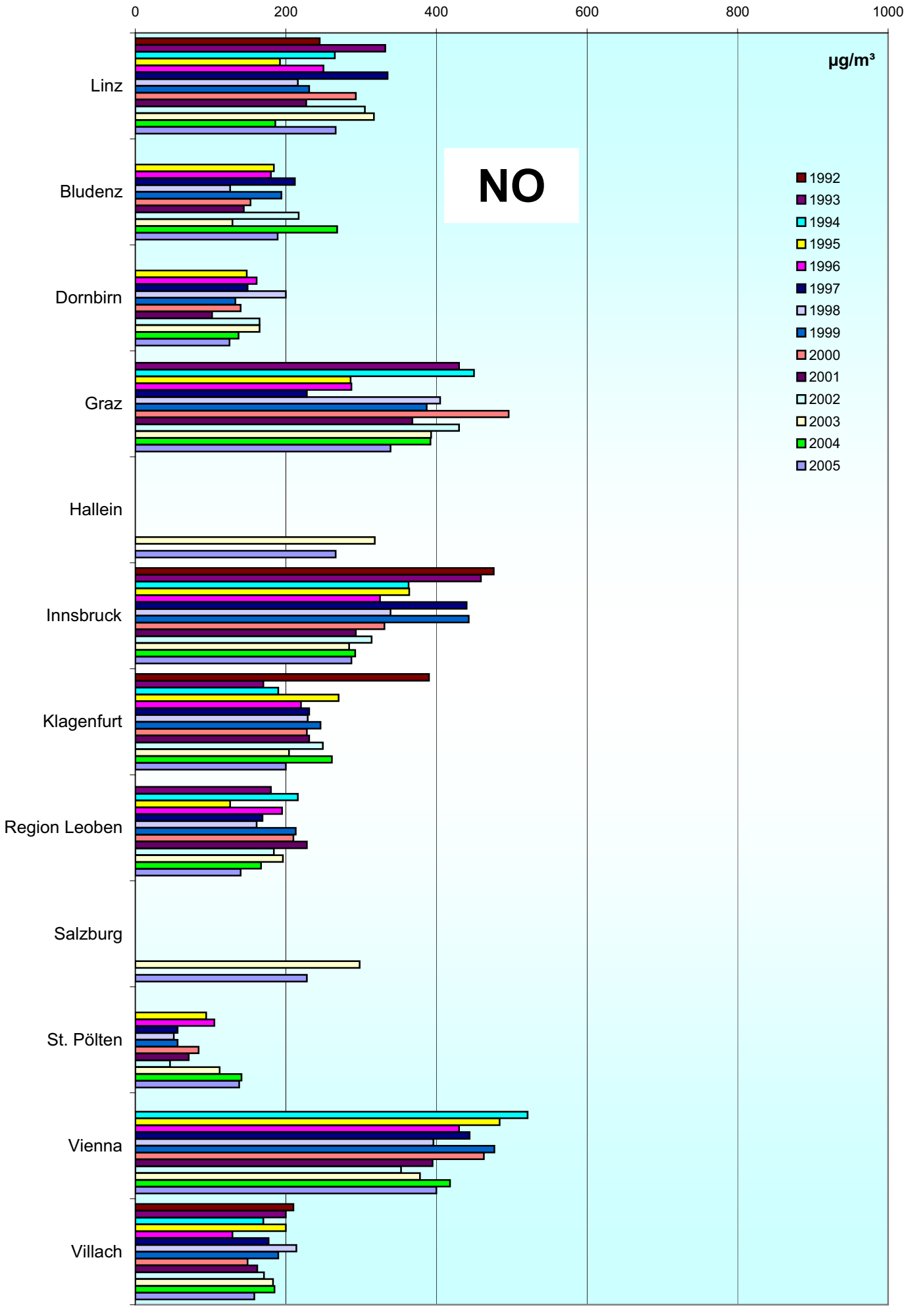
Comparison of The Air Quality 1992 - 2005

max. daily mean values (peak-stressed monitoring station)



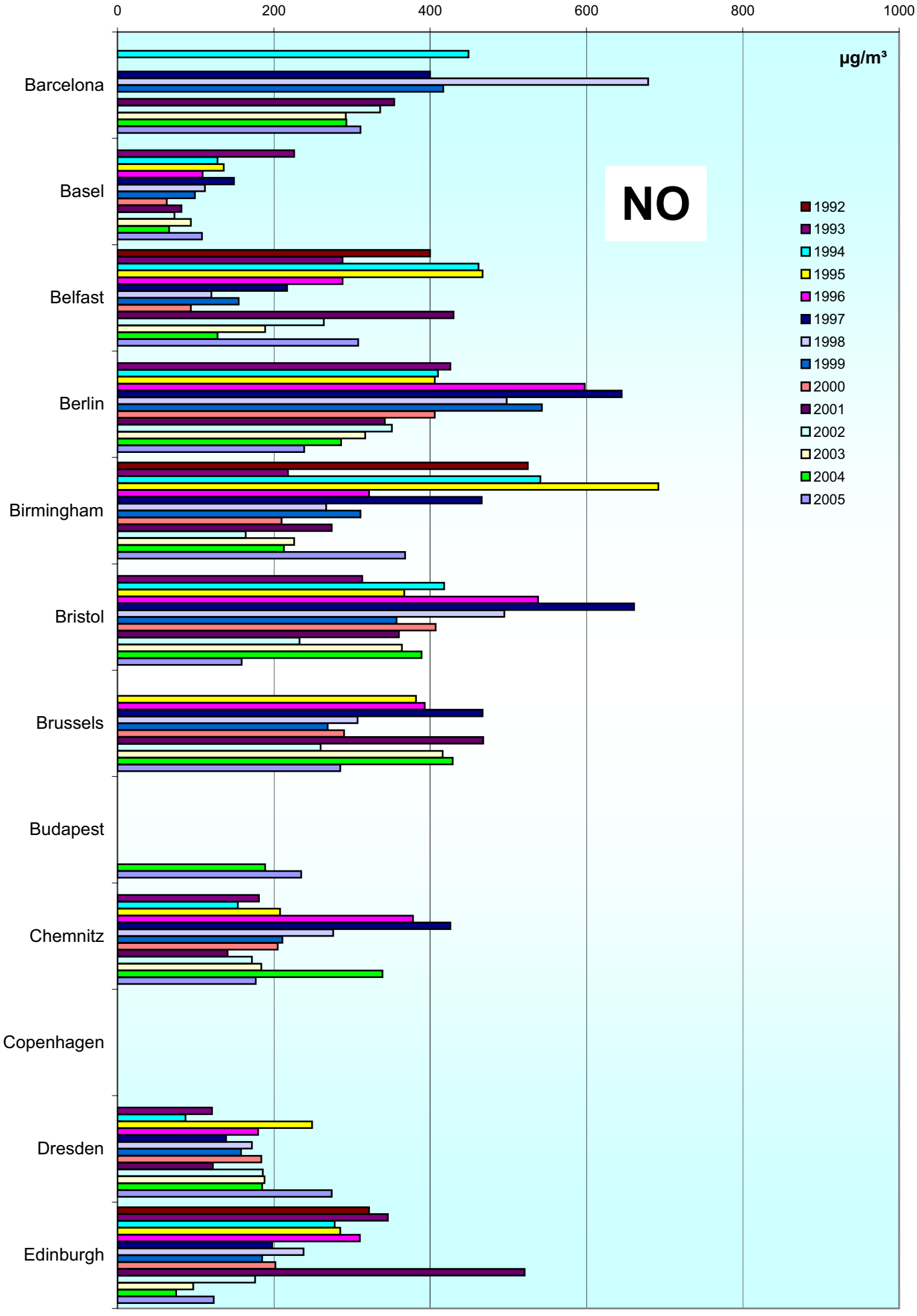
Comparison of The Air Quality 1992 - 2005

max. daily mean values (peak-stressed monitoring station)



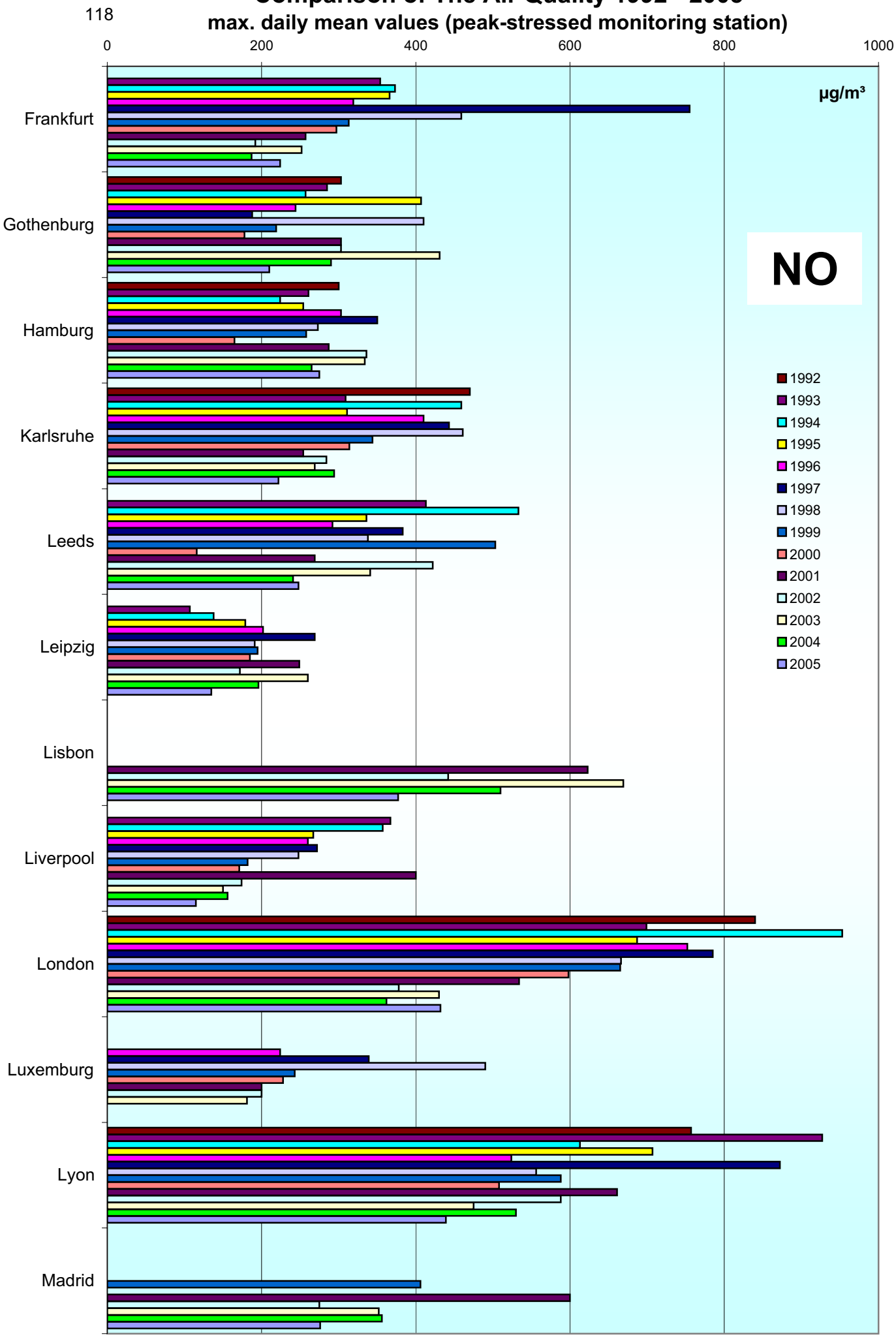
Comparison of The Air Quality 1992 - 2005

max. daily mean values (peak-stressed monitoring station)



Comparison of The Air Quality 1992 - 2005

max. daily mean values (peak-stressed monitoring station)



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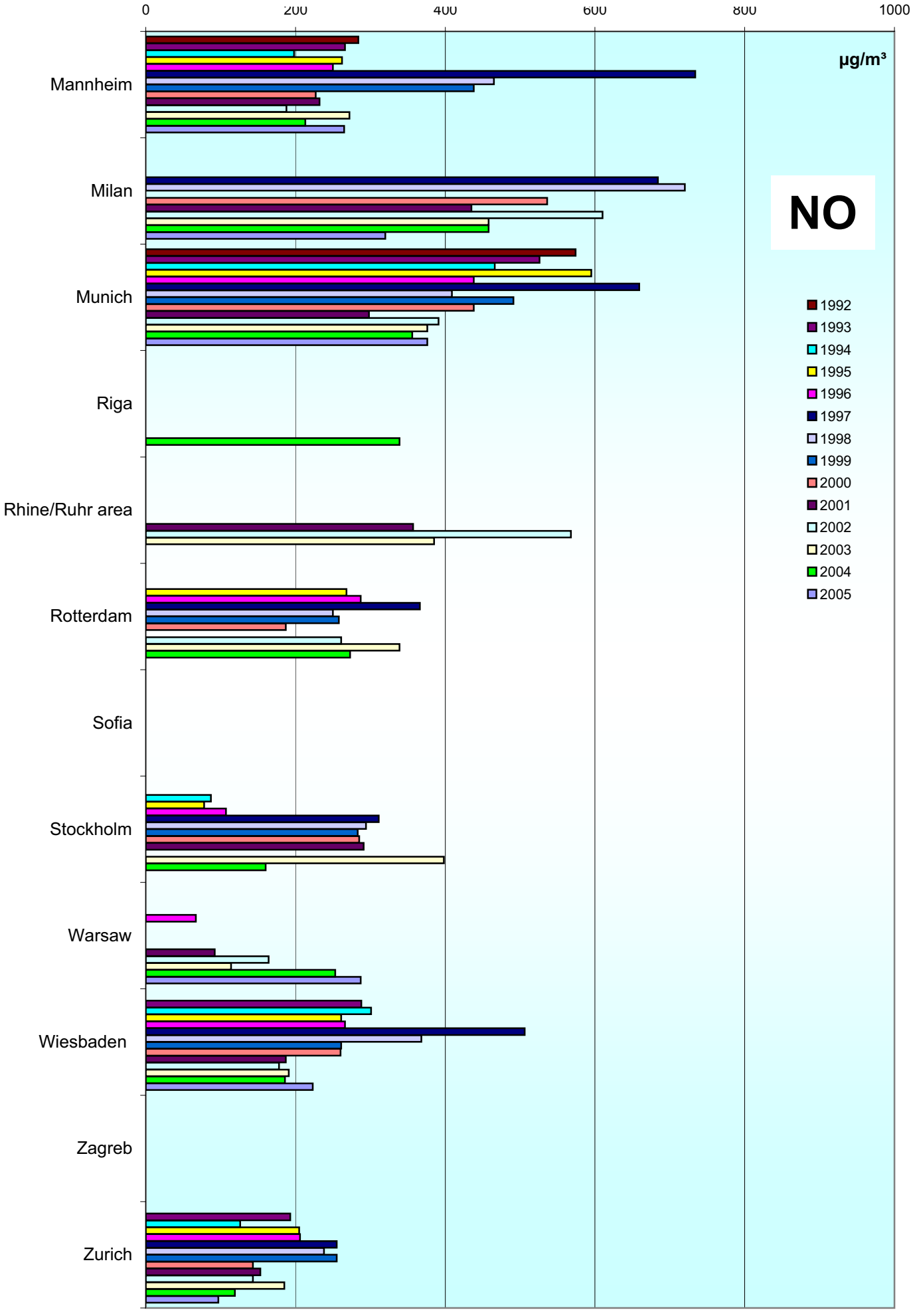
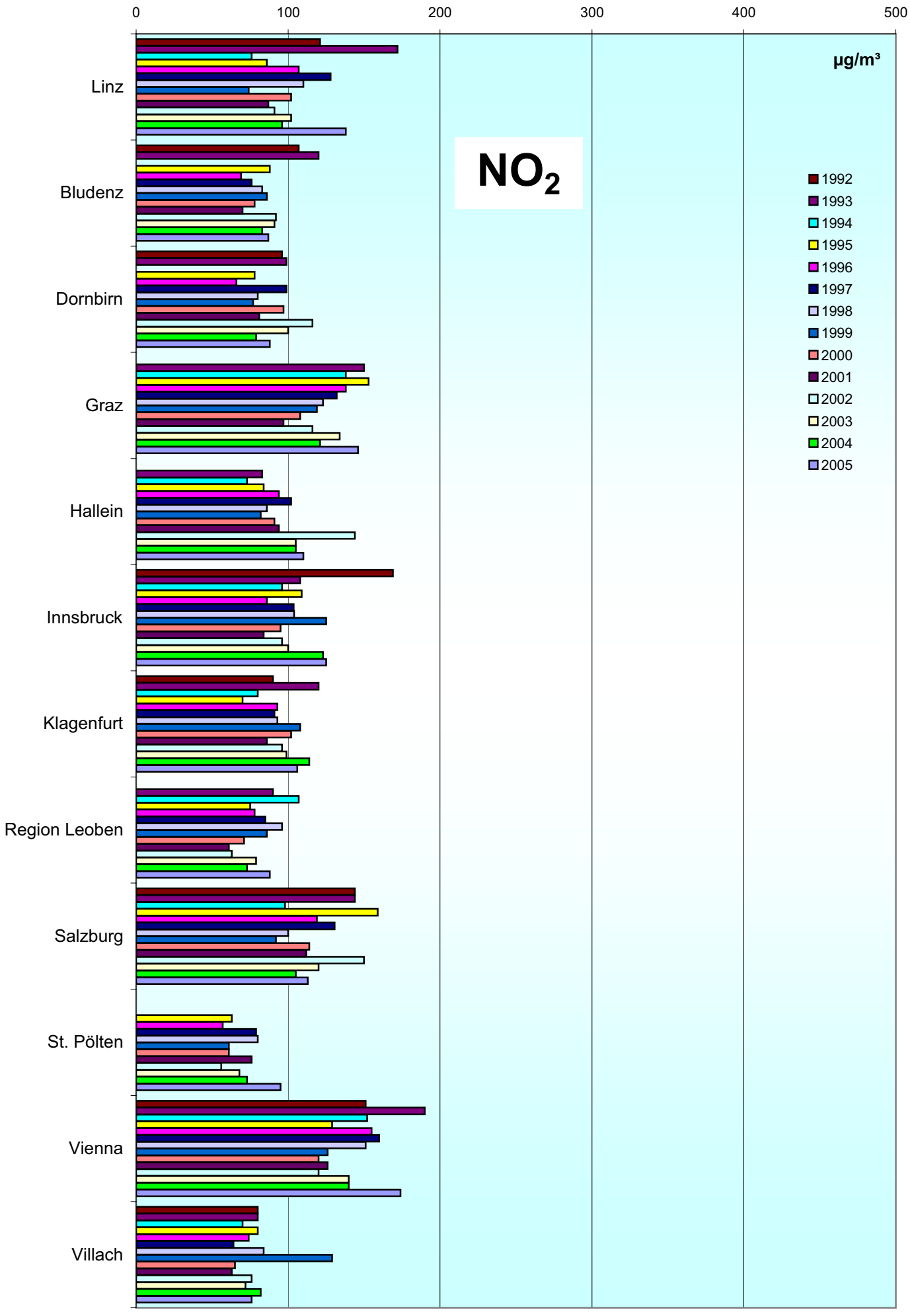
Comparison of The Air Quality 1992 - 2005

max. daily mean values (peak-stressed monitoring station)



Comparison of The Air Quality 1992 - 2005

max. daily mean values (peak-stressed monitoring station)



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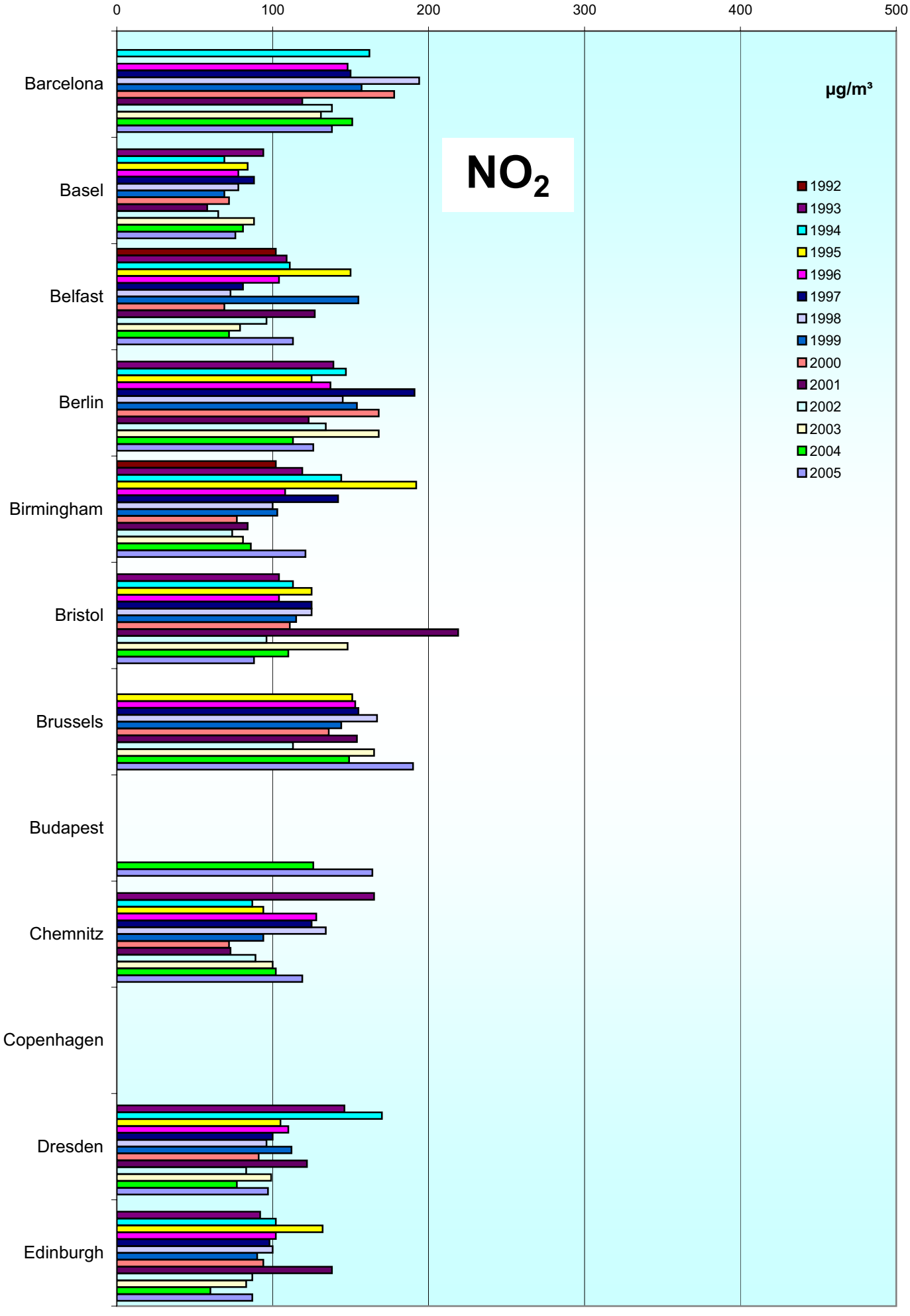
Comparison of The Air Quality 1992 - 2005

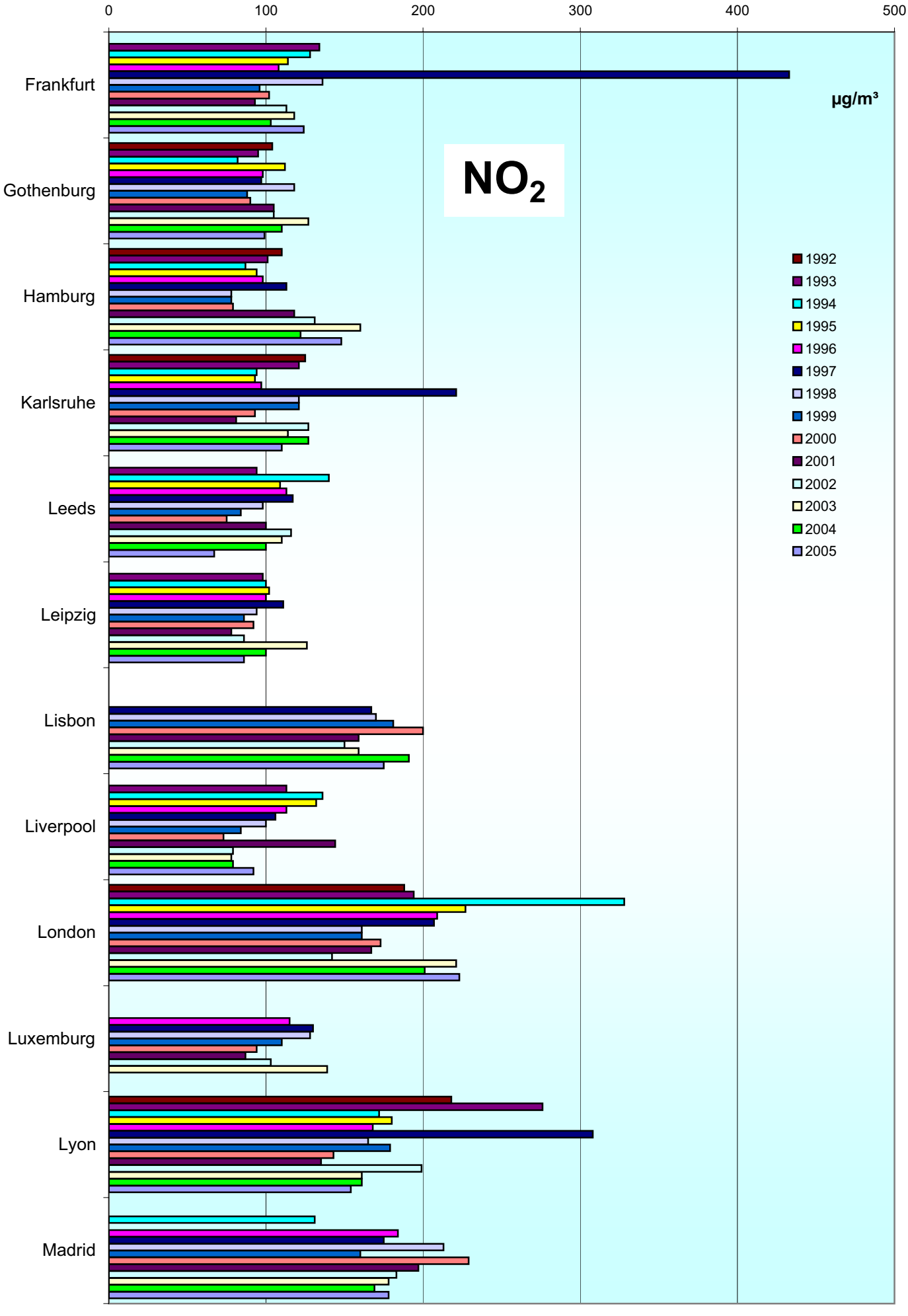
max. daily mean values (peak-stressed monitoring station)



Comparison of The Air Quality 1992 - 2005

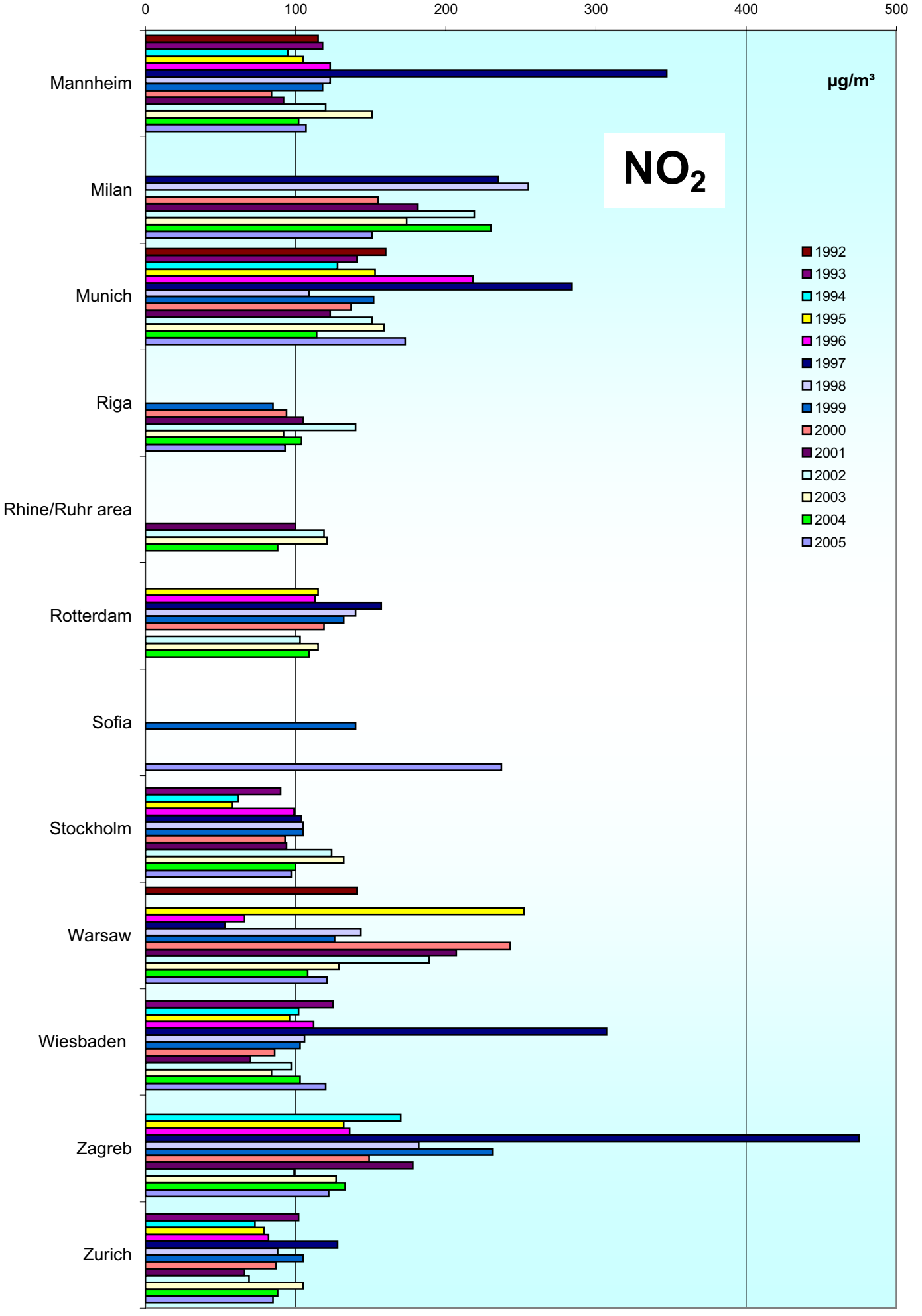
max. daily mean values (peak-stressed monitoring station)

122



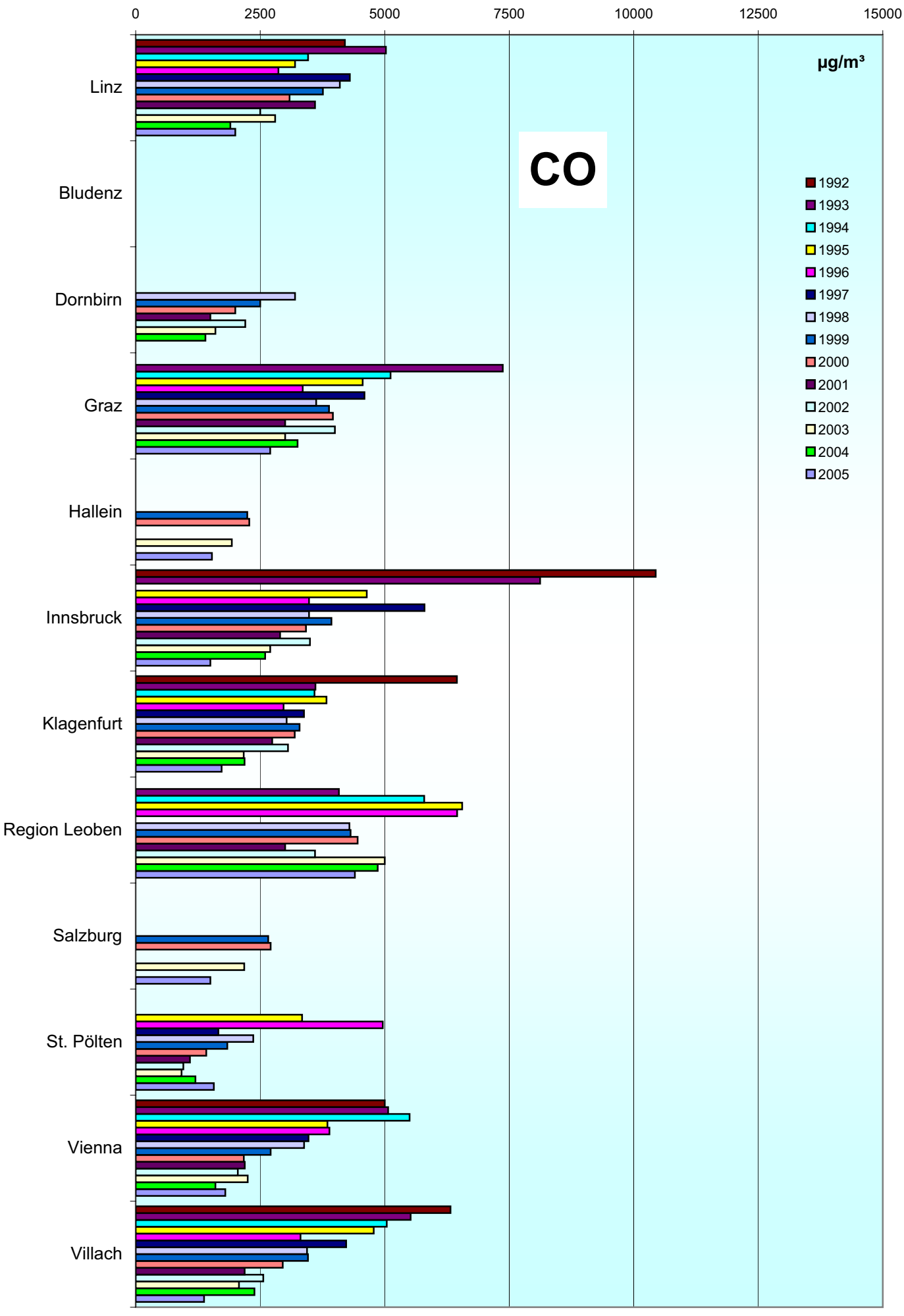
Comparison of The Air Quality 1992 - 2005

max. daily mean values (peak-stressed monitoring station)



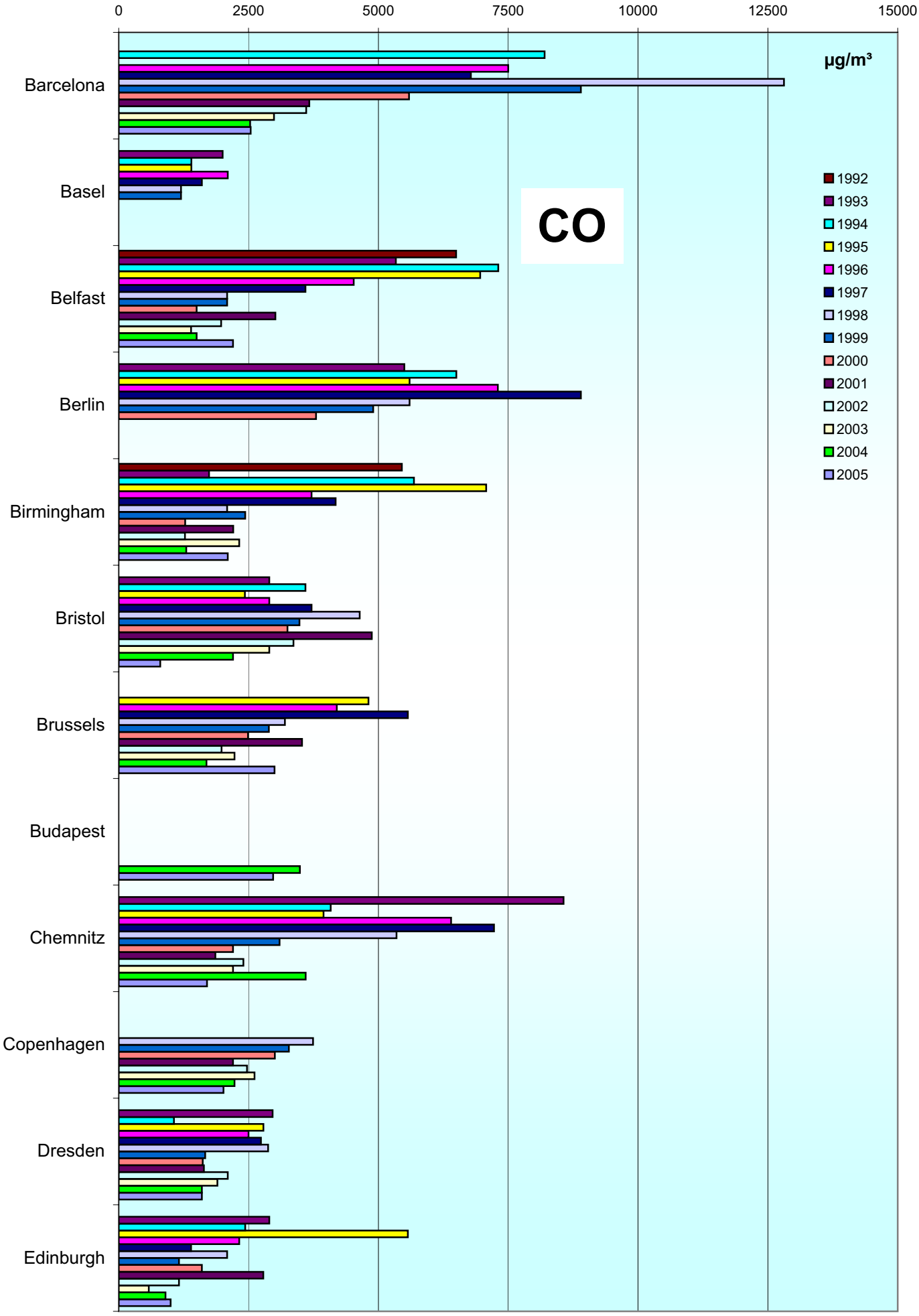
Comparison of The Air Quality 1992 - 2005

max. daily mean values (peak-stressed monitoring station)



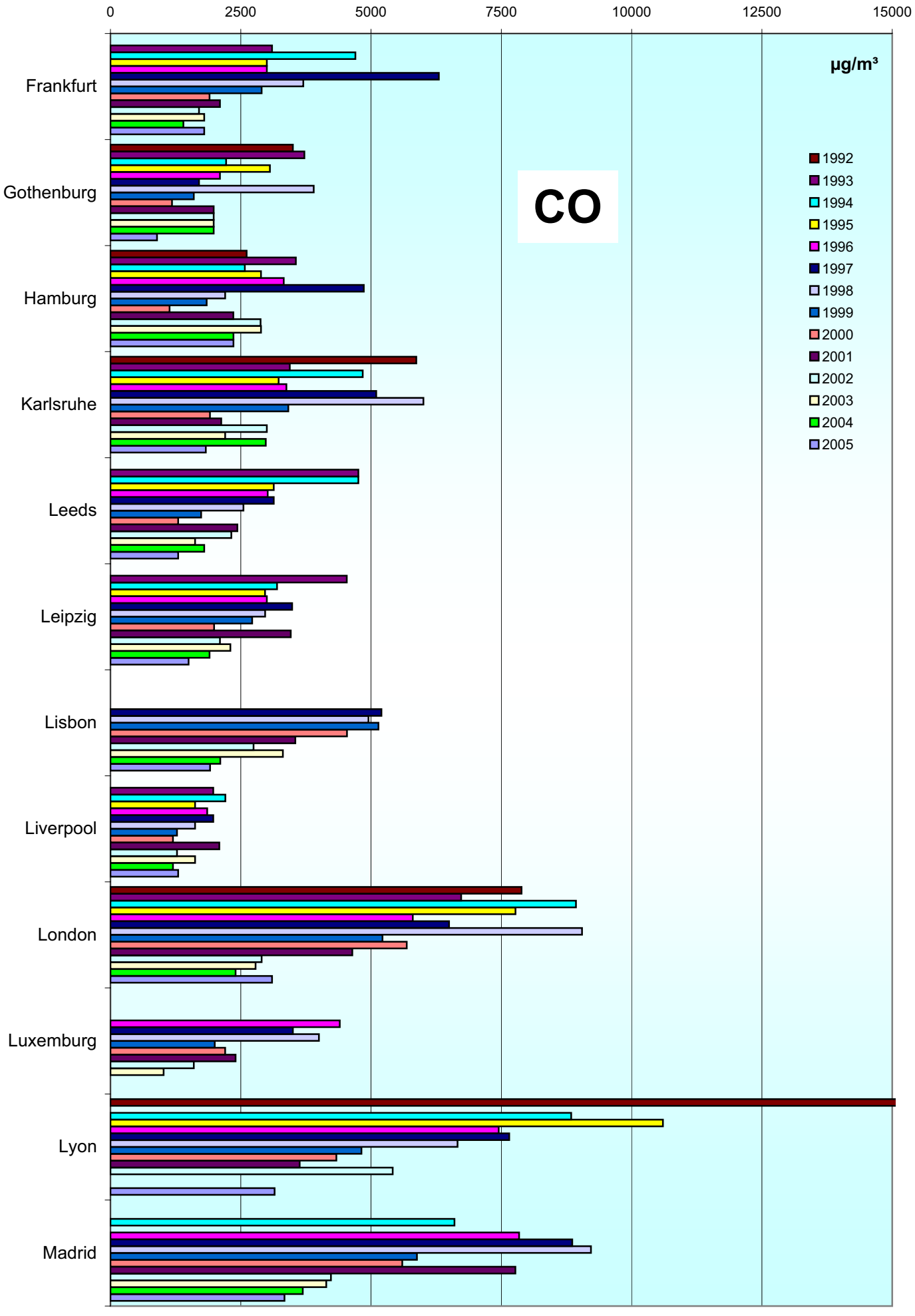
Comparison of The Air Quality 1992 - 2005

max. daily mean values (peak-stressed monitoring station)



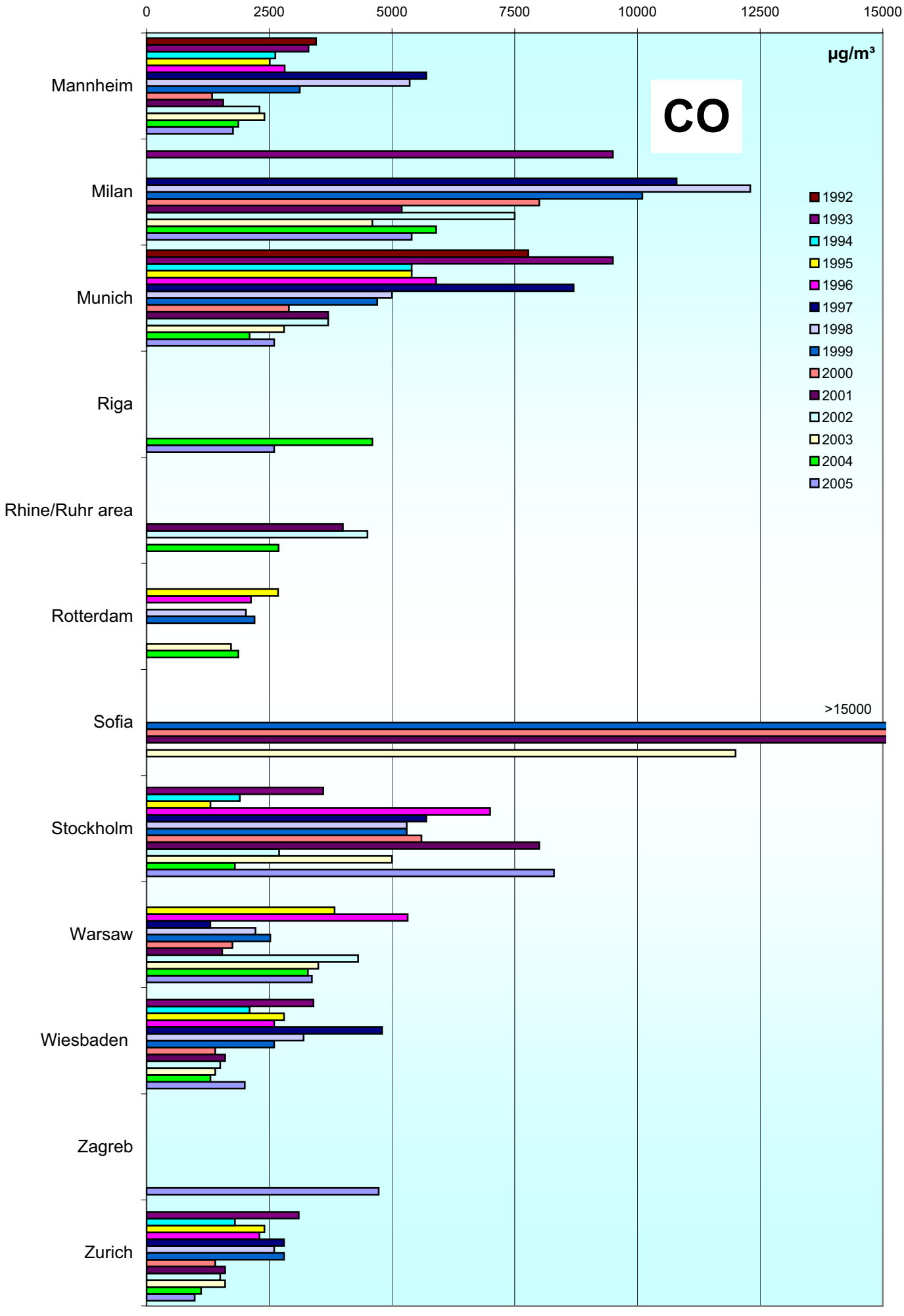
Comparison of The Air Quality 1992 - 2005

max. daily mean values (peak-stressed monitoring station)



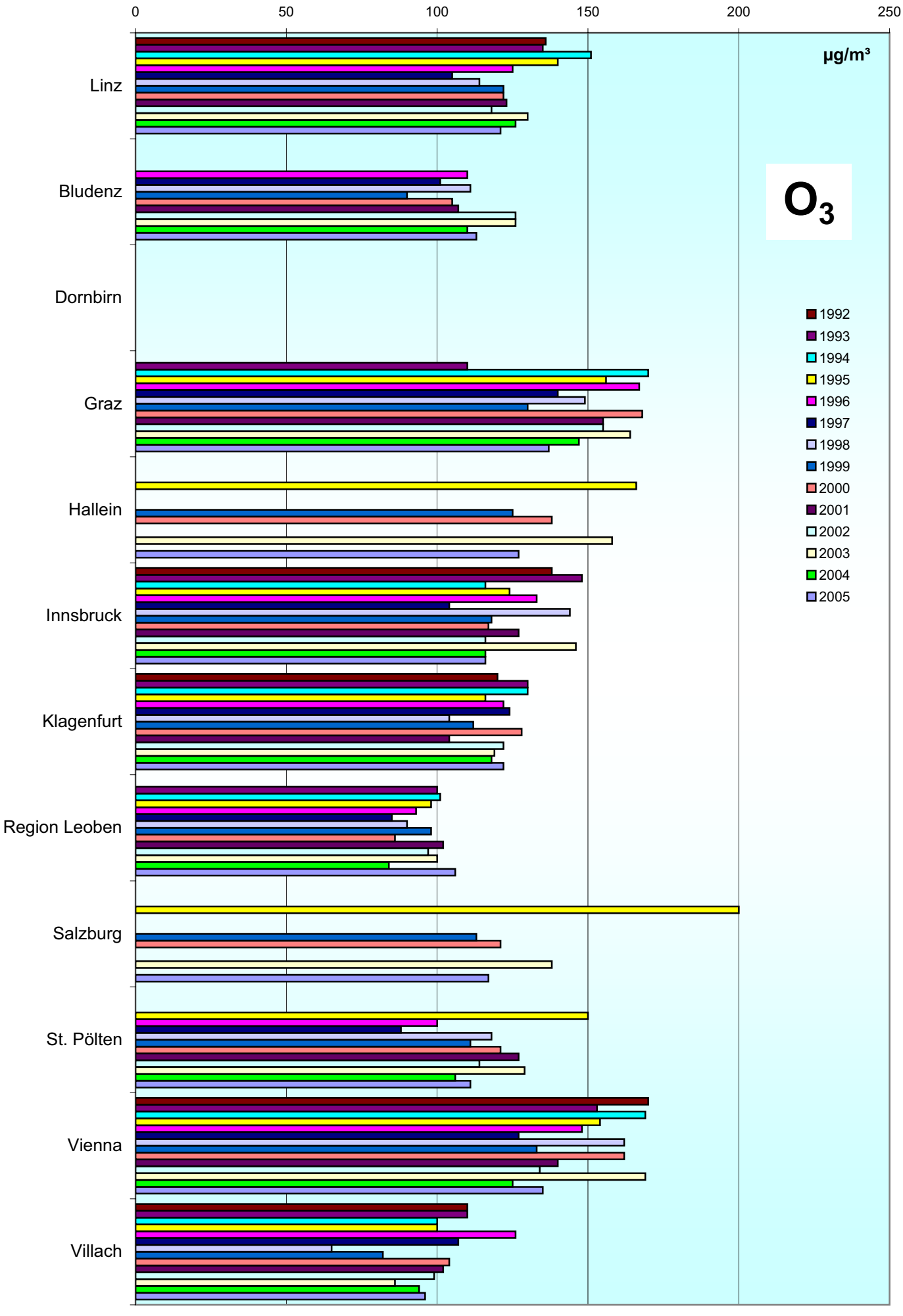
Comparison of The Air Quality 1992 - 2005

max. daily mean values (peak-stressed monitoring station)



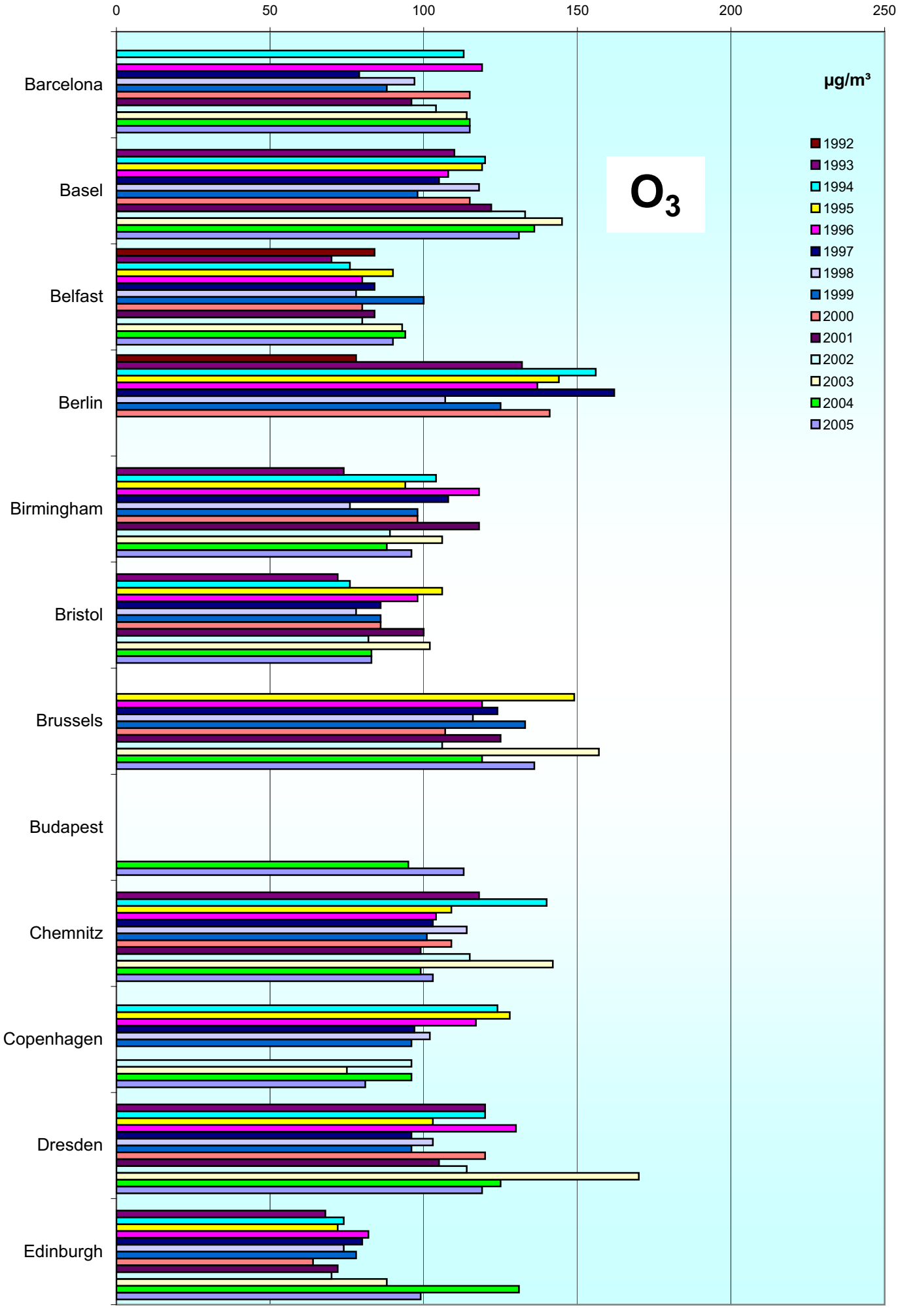
Comparison of The Air Quality 1992 - 2005

max. daily mean values (peak-stressed monitoring station)



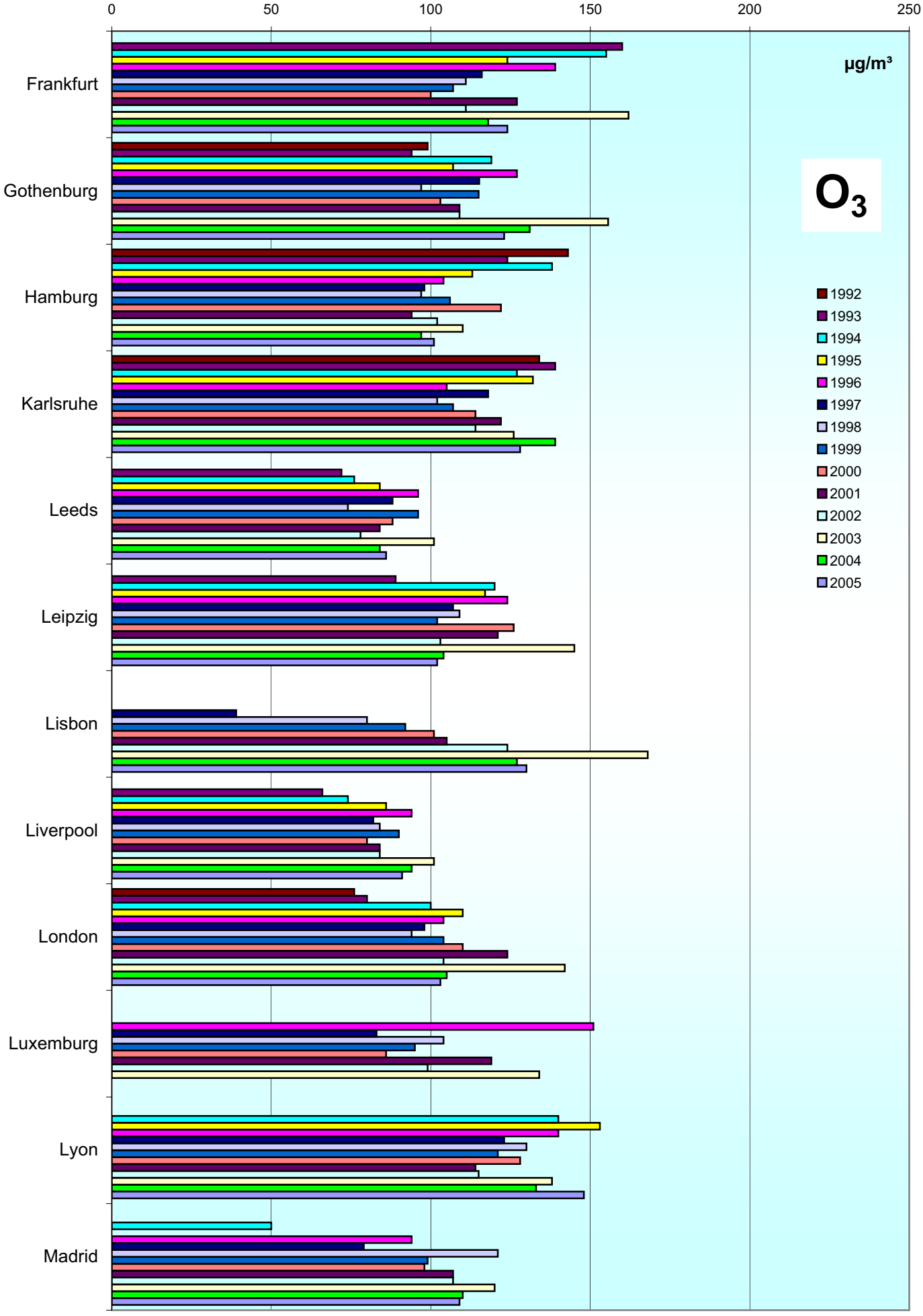
Comparison of The Air Quality 1992 - 2005

max. daily mean values (peak-stressed monitoring station)



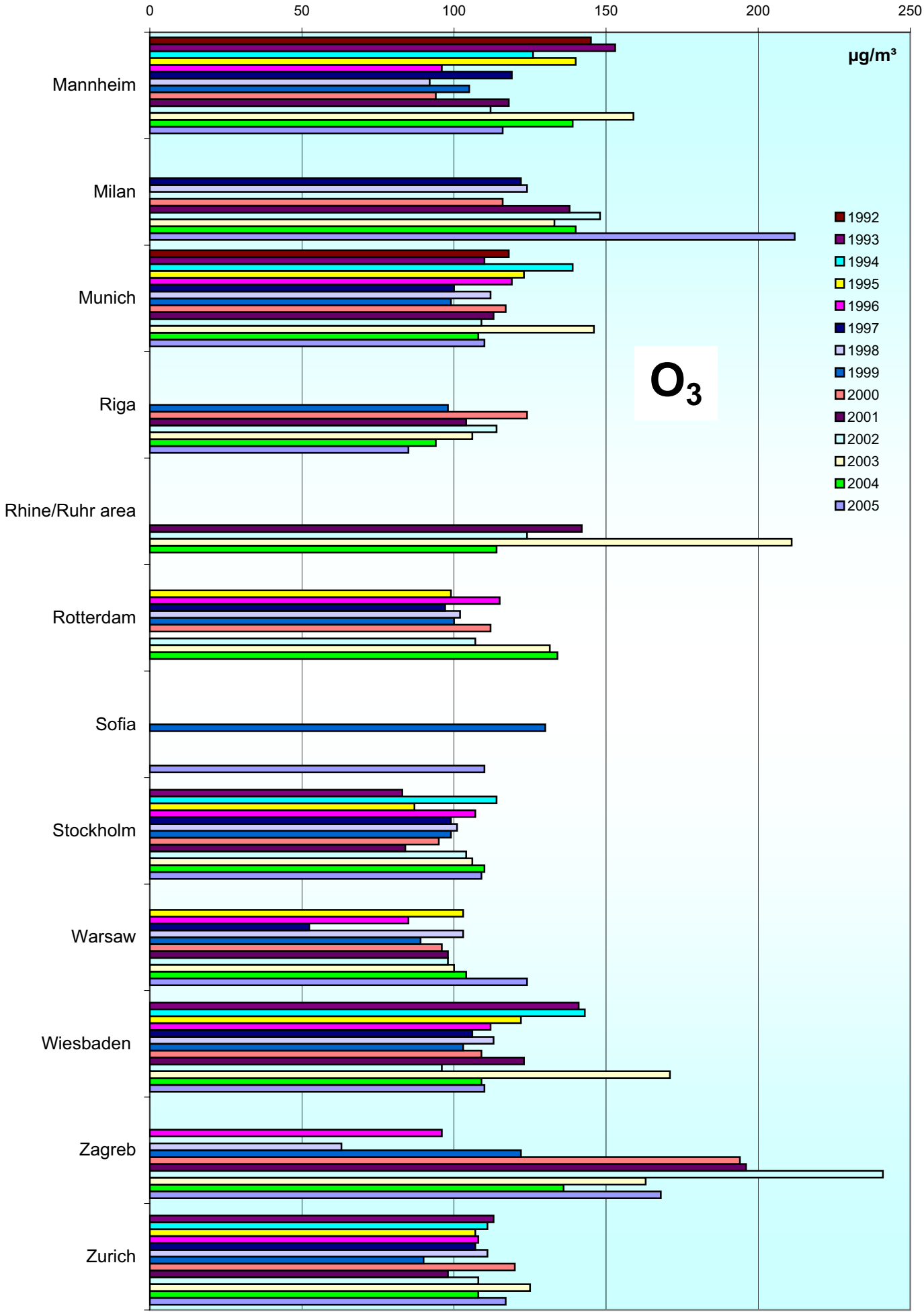
Comparison of The Air Quality 1992 - 2005

max. daily mean values (peak-stressed monitoring station)



Comparison of The Air Quality 1992 - 2005

max. daily mean values (peak-stressed monitoring station)



Jahresvergleich

1992 - 2005

max. 98-Percentile

Comparison of The Air Quality Over The Years

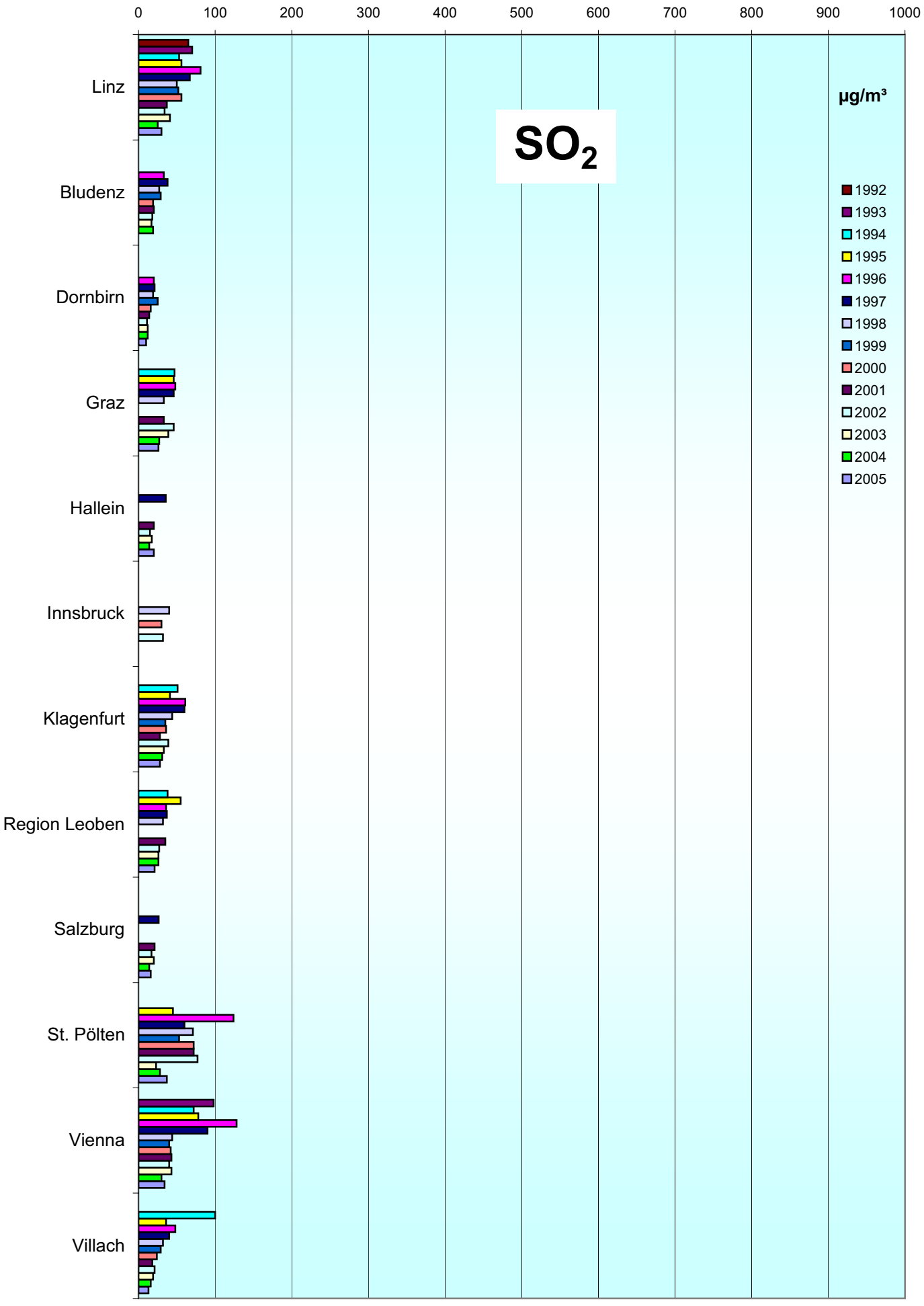
1992 - 2005

Max. 98-Percentiles

Comparison of The Air Quality 1992 - 2005

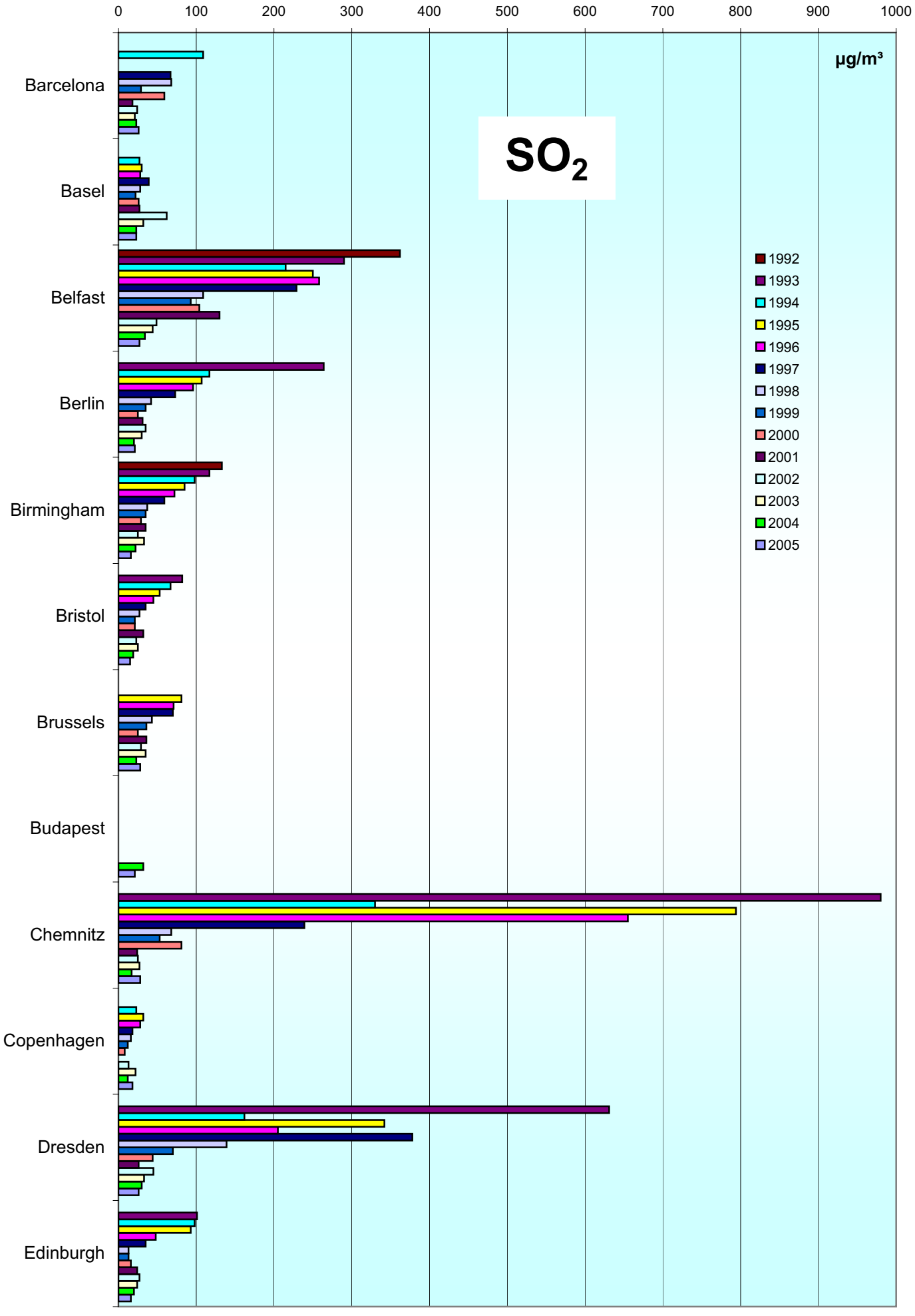
134

max. 98 percentile(peak-stressed monitoring station)



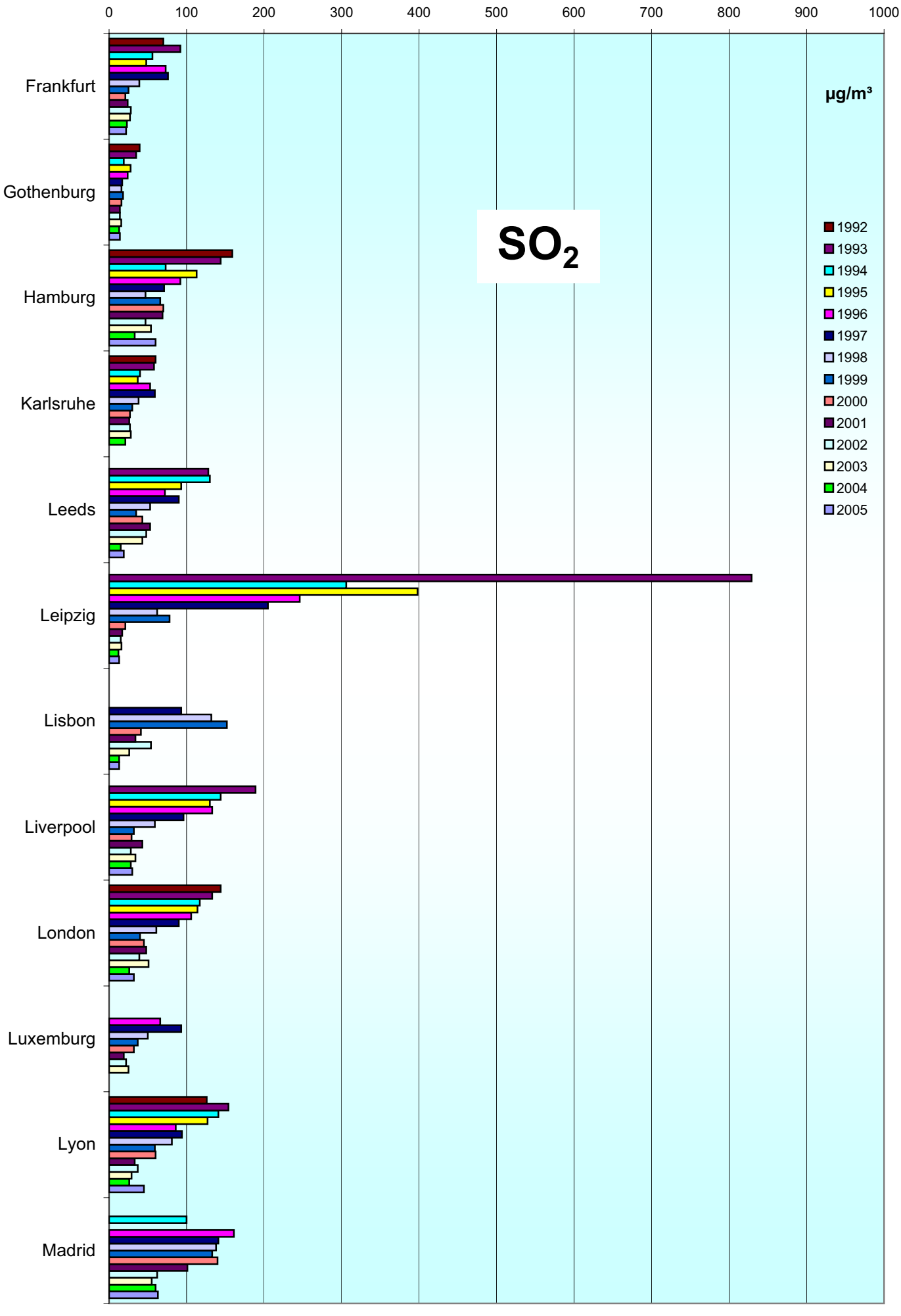
Comparison of The Air Quality 1992 - 2005

max. 98 percentile(peak-stressed monitoring station)



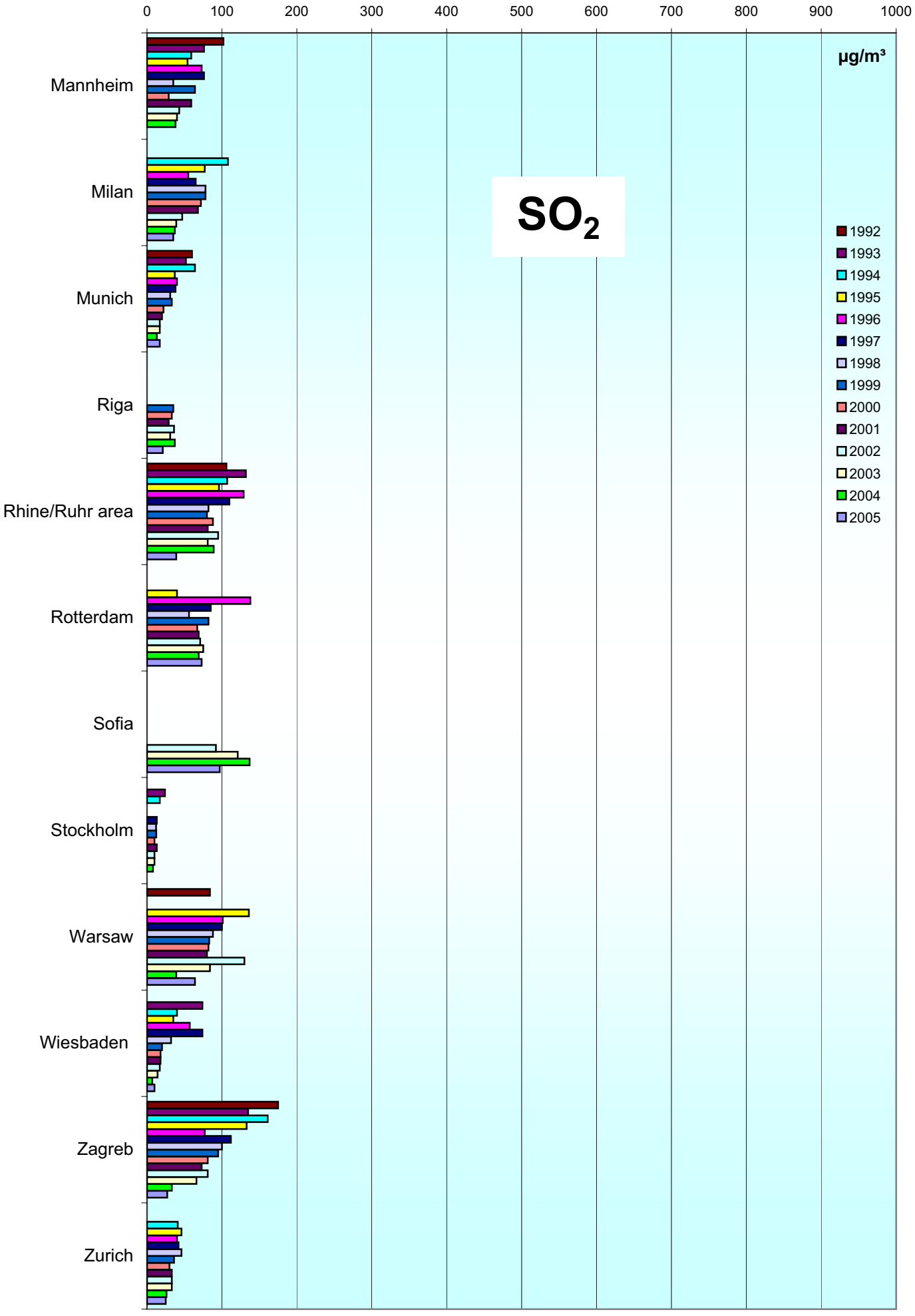
Comparison of The Air Quality 1992 - 2005

max. 98 percentile (peak-stressed monitoring station)



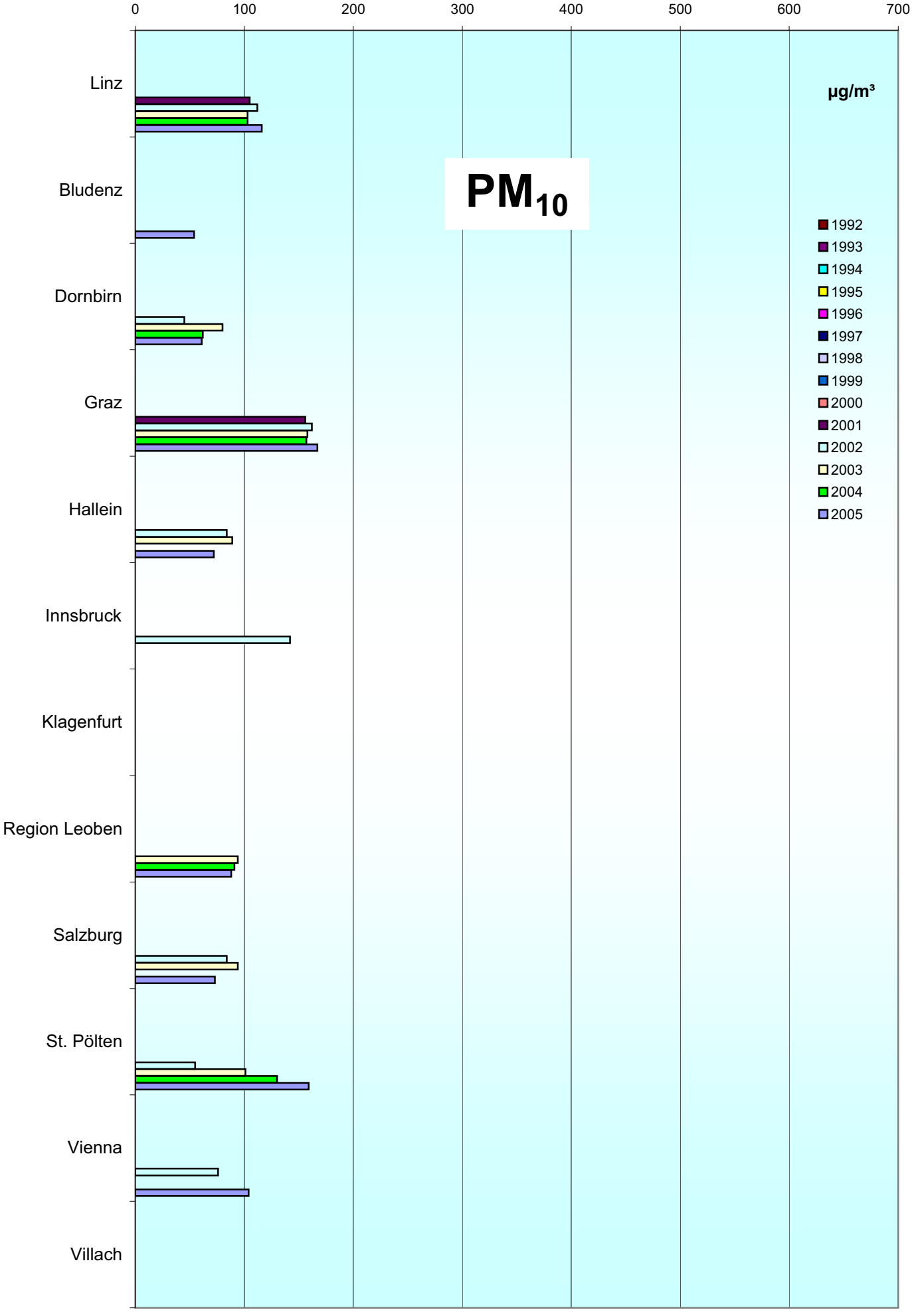
Comparison of The Air Quality 1992 - 2005

max. 98 percentile (peak-stressed monitoring station)



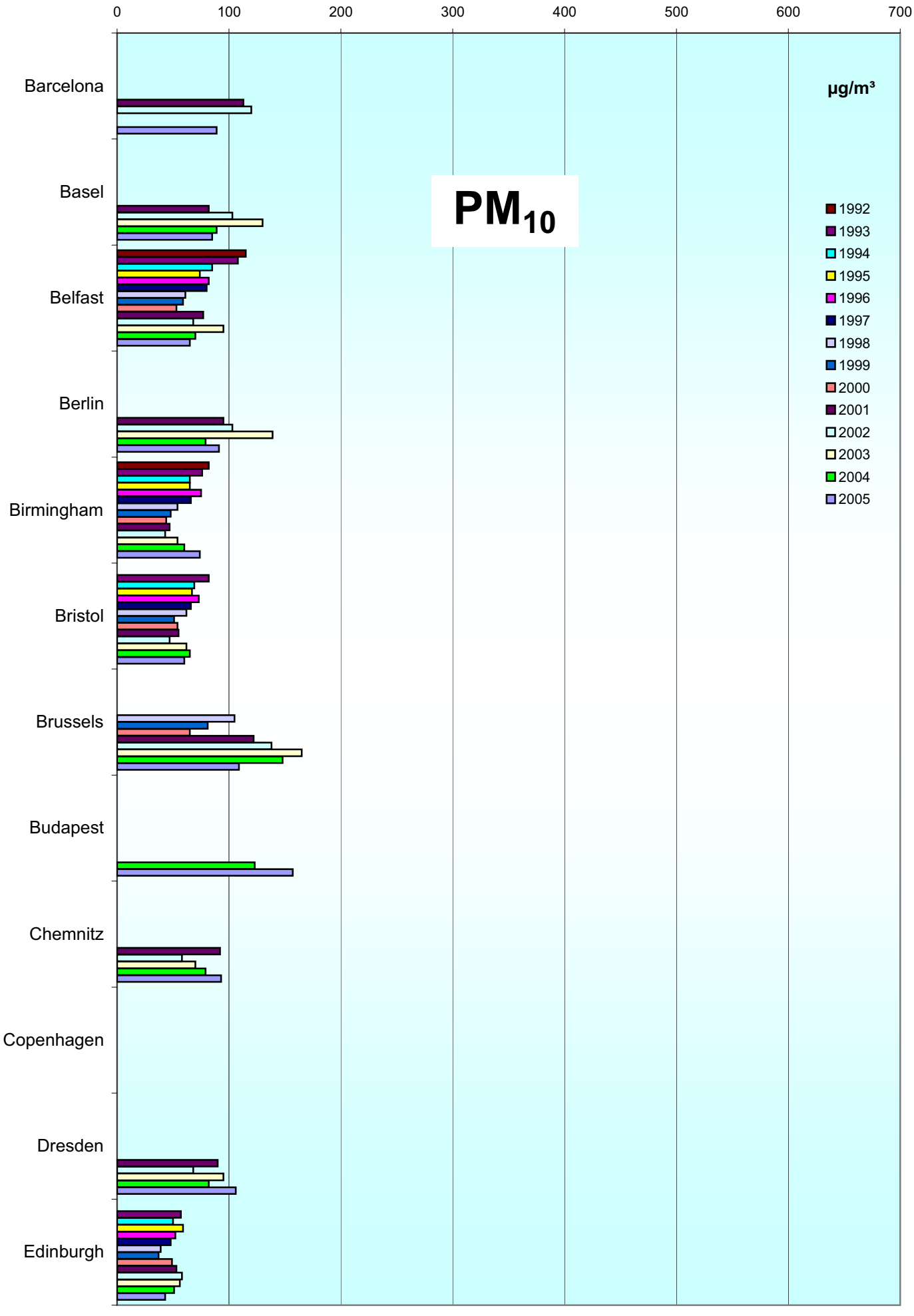
Comparison of The Air Quality 1992 - 2005

max. 98 percentile (peak-stressed monitoring station)



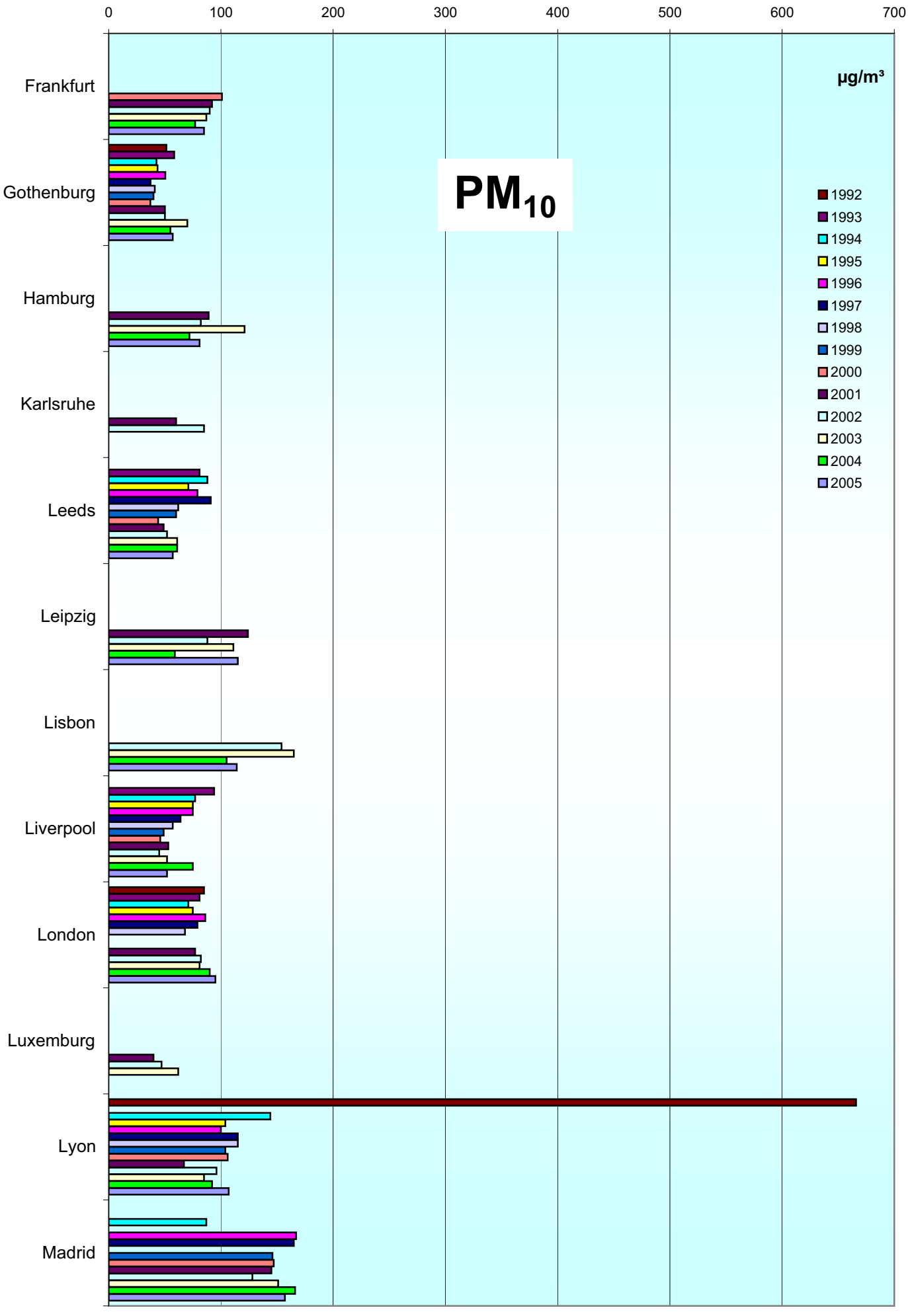
Comparison of The Air Quality 1992 - 2005

max. 98 percentile (peak-stressed monitoring station)



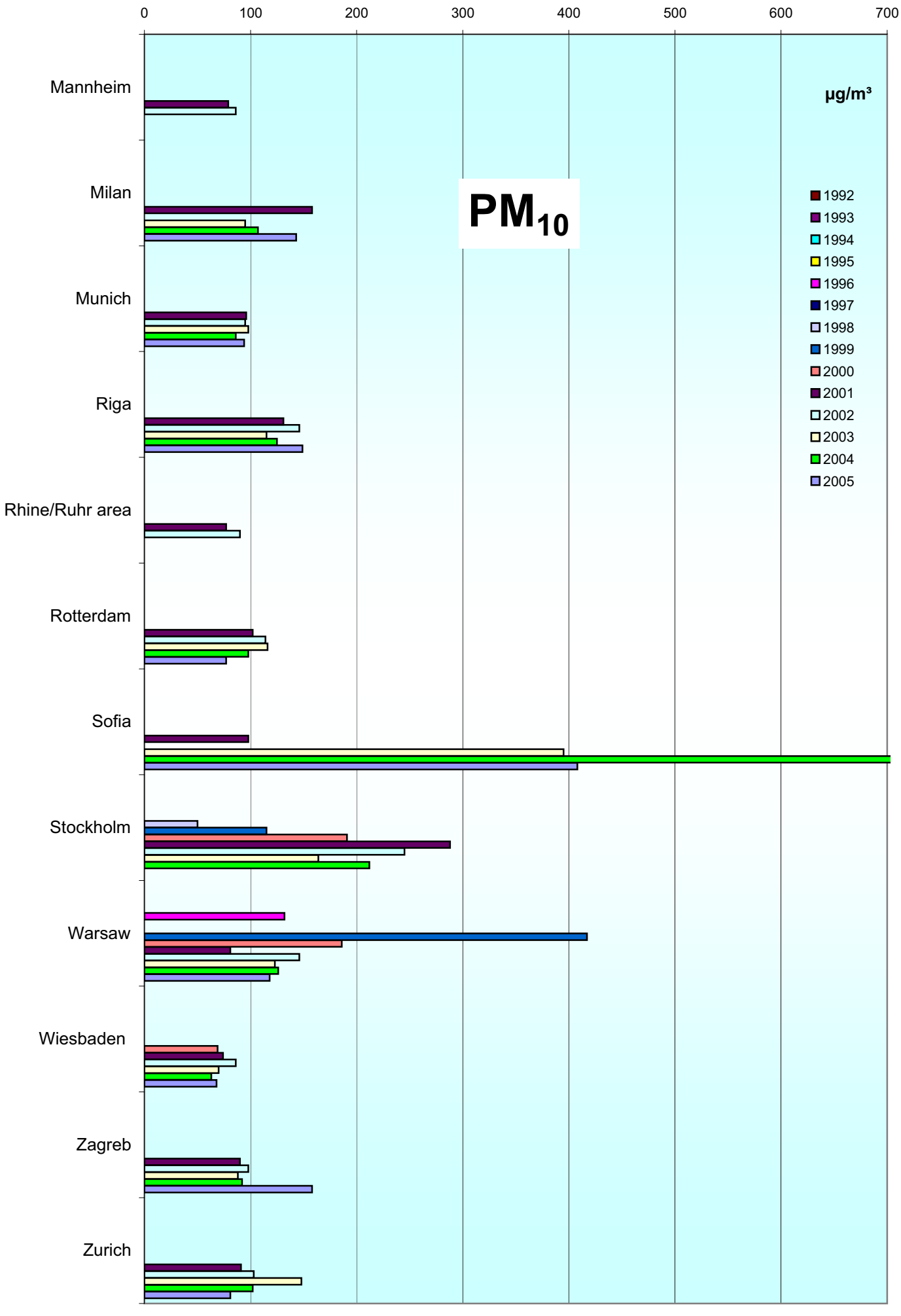
Comparison of The Air Quality 1992 - 2005

max. 98 percentile (peak-stressed monitoring station)



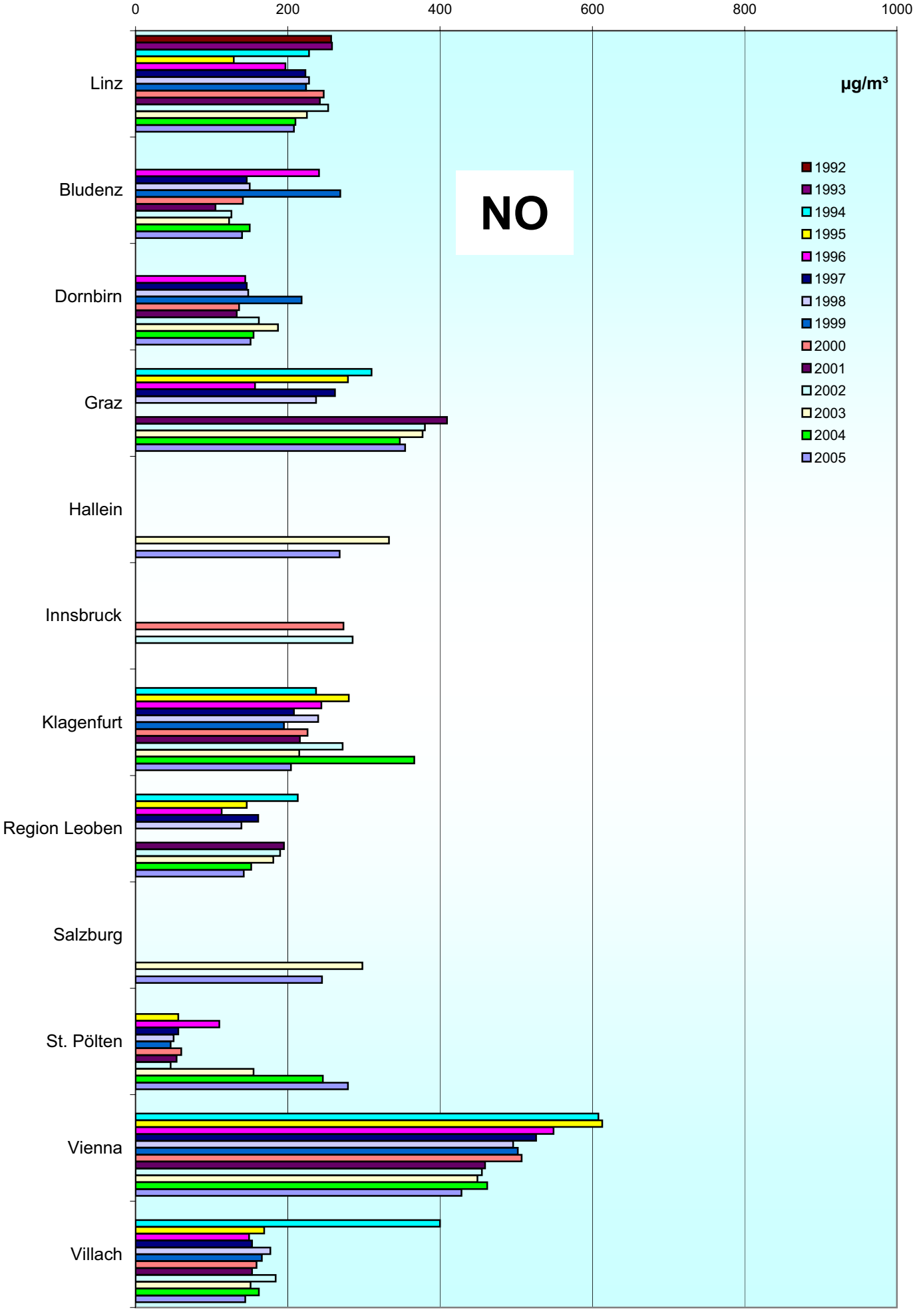
Comparison of The Air Quality 1992 - 2005

max. 98 percentile (peak-stressed monitoring station)



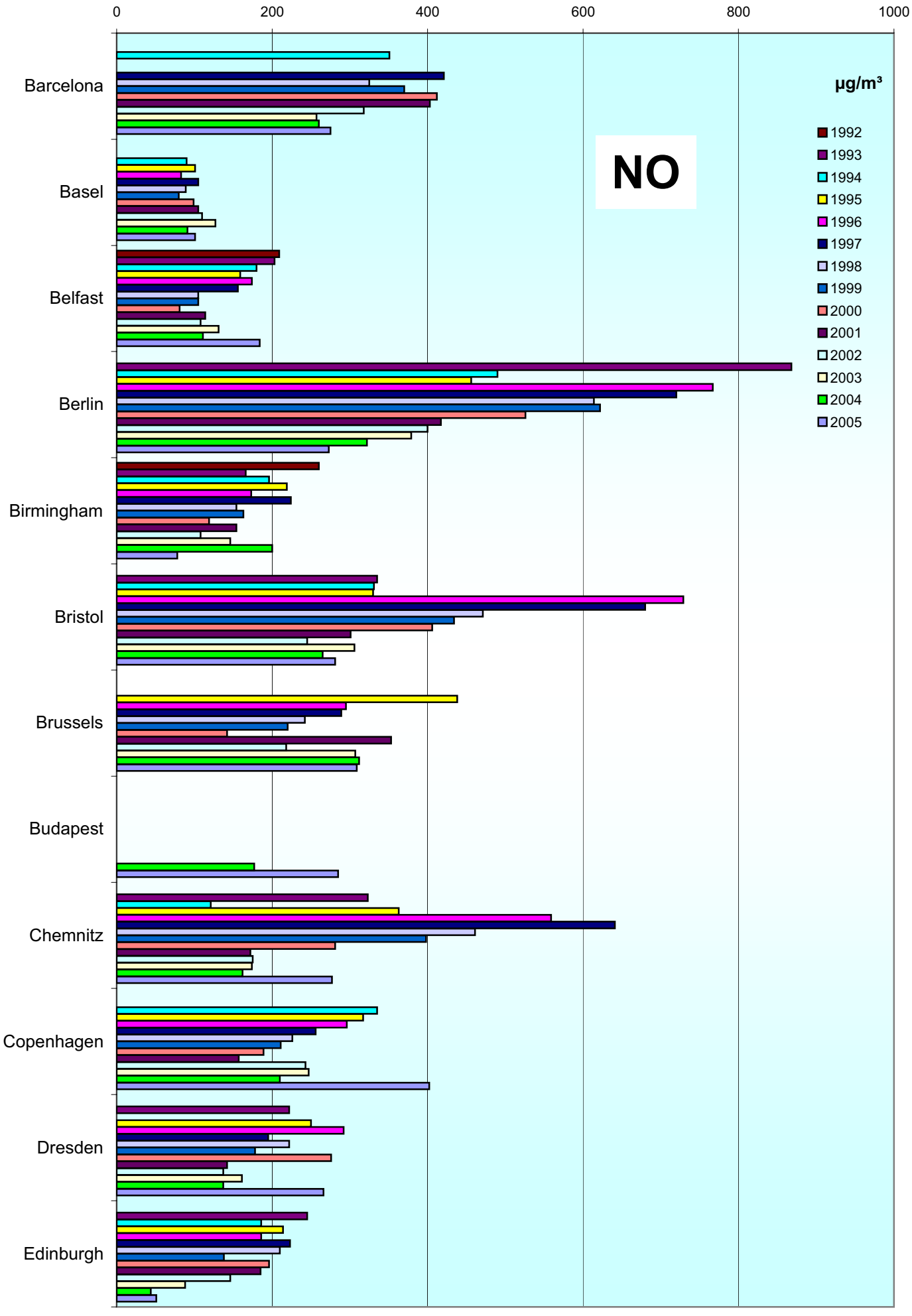
Comparison of The Air Quality 1992 - 2005

max. 98 percentile (peak-stressed monitoring station)



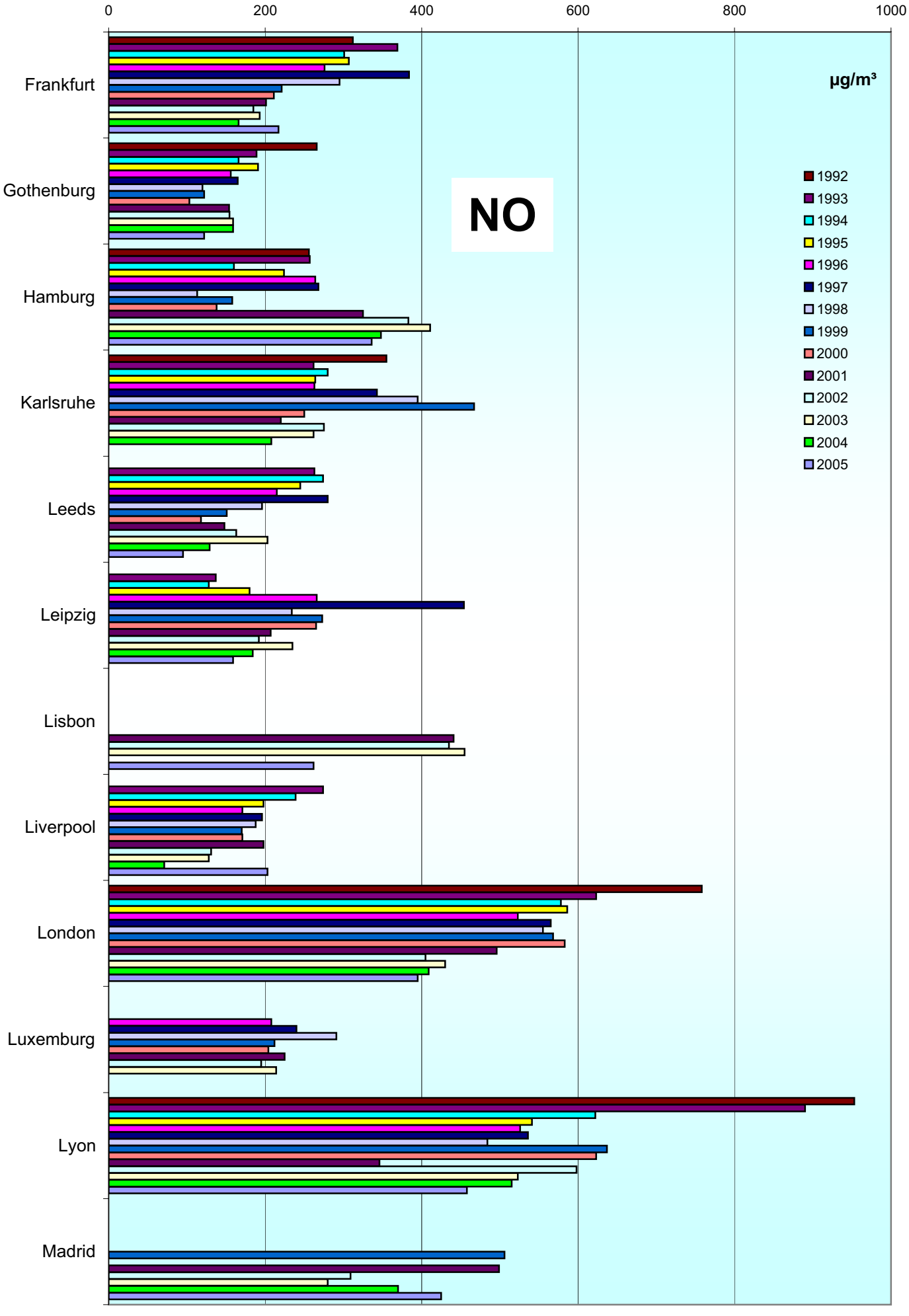
Comparison of The Air Quality 1992 - 2005

max. 98 percentile (peak-stressed monitoring station)



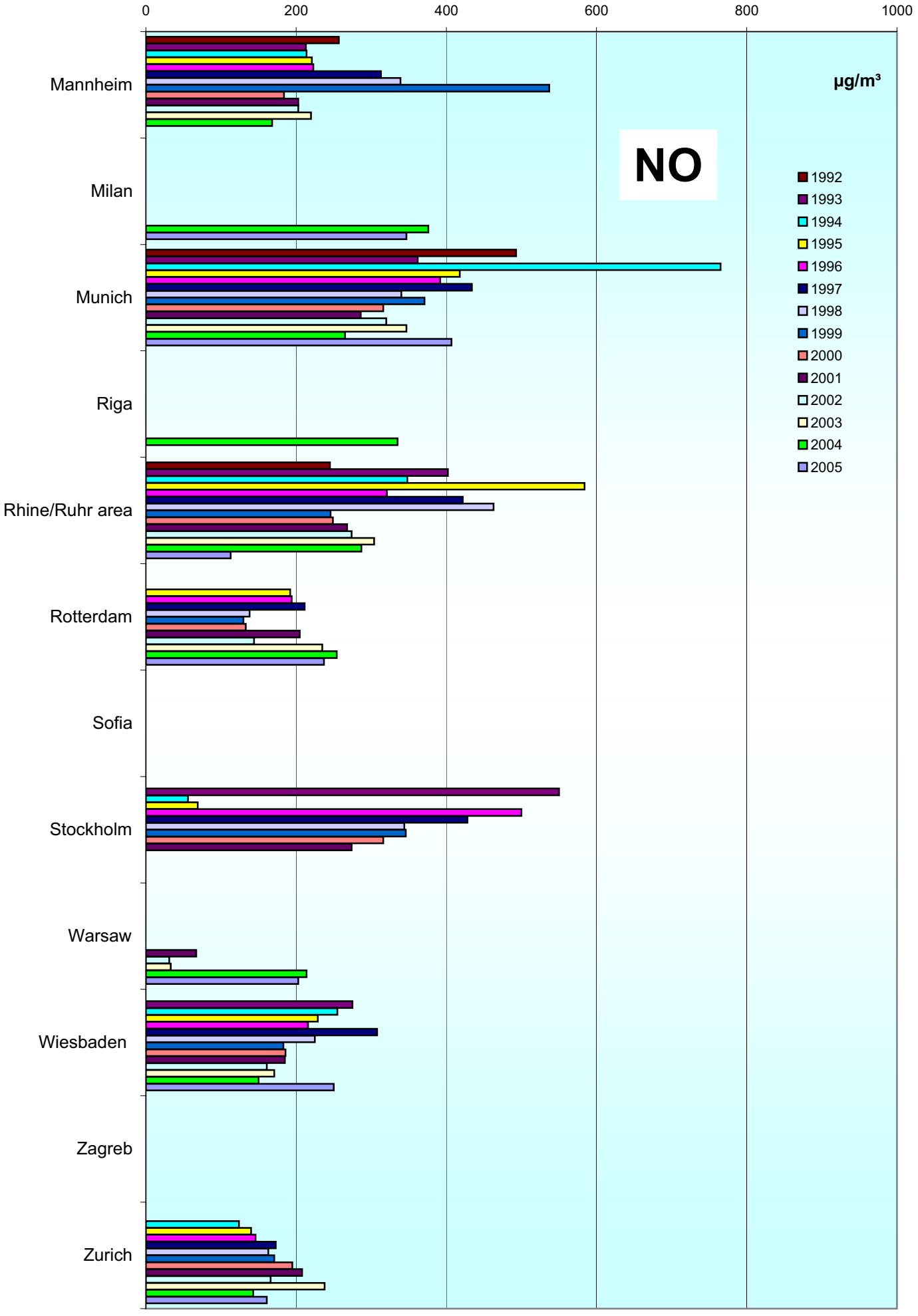
Comparison of The Air Quality 1992 - 2005

max. 98 percentile (peak-stressed monitoring station)



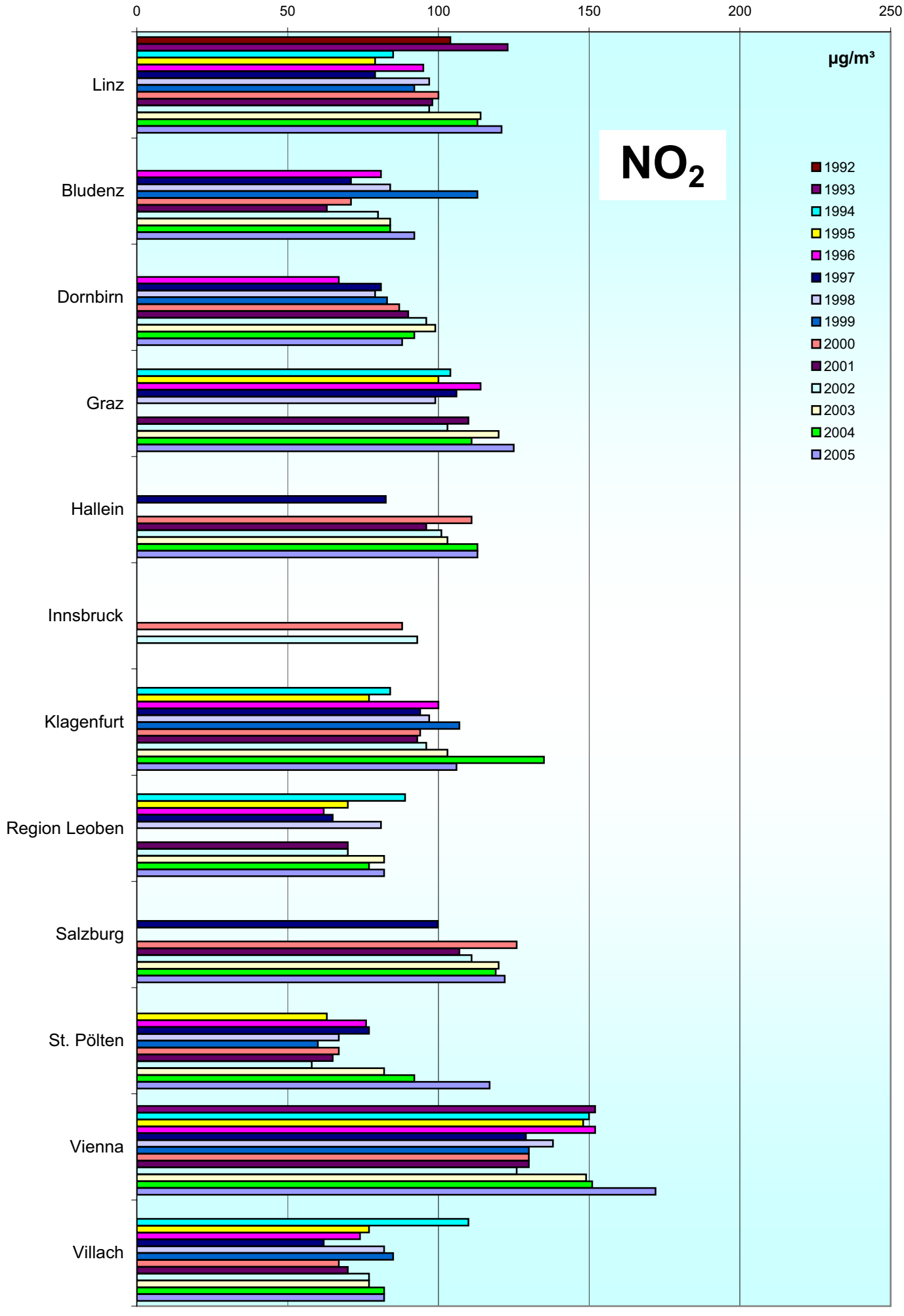
Comparison of The Air Quality 1992 - 2005

max. 98 percentile (peak-stressed monitoring station)



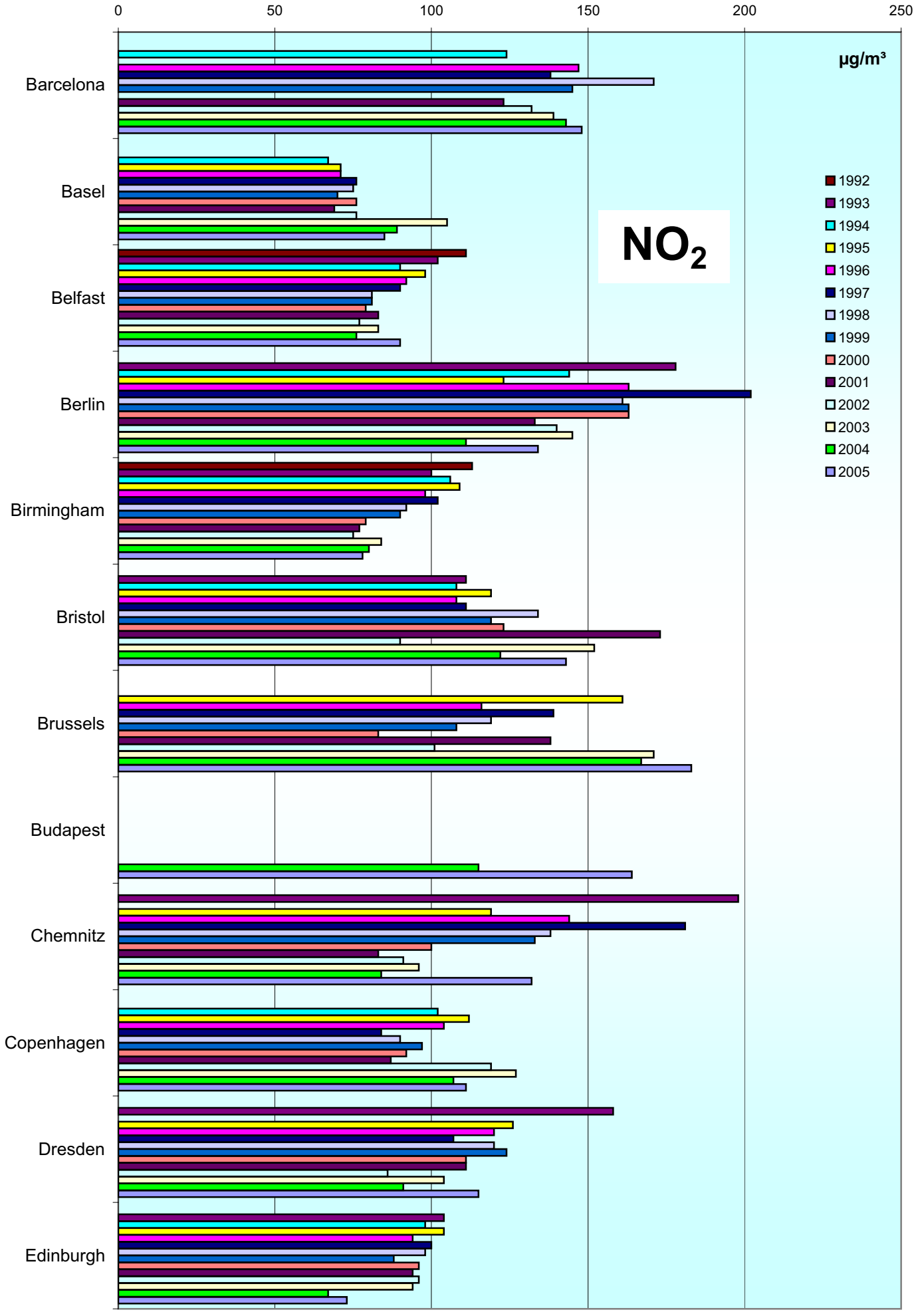
Comparison of The Air Quality 1992 - 2005

max. 98 percentile (peak-stressed monitoring station)



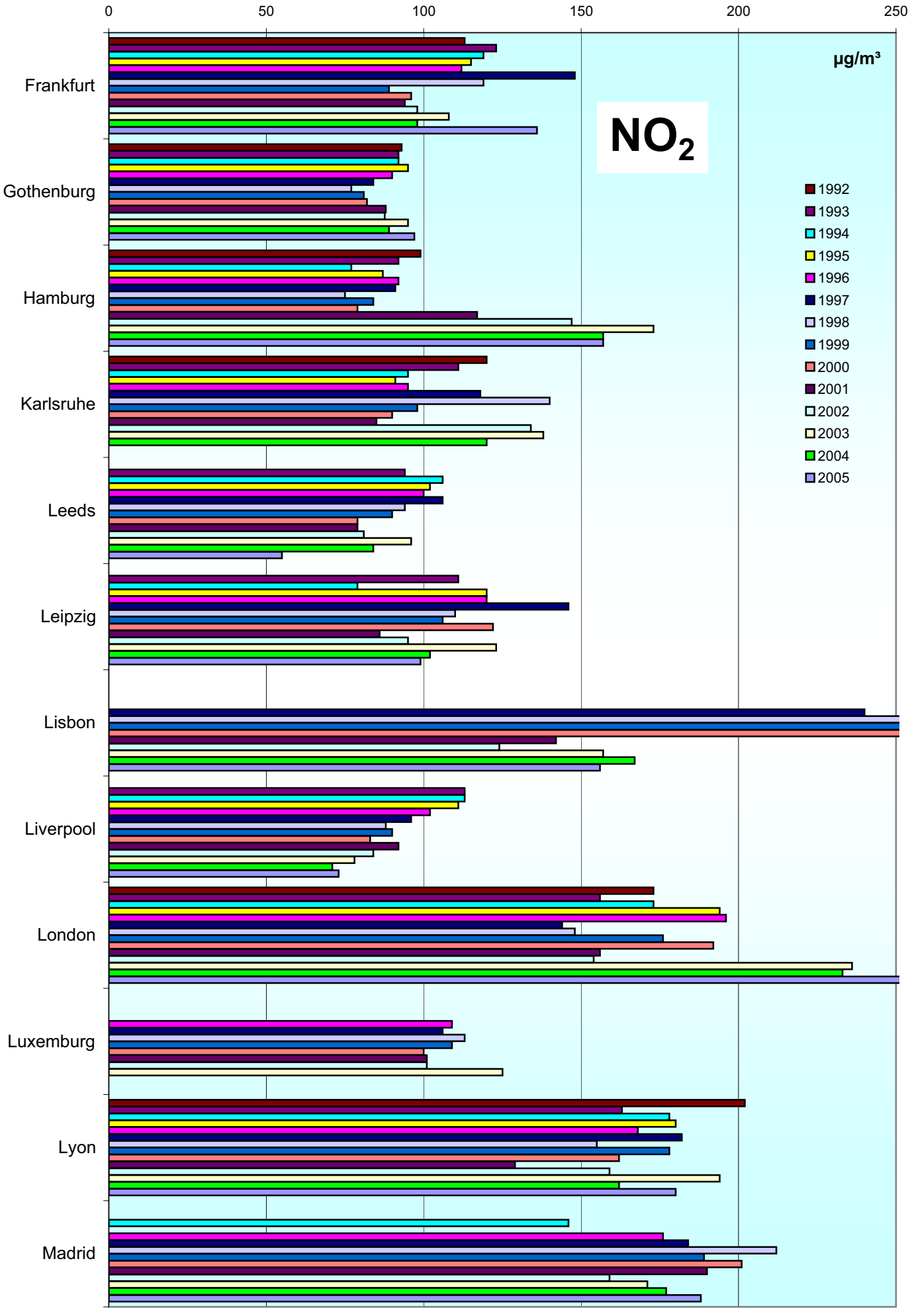
Comparison of The Air Quality 1992 - 2005

max. 98 percentile (peak-stressed monitoring station)



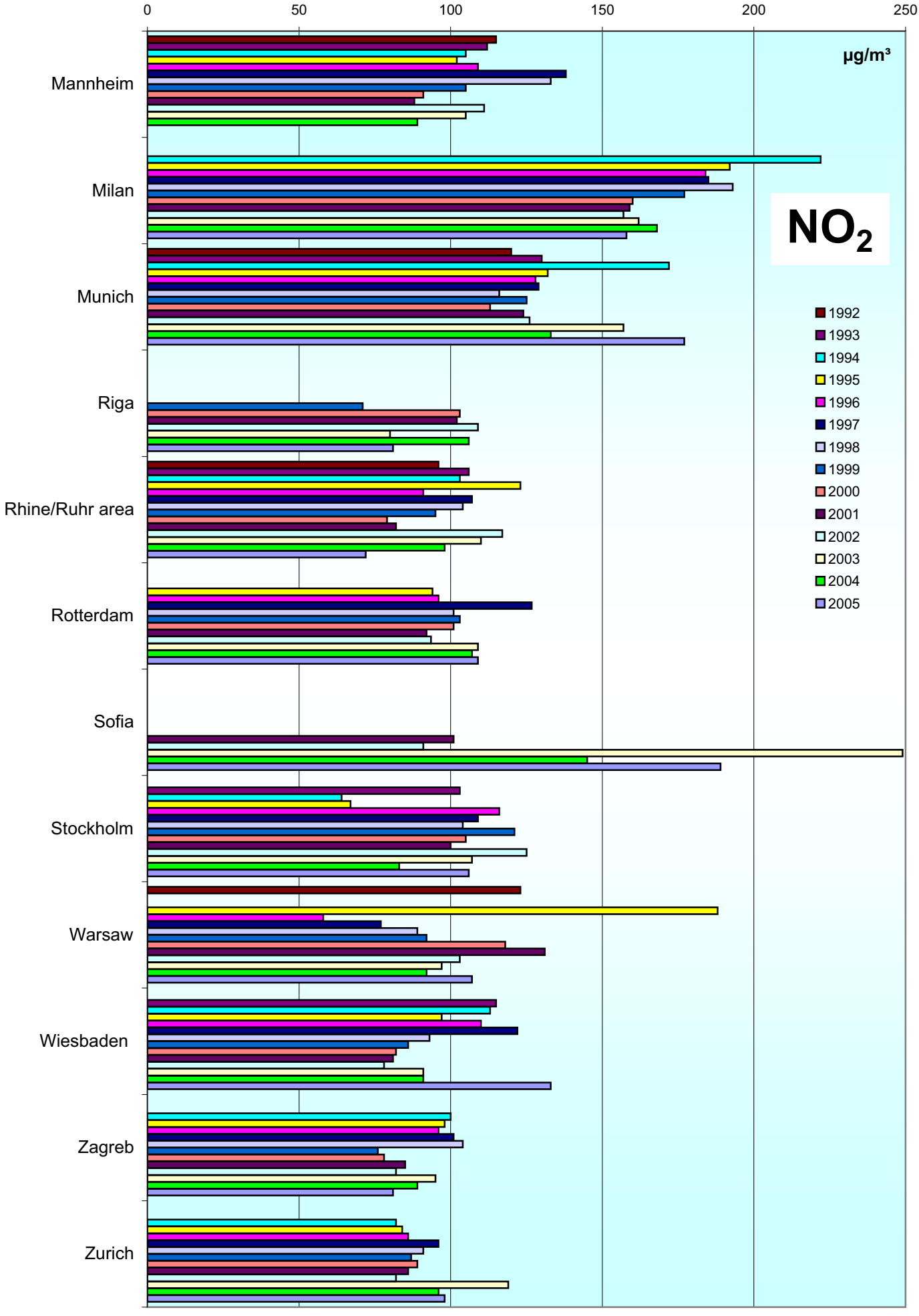
Comparison of The Air Quality 1992 - 2005

max. 98 percentile (peak-stressed monitoring station)



Comparison of The Air Quality 1992 - 2005

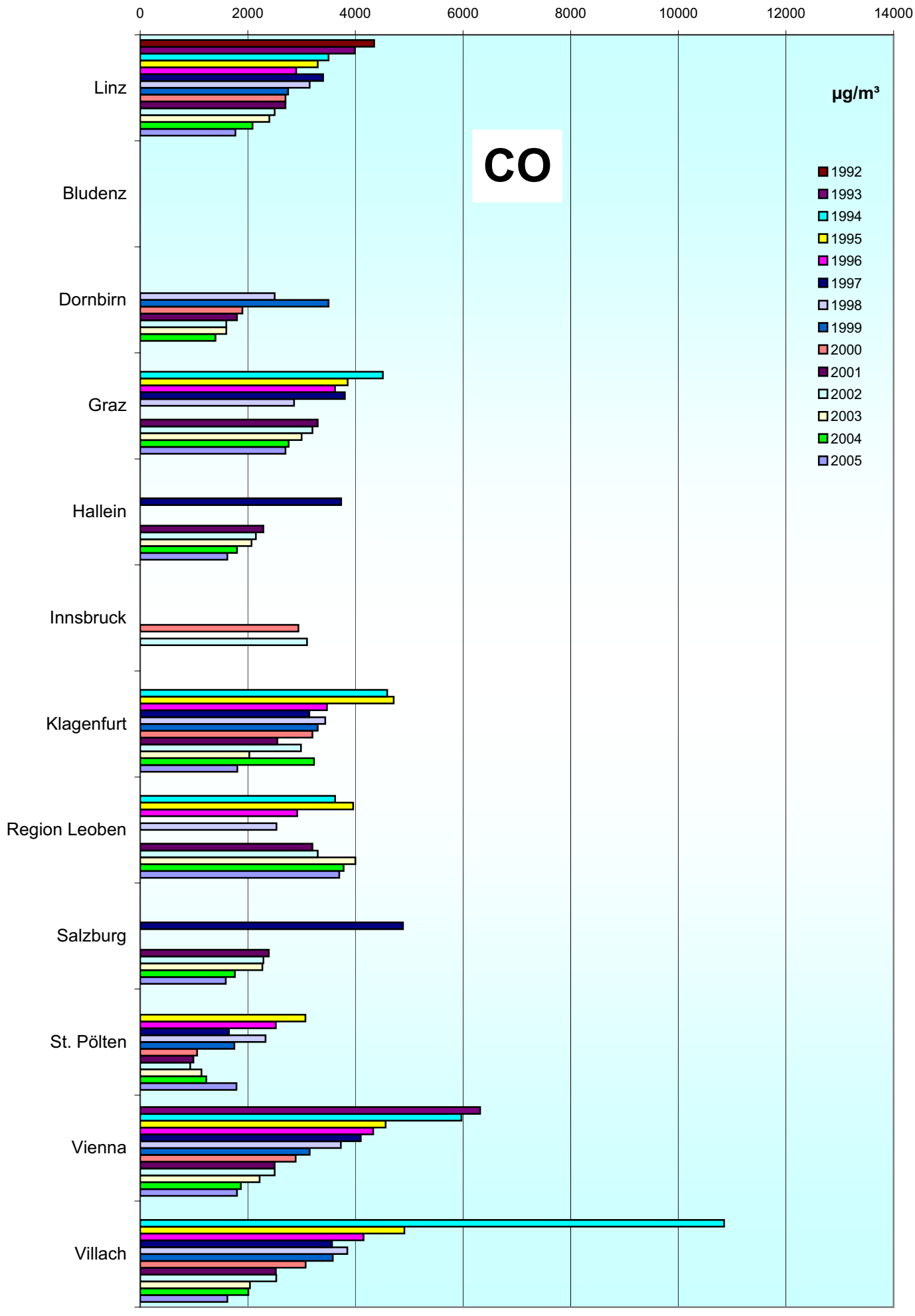
max. 98 percentile (peak-stressed monitoring station)



150

Comparison of The Air Quality 1992 - 2005

max. 98 percentile (peak-stressed monitoring station)



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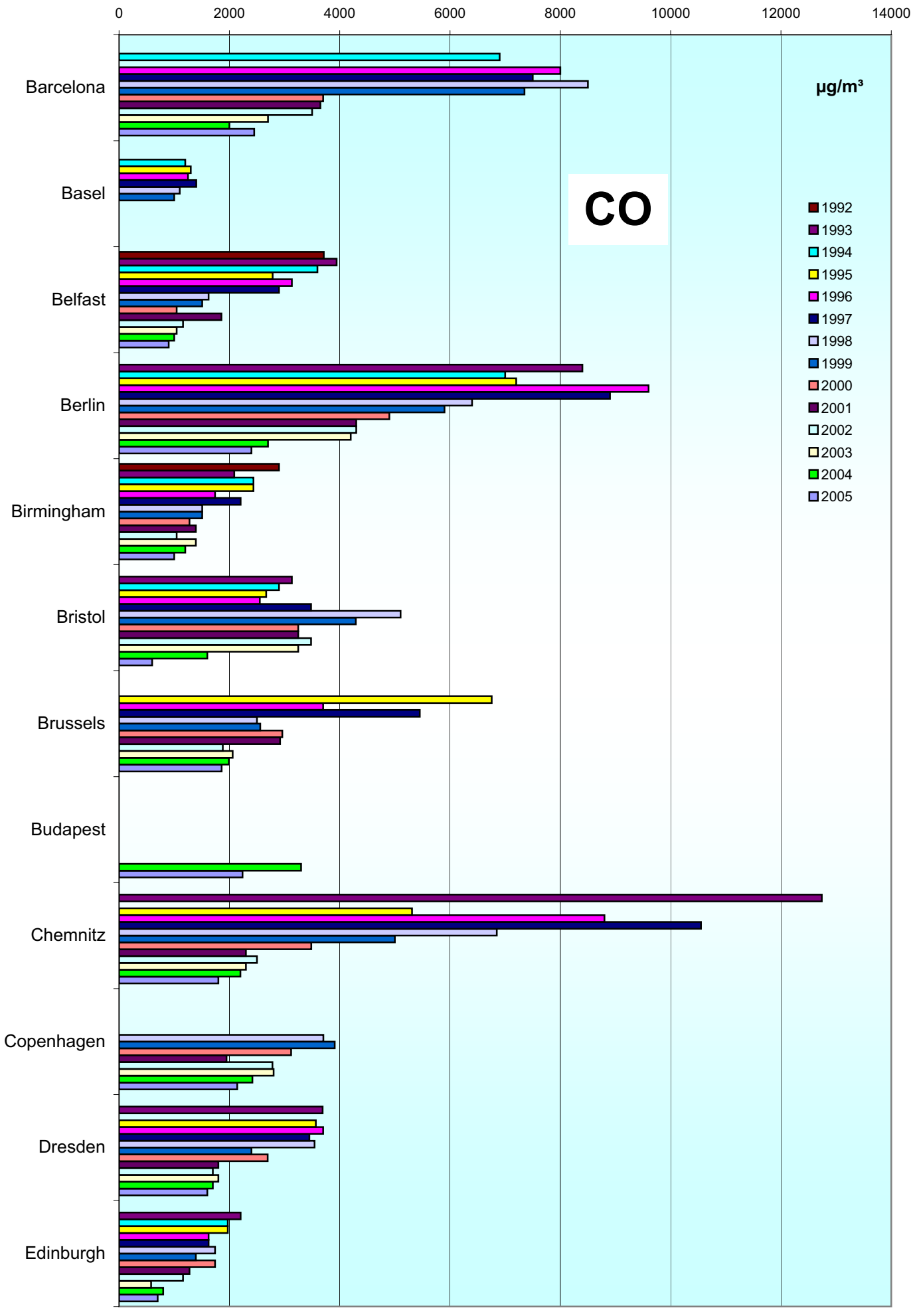
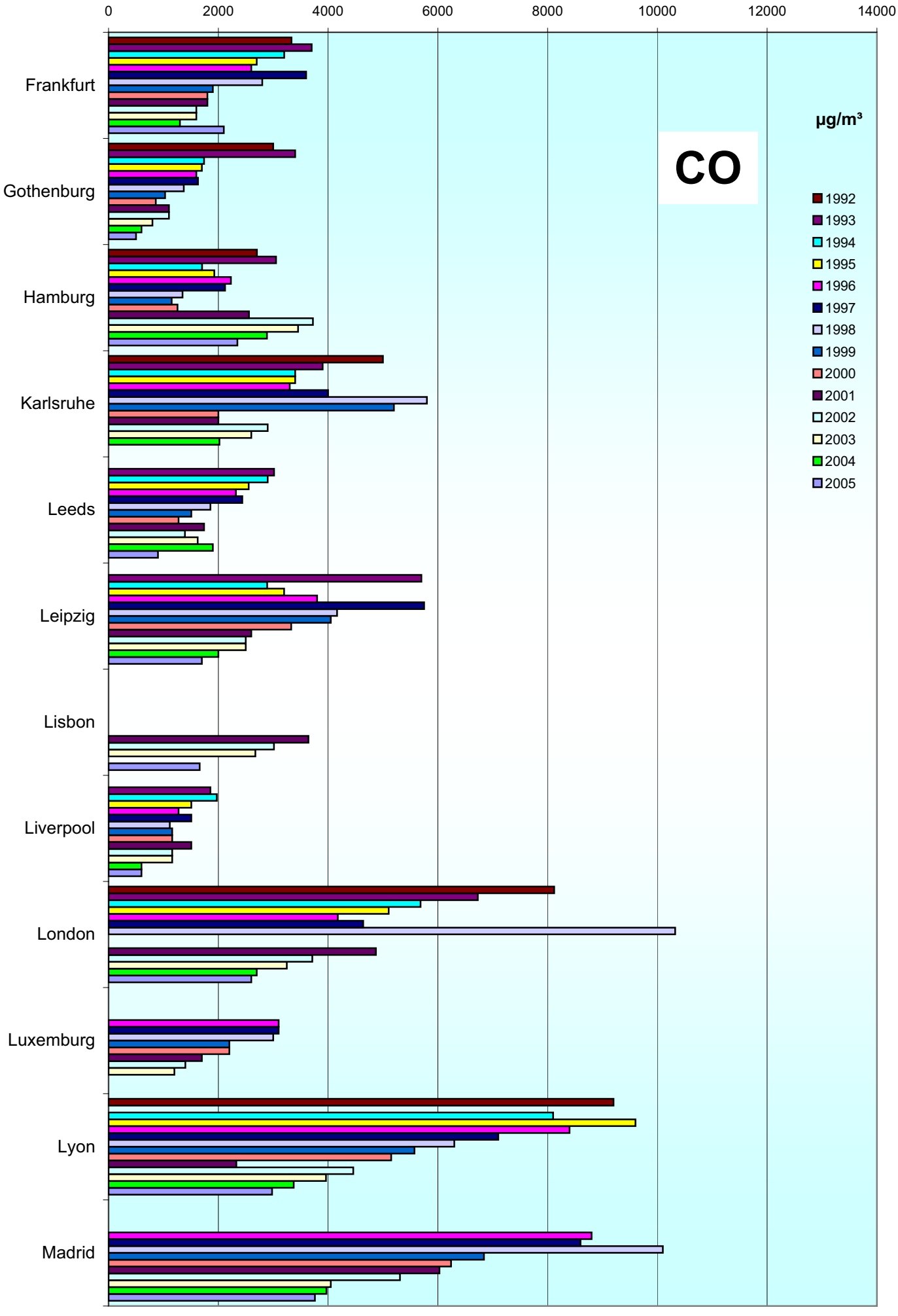
Comparison of The Air Quality 1992 - 2005

max. 98 percentile (peak-stressed monitoring station)



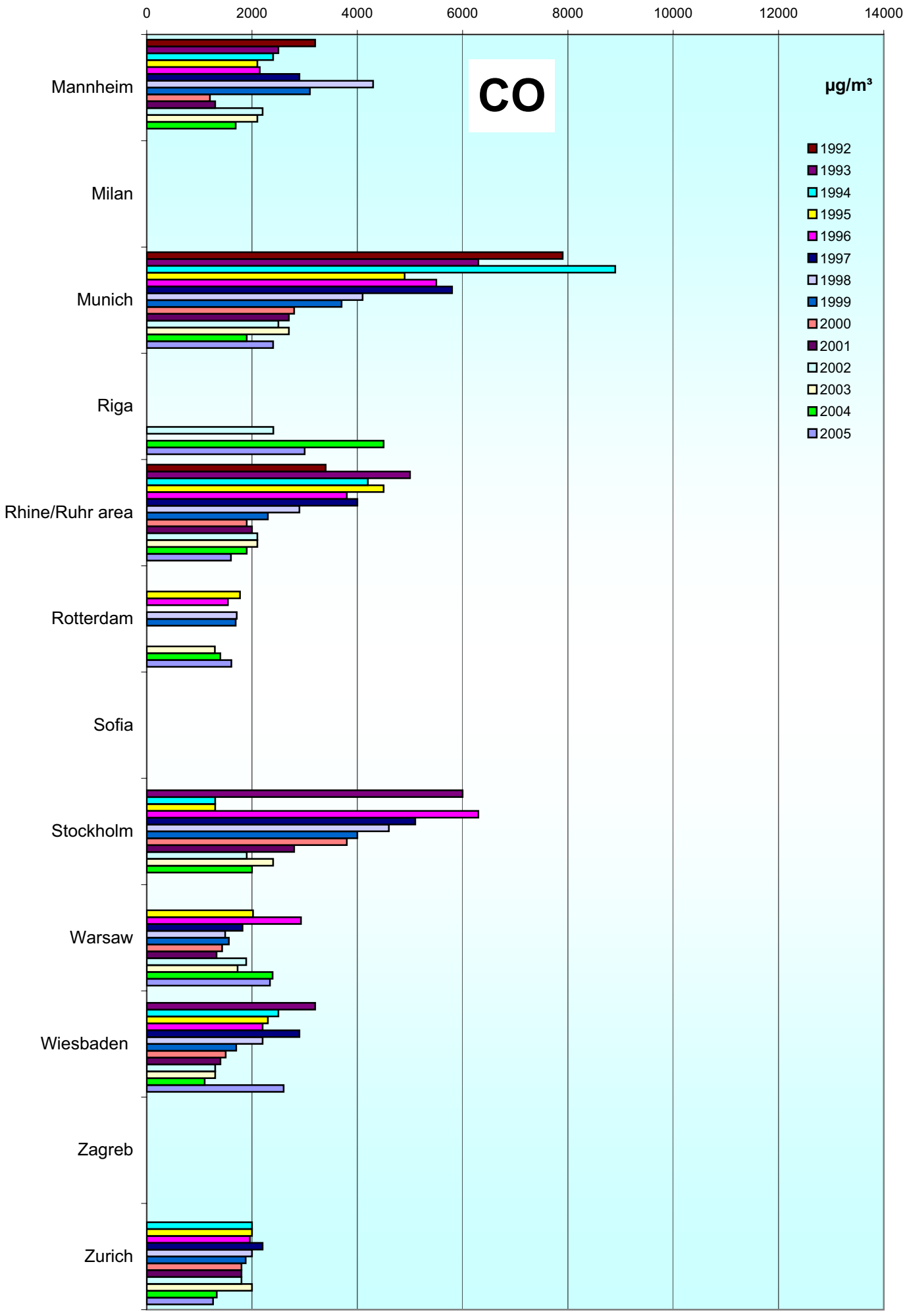
Comparison of The Air Quality 1992 - 2005

max. 98 percentile (peak-stressed monitoring station)



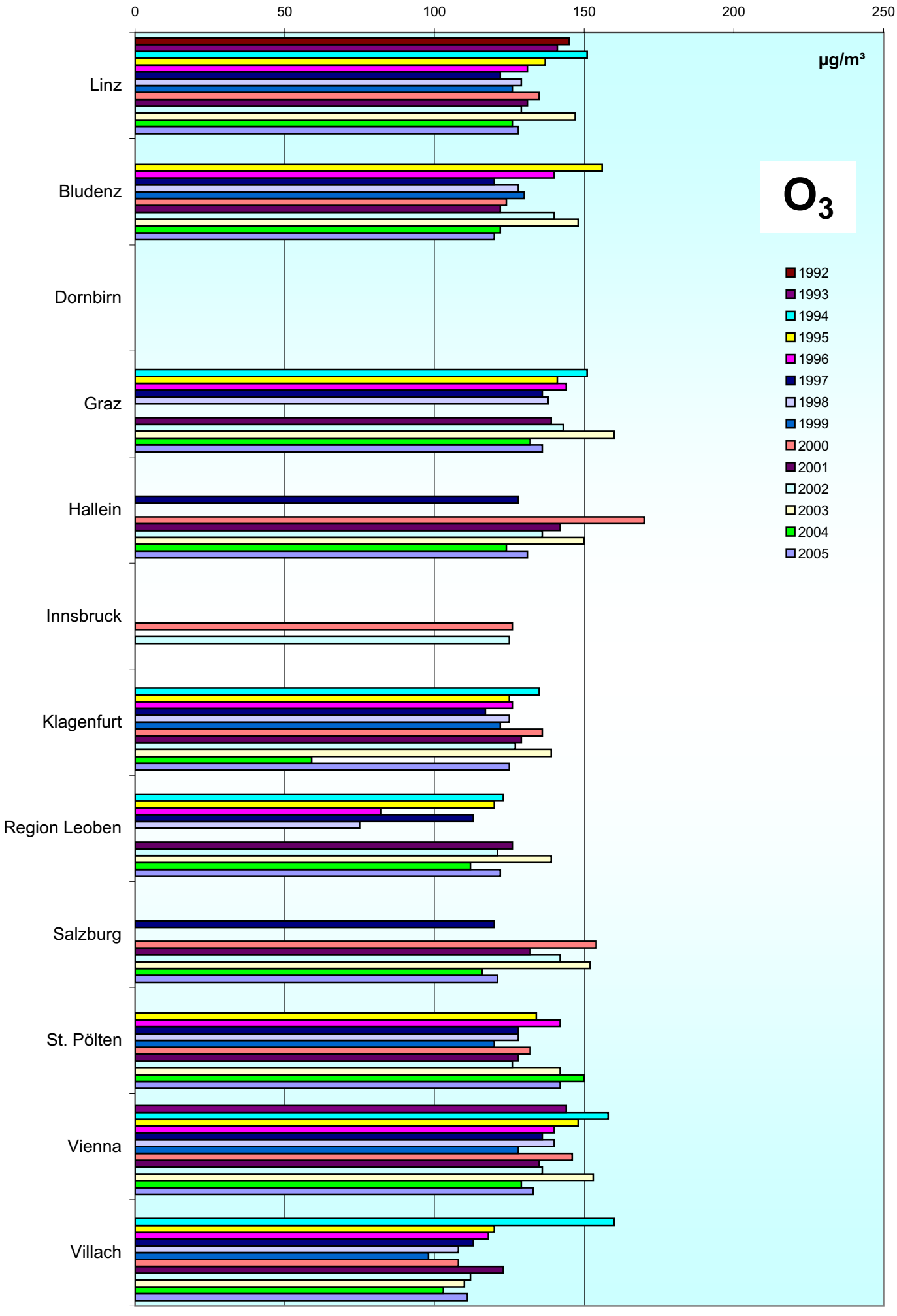
Comparison of The Air Quality 1992 - 2005

max. 98 percentile (peak-stressed monitoring station)



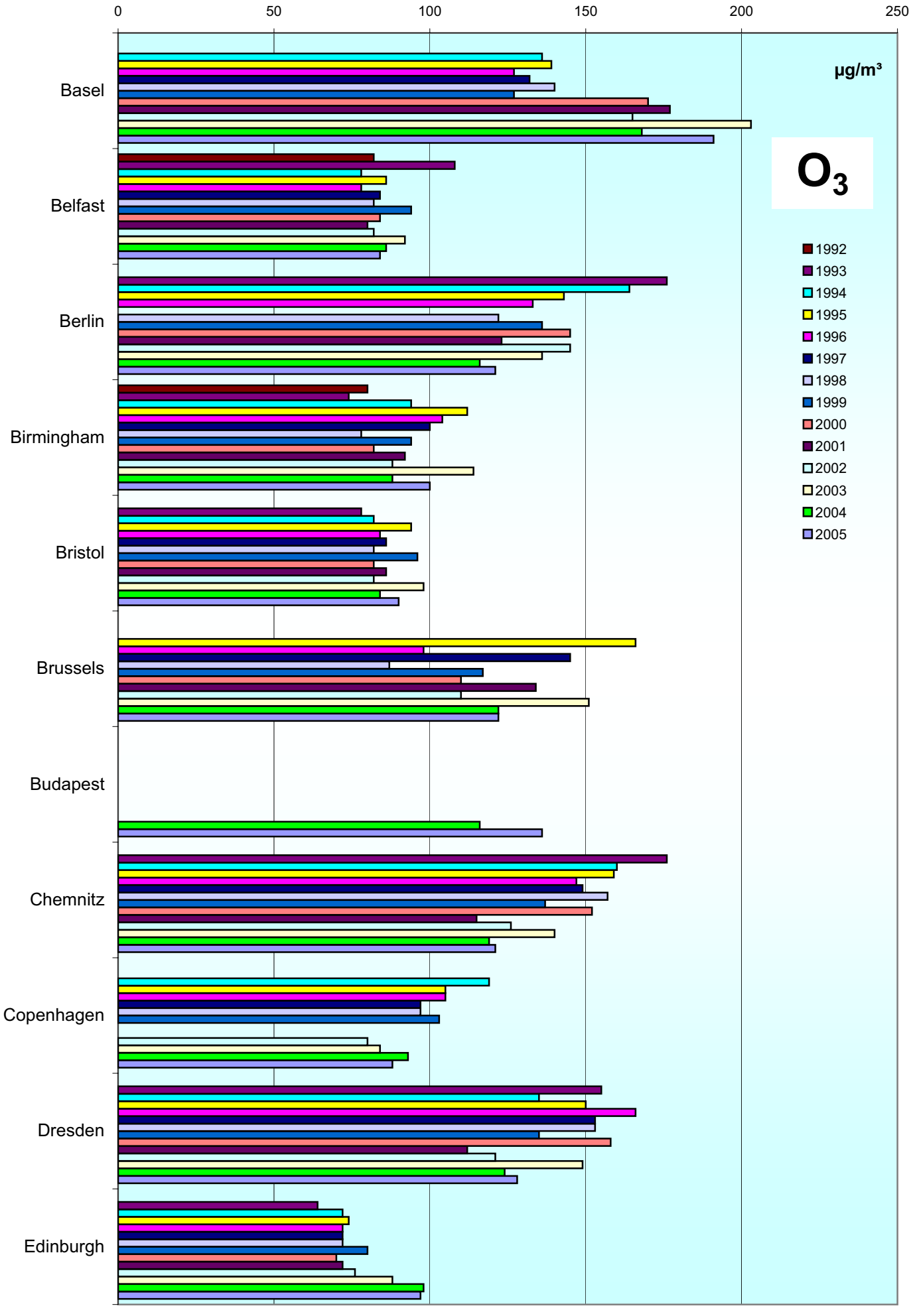
Comparison of The Air Quality 1992 - 2005

max. 98 percentile(peak-stressed monitoring station)



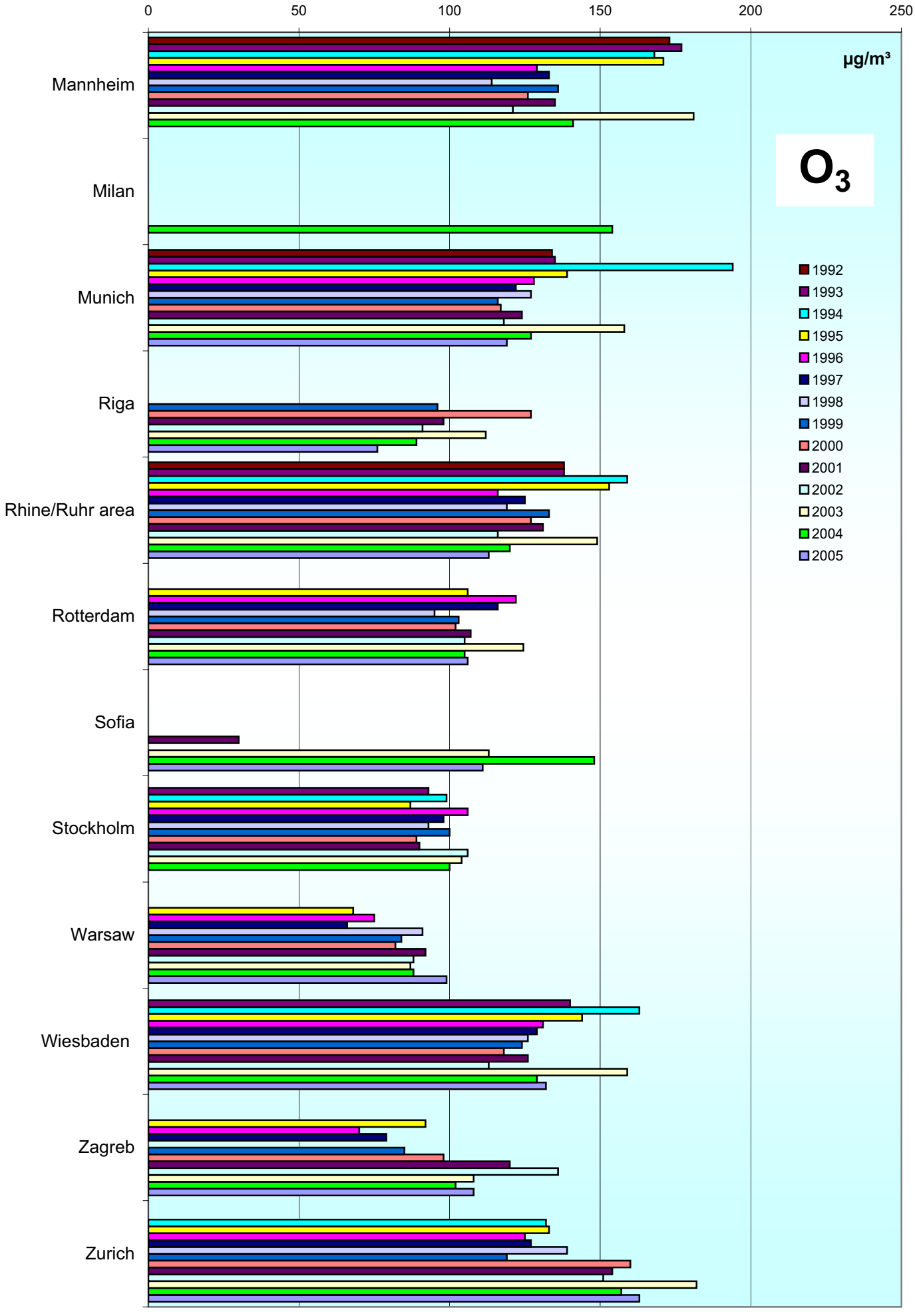
Comparison of The Air Quality 1992 - 2005

max. 98 percentile (peak-stressed monitoring station)



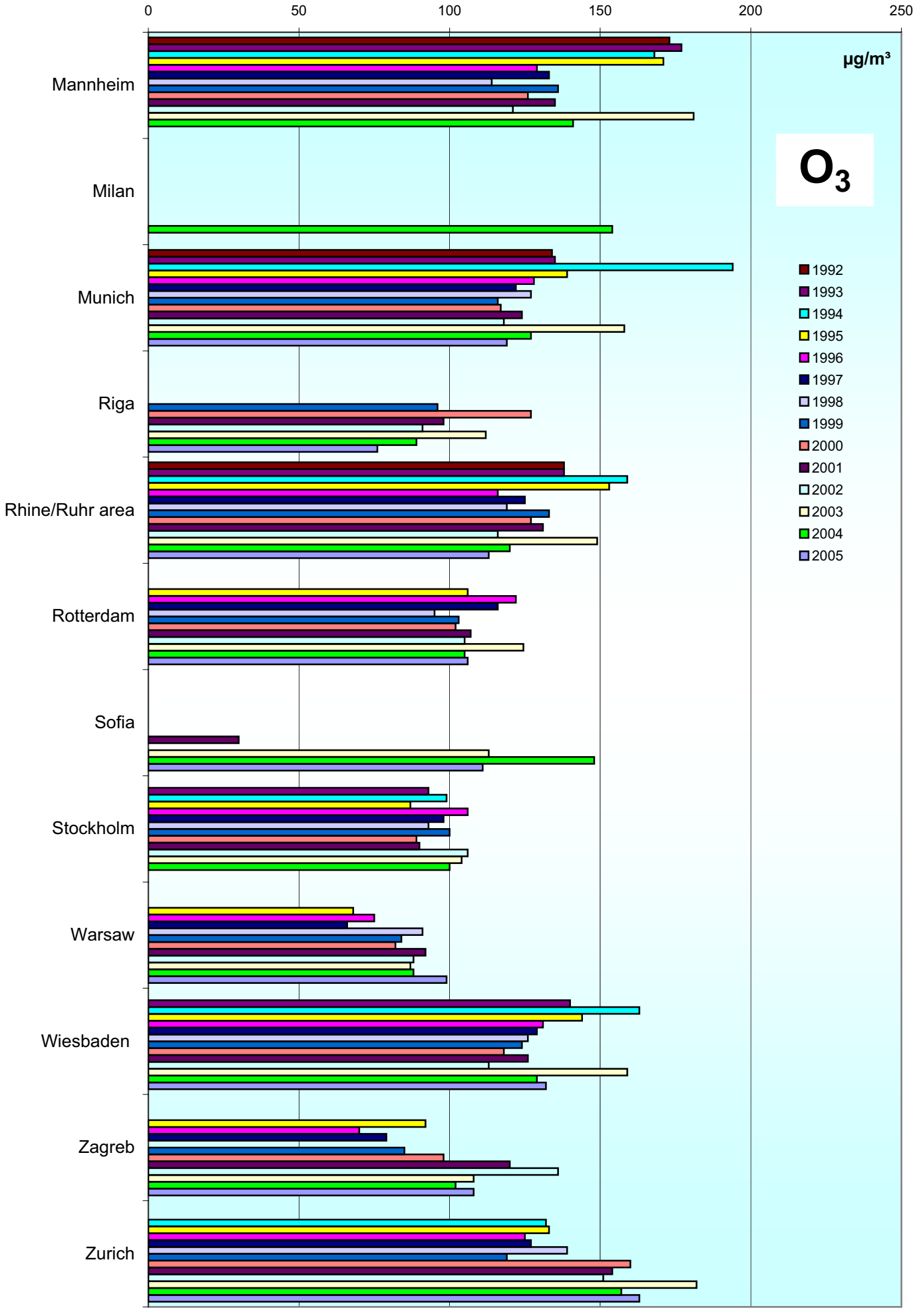
Comparison of The Air Quality 1992 - 2005

max. 98 percentile (peak-stressed monitoring station)



Comparison of The Air Quality 1992 - 2005

max. 98 percentile (peak-stressed monitoring station)



Jahresvergleich

1993 - 2005

Jahresmittelwerte, Σ SO_2, TSP/PM10, NO_2

Comparison Of The Air Quality

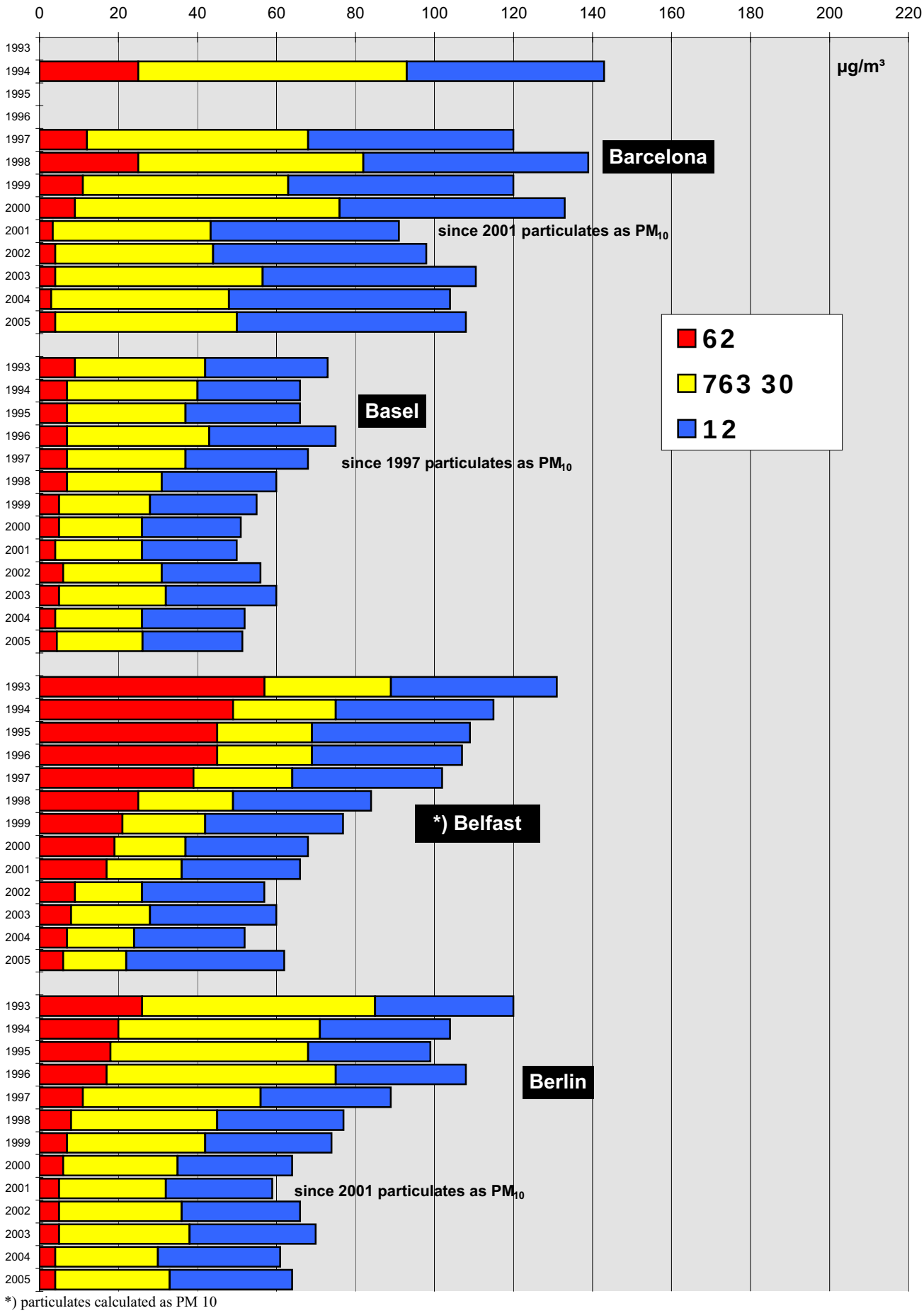
1993 - 2005

Annual Mean Values, Σ SO_2, TSP/PM10, NO_2

Comparison Of The Air Quality 1993-2005

Development of the annual mean values, Σ SO_2, TSP/PM_{10}, NO_2

(mean of all monitoring stations)



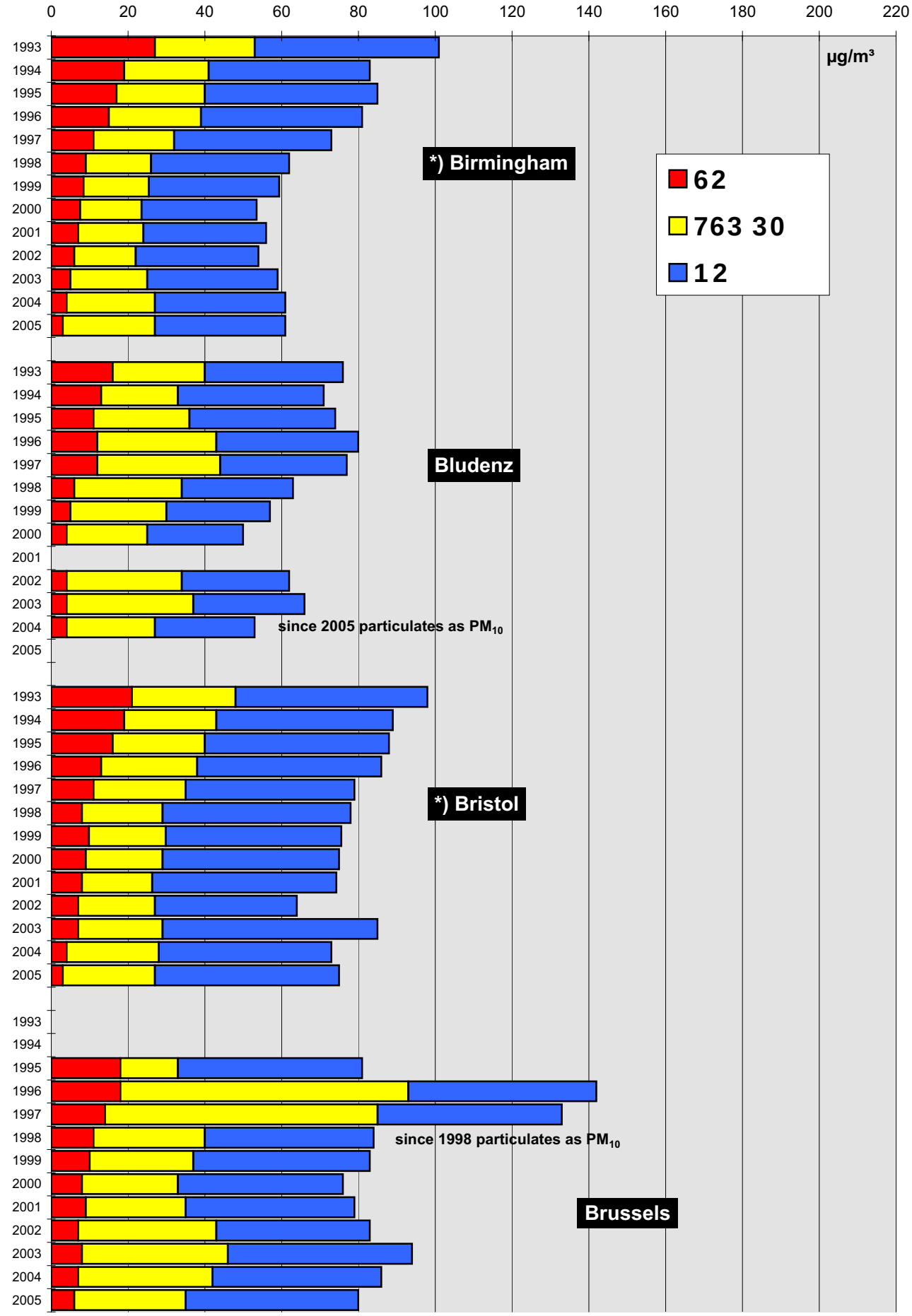
*) particulates calculated as PM 10

Magistrat Linz - Umwelt- und Technik-Center

Comparison Of The Air Quality 1993-2005

Development of the annual mean values, Σ SO_2, TSP/PM_{10}, NO_2

(mean of all monitoring stations)

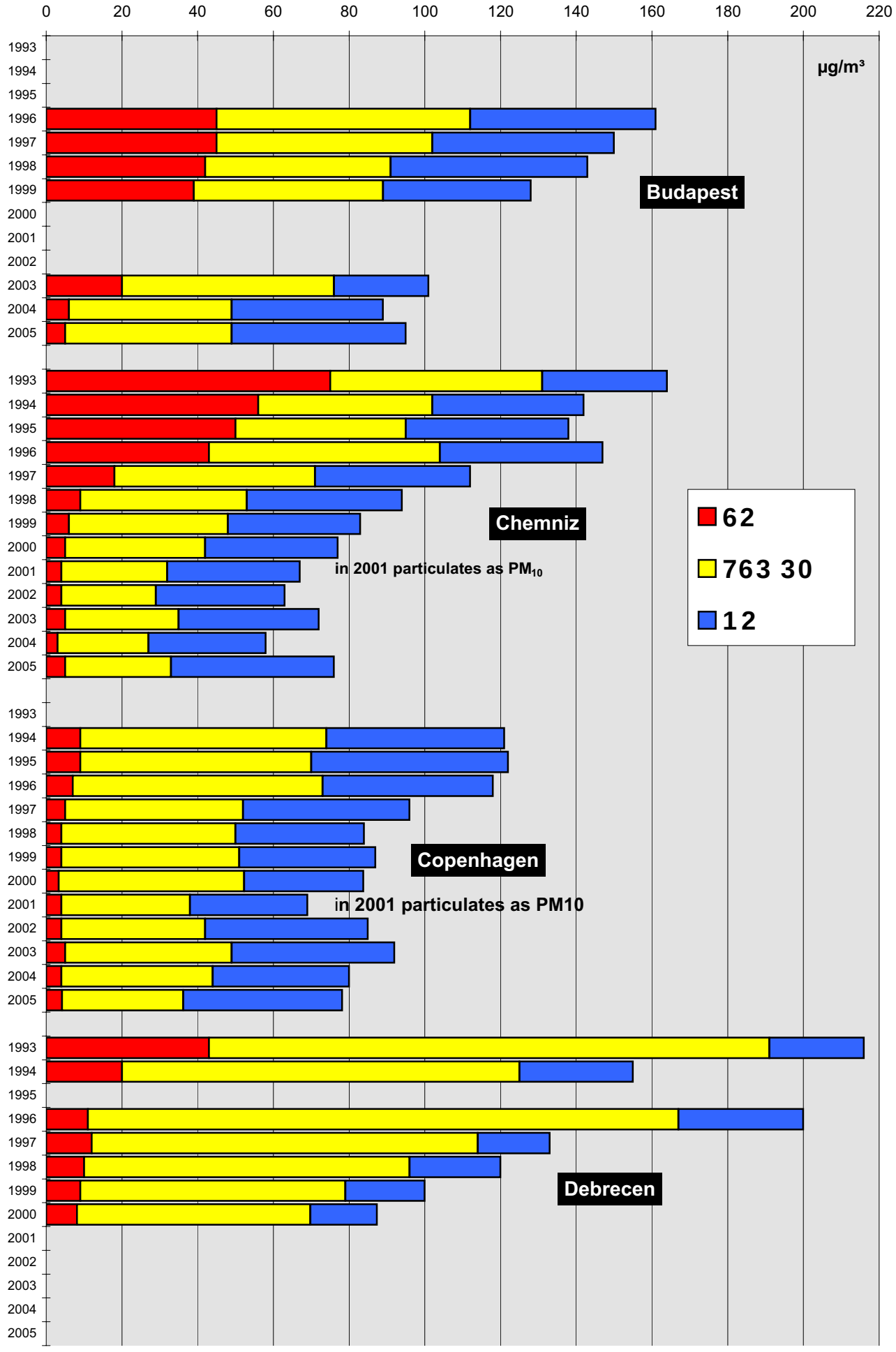


*) particulates calculated as PM 10

Comparison Of The Air Quality 1993-2005

Development of the annual mean values, Σ SO_2, TSP/PM_{10}, NO_2

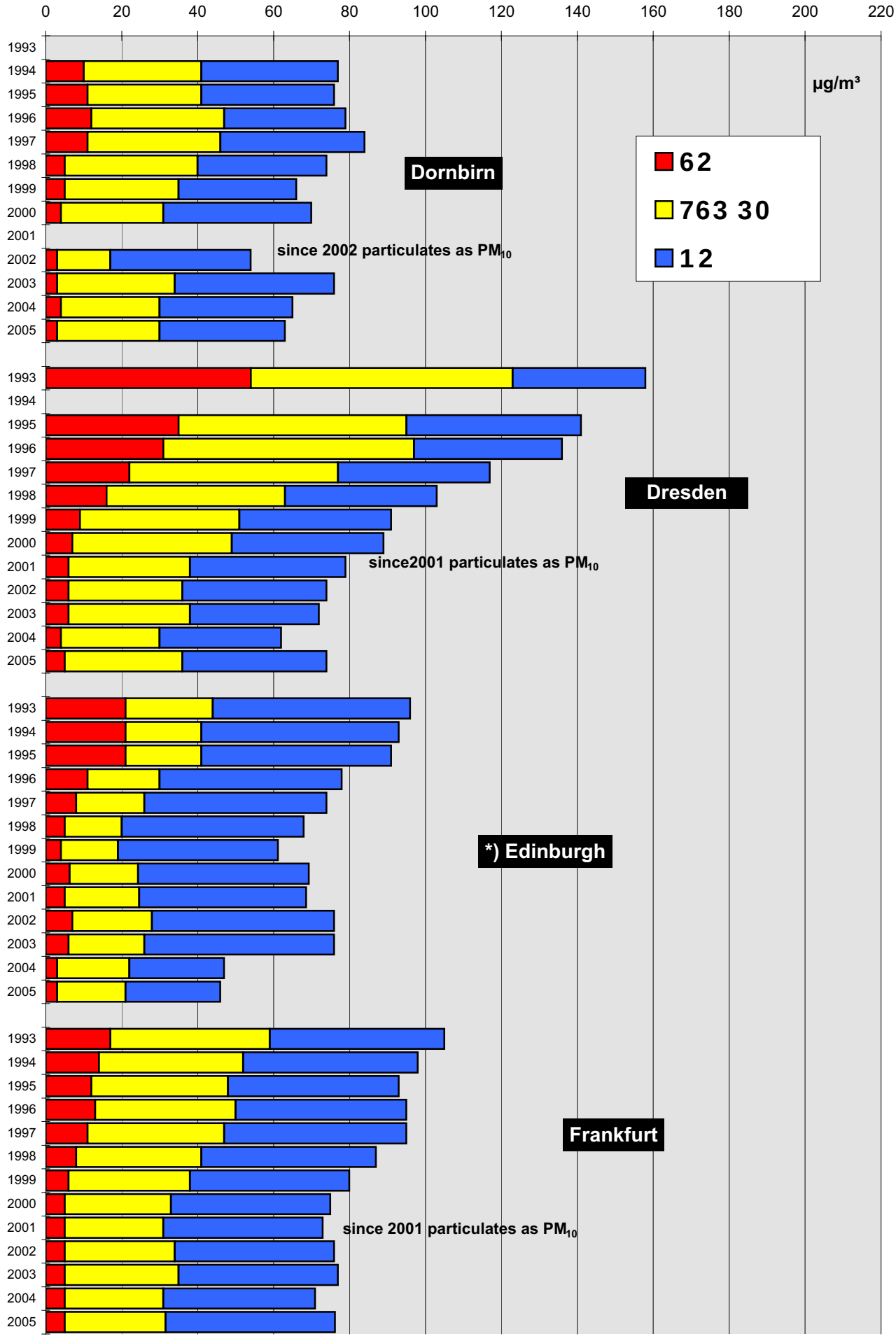
(mean of all monitoring stations)



Comparison Of The Air Quality 1993-2005

Development of the annual mean values, Σ SO_2, TSP/PM_{10}, NO_2

(mean of all monitoring stations)

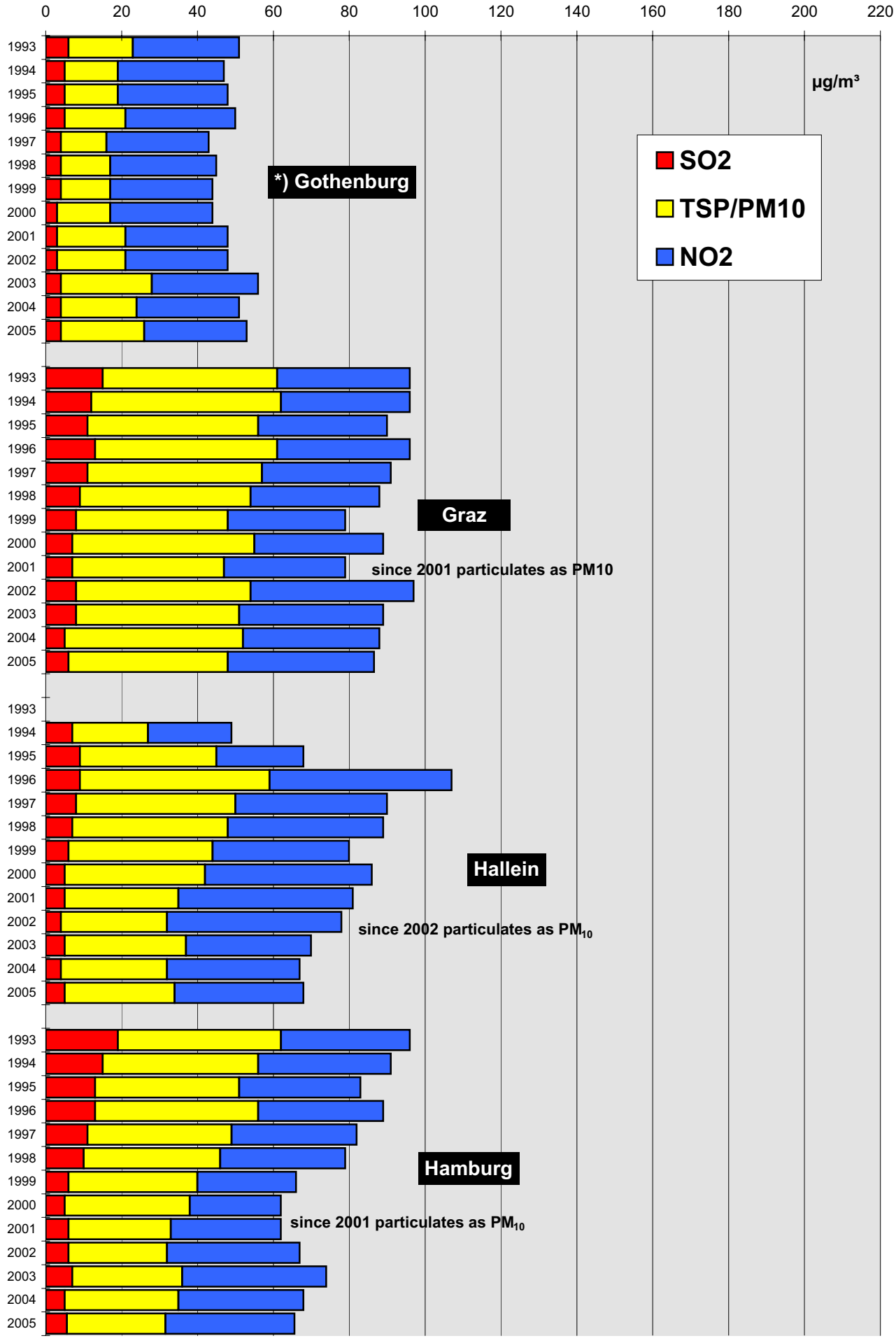


*) particulates calculated as PM_{10}

Comparison Of The Air Quality 1993-2005

Development of the annual mean values, Σ SO_2, TSP/PM_{10}, NO_2

(mean of all monitoring stations)

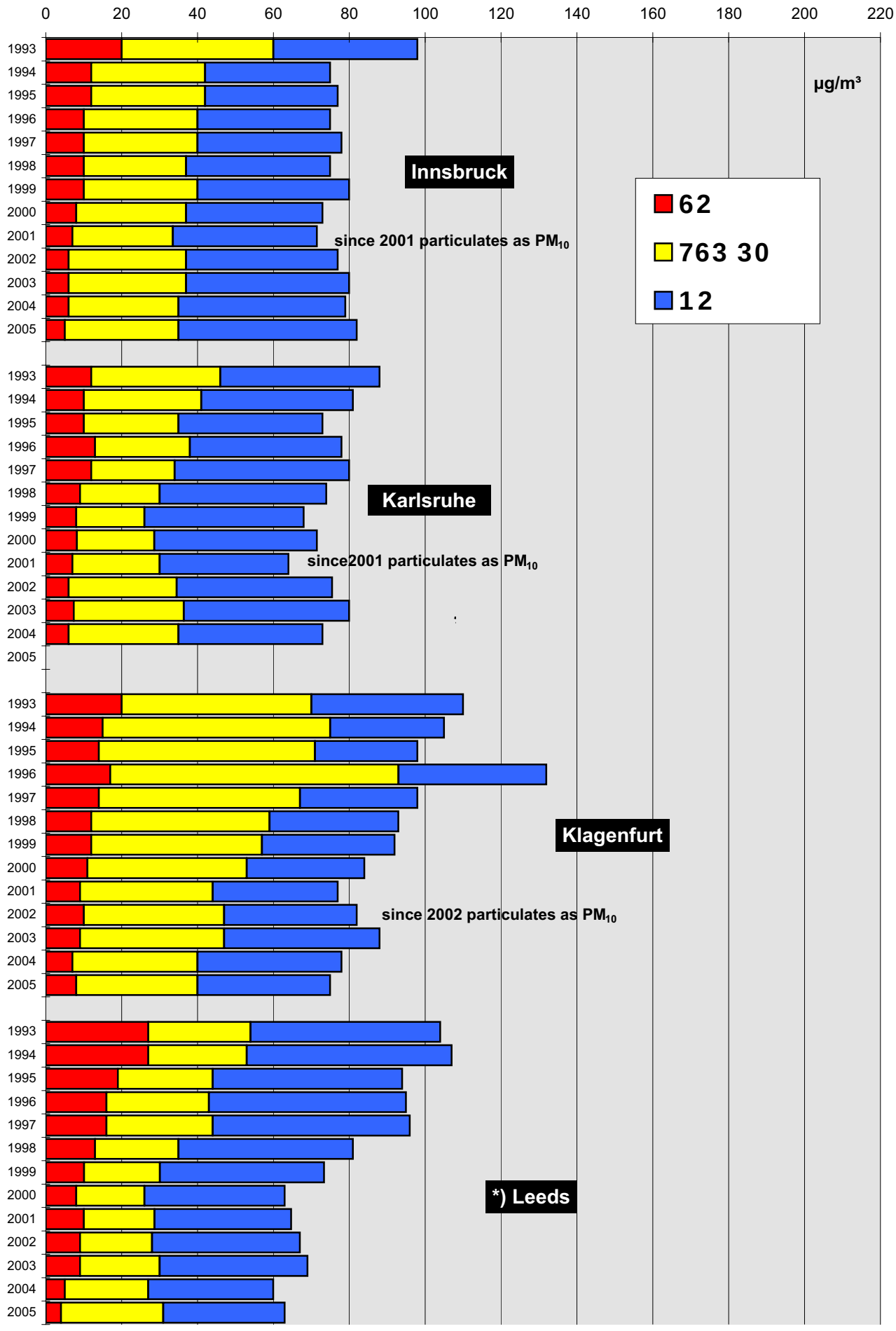


*) particulates calculated as PM_{10}

Comparison Of The Air Quality 1993-2005

Development of the annual mean values, Σ SO_2, TSP/PM_{10}, NO_2

(mean of all monitoring stations)

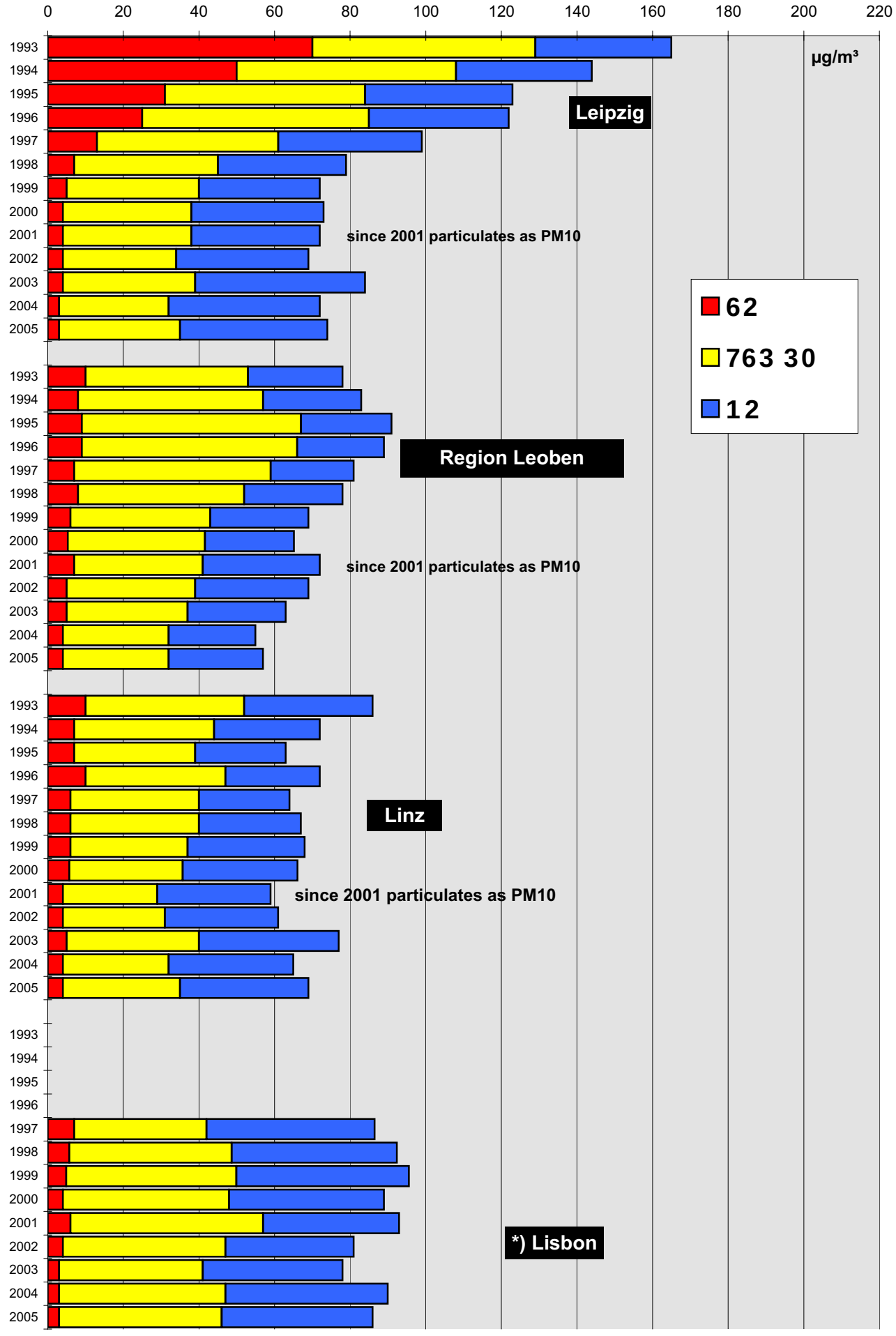


*) particulates calculated as PM_{10}

Comparison Of The Air Quality 1993-2005

Development of the annual mean values, Σ SO_2, TSP/PM_{10}, NO_2

(mean of all monitoring stations)

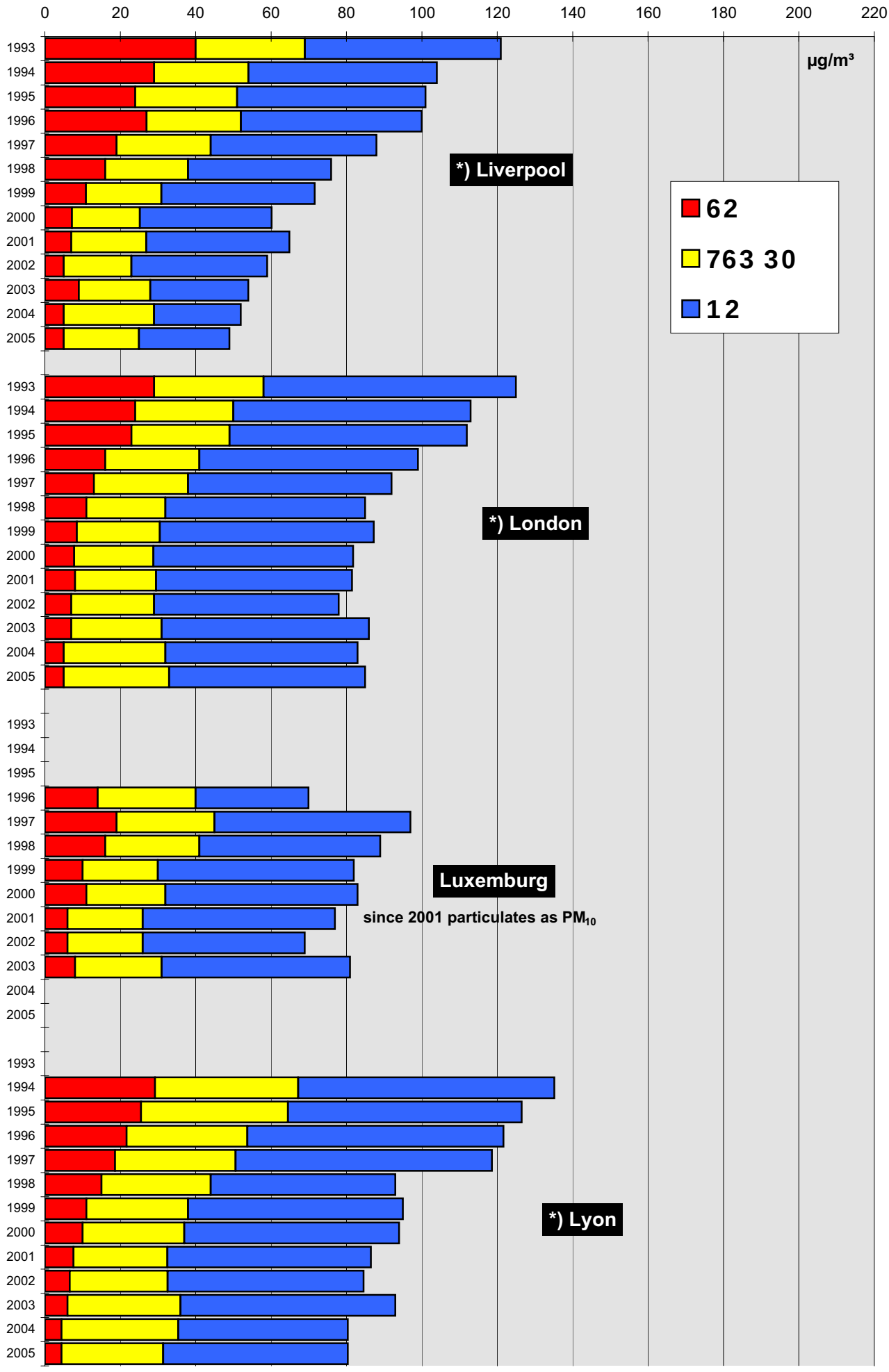


*) particulates calculated as PM_{10}

Comparison Of The Air Quality 1993-2005

Development of the annual mean values, Σ SO_2, TSP/PM_{10}, NO_2

(mean of all monitoring stations)

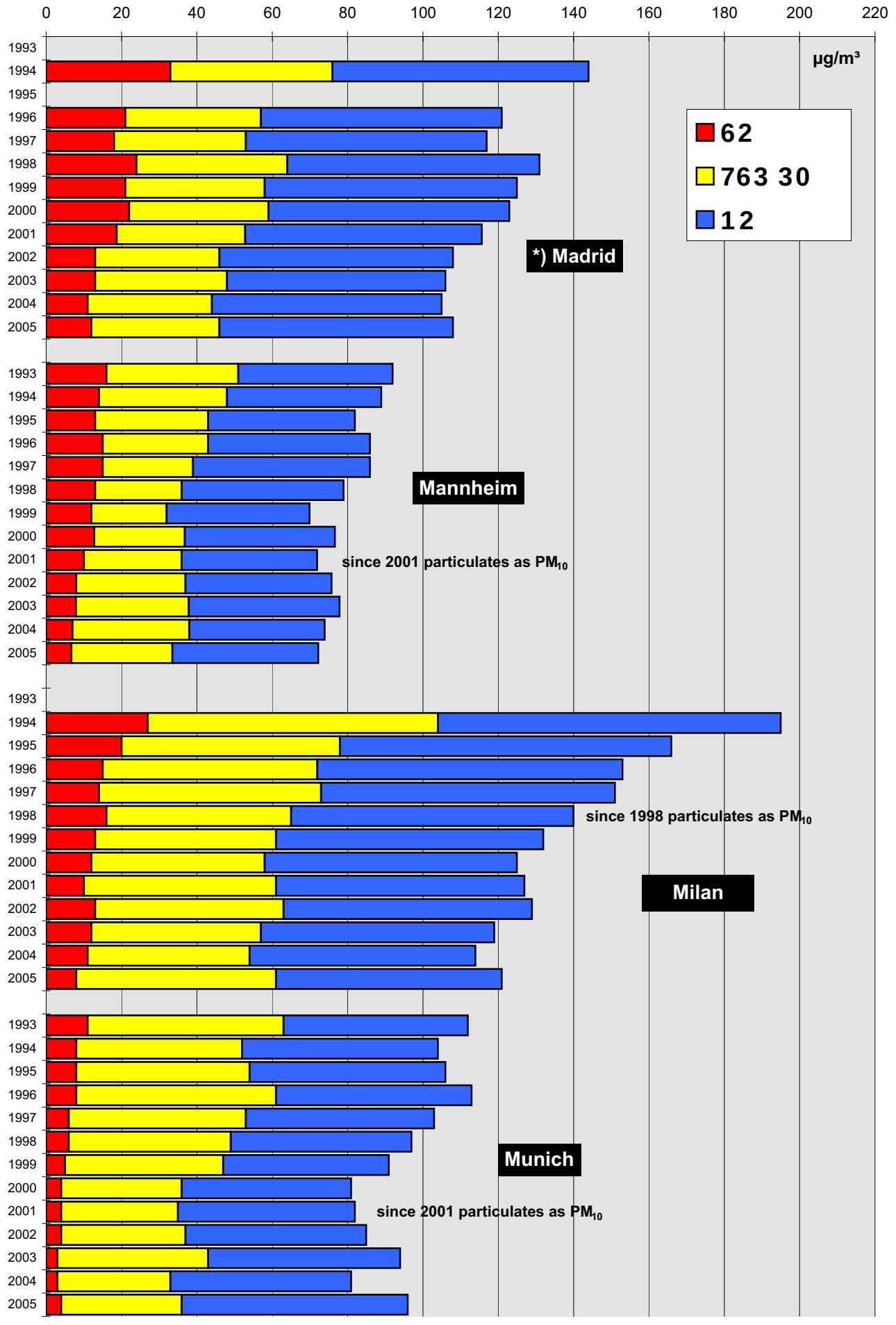


*) particulates calculated as PM_{10}

Comparison Of The Air Quality 1993-2005

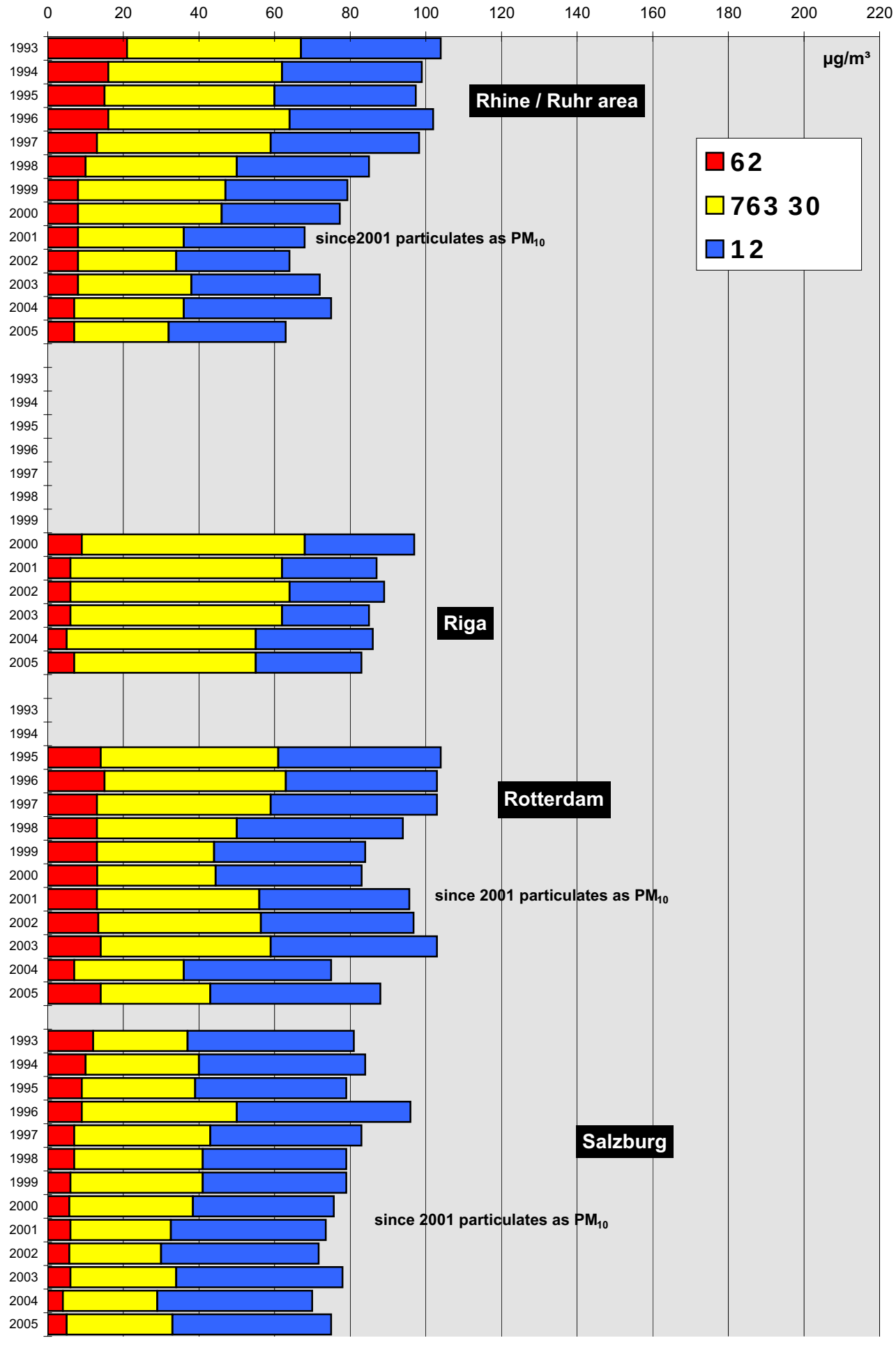
Development of the annual mean values, Σ SO_2, TSP/PM_{10}, NO_2

(mean of all monitoring stations)



*) particulates calculated as PM_{10}

Comparison Of The Air Quality 1993-2005
Development of the annual mean values, Σ SO_2, TSP/PM_{10}, NO_2
(mean of all monitoring stations)

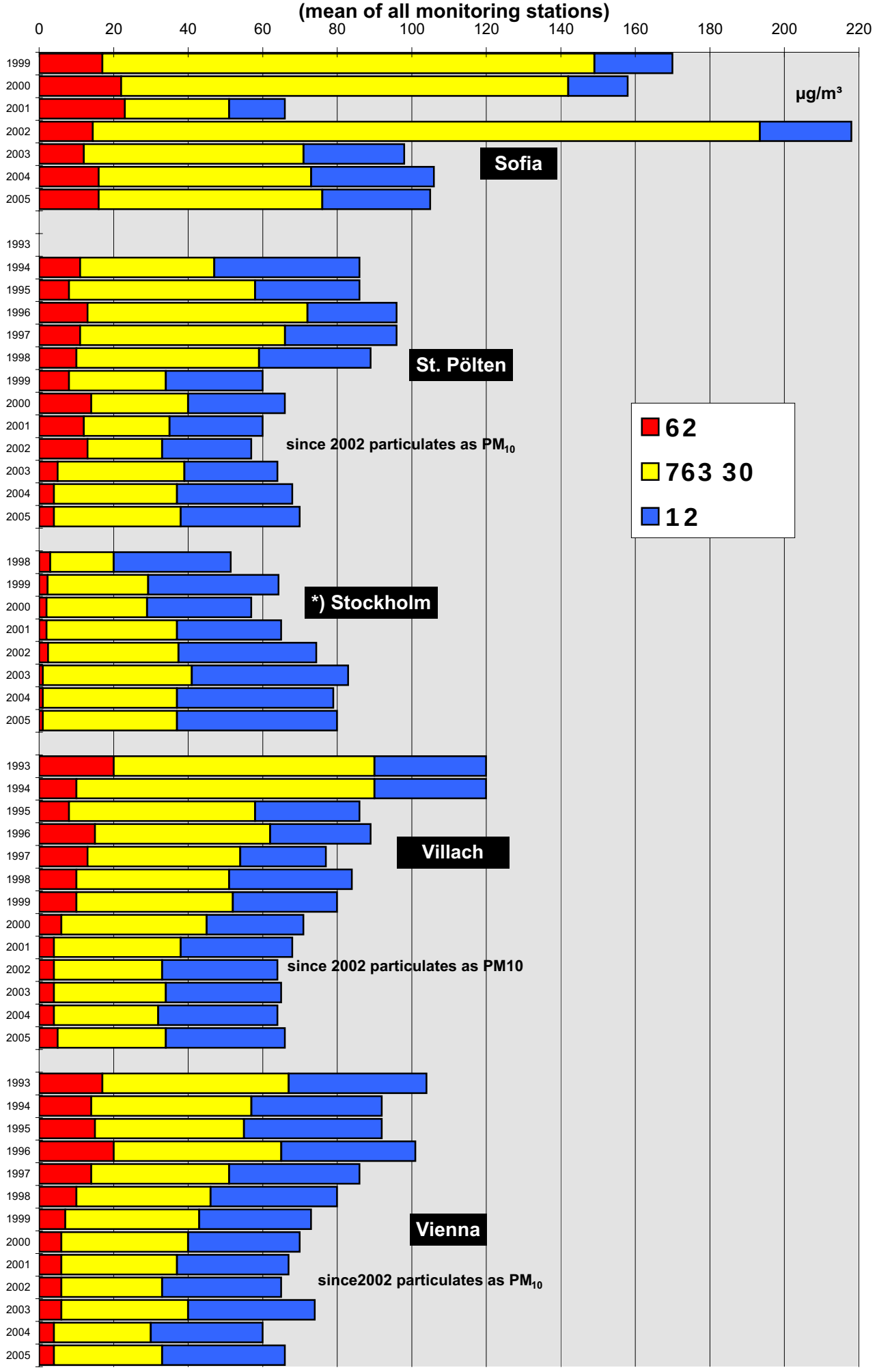


*) particulates calculated as PM_{10}

Comparison Of The Air Quality 1993-2005

Development of the annual mean values, Σ SO_2, TSP/PM_{10}, NO_2

(mean of all monitoring stations)

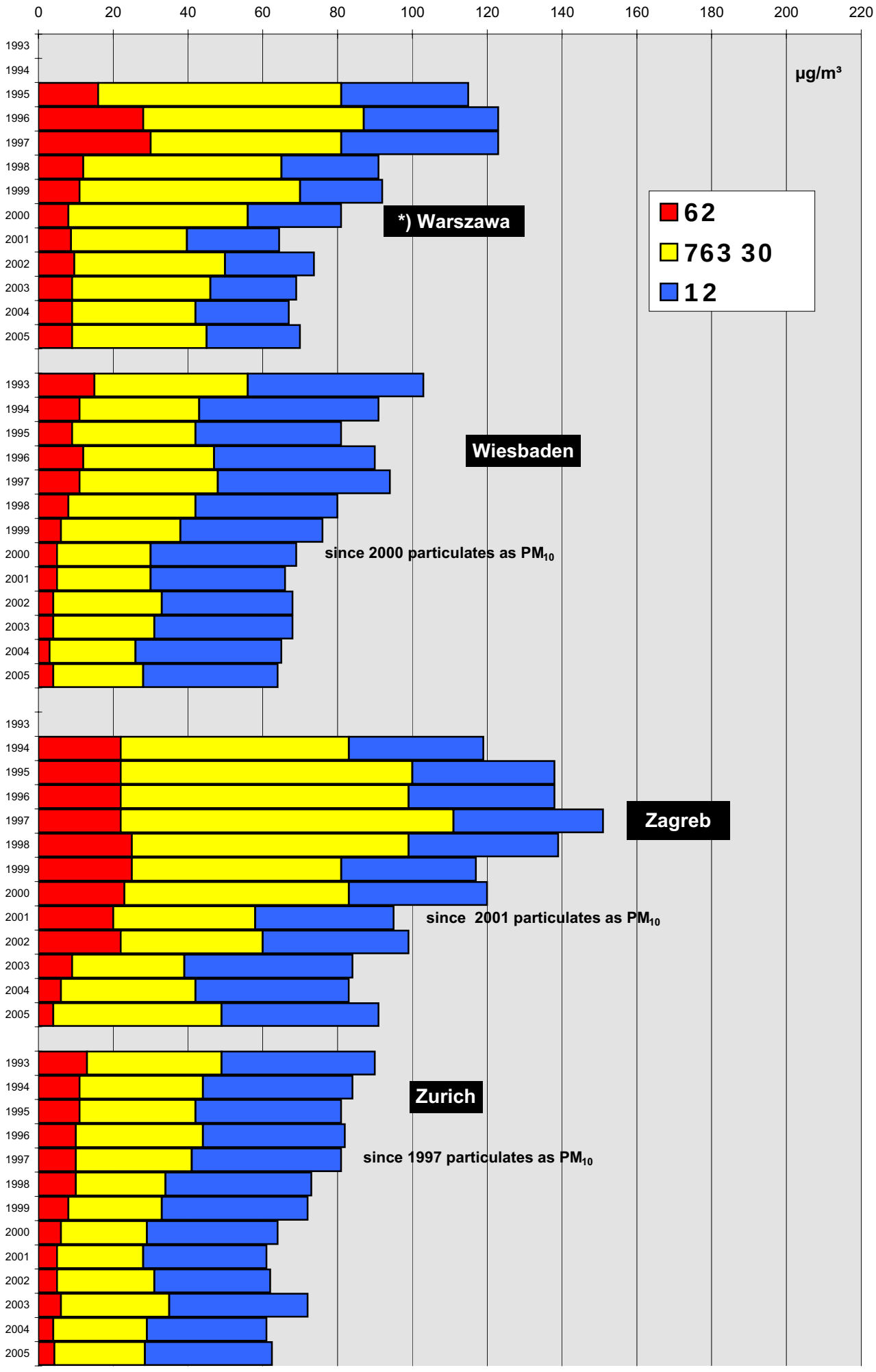


*) particulates calculated as PM_{10}

Comparison Of The Air Quality 1993-2005

Development of the annual mean values, Σ SO_2, TSP/PM_{10}, NO_2

(mean of all monitoring stations)



Luftgütekennzahlen 2005

der einzelnen

Vergleichsregionen

Immission Reference Values 2005

Of All Compared Regions

Comparison of The Air Quality in 2005

Barcelona

	Number of monitoring stations	Annual mean value [1] [µg/m³]	max. monthly mean value [2] [µg/m³]	max. daily mean value [2] [µg/m³]	** max. 3h mean value [2] [µg/m³]	max. 1h mean value [2] [µg/m³]	max. ½ h mean value [2] [µg/m³]	*** Max. 98-Percentile per year [µg/m³]
SO_2	4	3,7	10	33	151	221	-	26
*PM_{10}	5	46,4	70	105	-	-	-	89 (24 h)
NO	5	33,6	102	311	735	794	-	275
NO_2	5	58,2	94	138	230	296	-	148
CO	5	560	1100	2540	5380	6700	-	2450
O_3	5	35,1	77	115	171		-	125

PM_{10}:	Monitoring method(s) used:	Gravimetrically
	Correction factor for this method according to EU-directive 1999/30/EC):	1.0
	Number of limit violations of the daily mean standard of 50 µg/m³ at the highest stressed station in 2005 (measured values **including** correction factor):	74 (34 % data) *****
NO_2	Number of limit violations of the 1h mean standard of 200 µg/m³ at the highest stressed station in 2005:	14 ****

* Gravimetric method only

** Static average (not moving average)

*** Maximum 98 percentile of 1-hour values

**** 99,8-Percentile: 192 µg/m³

***** 90,1-percentile = 78 µg/m³

Basel

	Number of monitoring stations	Annual mean value [1] [µg/m³]	max. monthly mean value [2] [µg/m³]	max. daily mean value [2] [µg/m³]	max. 3h mean value [2] [µg/m³]	max. 1h mean value [2] [µg/m³]	max. ½ h mean value [2] [µg/m³]	Max. 98-Percentile per year [µg/m³]
SO_2	1	4,4	7	19	40	51	54	23
PM_{10}	1	21,7	31	79	102	128	160	85
NO	1	7,5	19	108	227	248	257	101
NO_2	1	25,3	36	76	117	119	123	85
CO	1	-	-	-	-	-	-	-
O_3	1	47,4	81	131	218	224	227	191

PM_{10}:	Monitoring method(s) used:	β-Meter-measurements, calibrated with gravimetrical measurements every 4 days
	Correction factor for this method according to EU-directive 1999/30/EC):	-
	Number of limit violations of the daily mean standard of 50 µg/m³ at the highest stressed station in 2005 (measured values **including** correction factor):	15
NO_2	Number of limit violations of the 1h mean standard of 200 µg/m³ at the highest stressed station in 2005:	0

1 arithmetic mean value of all monitoring stations of the affected area

2 max. value of all monitoring stations of the affected area

Comparison of The Air Quality in 2005

Belfast

	Number of monitoring stations	Annual mean value [1] [µg/m³]	max. monthly mean value [2] [µg/m³]	max. daily mean value [2] [µg/m³]	max. 3h mean value [2] [µg/m³]	max. 1h mean value [2] [µg/m³]	max. ½ h mean value [2] [µg/m³]	Max. 98-Percentile per year [µg/m³]
SO_2	2	5,5	11	45	95	110	125	27
PM_{10}	2	16	24	79	198	252	-	65
NO	1	21	50	308	619	726	-	184
NO_2	1	40	45	113	225	254	-	90
CO	1	200	400	2200	4100	4400	-	900
O_3	1	41	58	90	108	112	-	84

PM_{10}:	Monitoring method(s) used:	TEOM
	Correction factor for this method according to EU-directive 1999/30/EC):	1.3
	Number of limit violations of the daily mean standard of 50 µg/m³ at the highest stressed station in 2005 (measured values **including** correction factor):	5
NO_2	Number of limit violations of the 1h mean standard of 200 µg/m³ at the highest stressed station in 2005:	4

Birmingham

	Number of monitoring stations	Annual mean value [1] [µg/m³]	max. monthly mean value [2] [µg/m³]	max. daily mean value [2] [µg/m³]	max. 3h mean value [2] [µg/m³]	max. 1h mean value [2] [µg/m³]	max. ½ h mean value [2] [µg/m³]	Max. 98-Percentile per [2,3] [µg/m³]
SO_2	2	3,4	16	19	95	147	156	16
PM_{10}	2	24	31	74	176	259	-	74
NO	2	17	77	368	701	765	-	78
NO_2	2	34	54	121	186	212	-	78
CO	2	315	600	2100	3600	3800	-	1000
O_3	2	42	73	96	156	160	-	100

PM_{10}:	Monitoring method(s) used:	TEOM
	Correction factor for this method according to EU-directive 1999/30/EC):	1.3
	Number of limit violations of the daily mean standard of 50 µg/m³ at the highest stressed station in 2005 (measured values **including** correction factor):	5
NO_2	Number of limit violations of the 1h mean standard of 200 µg/m³ at the highest stressed station in 2005:	2

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1 arithmetic mean value of all monitoring stations of the affected area

2 max. value of all monitoring stations of the affected area

Comparison of The Air Quality in 2005

Berlin

	number of monitoring stations	annual mean [1] [µg/m³]	Max. monthly mean [2] [µg/m³]	Max. daily mean [2] [µg/m³]	Max. 8h-mean [2] [µg/m³]	Max. 1h-mean [2] [µg/m³]	Max. ½ h-mean [2] [µg/m³]	Max. 98-Percentile per year [µg/m³]
SO_2	**8/2/4/2**	**4/3/4/4**	-	**31/23/31/21**	-	**79/35/62/79**	-	**21/15/21/15**
Station types	a/b/c/d	a/b/c/d	-	a/b/c/d	-	a/b/c/d	-	a/b/c/d
PM_{10} 1)	**11/4/3/4**	**29/23/27/37**	-	**136/125/121/238**	-	**976/231/708/3283**	-	**70/68/70/91**
Station types	a/b/c/d	a/b/c/d	-	a/b/c/d	-	a/b/c/d	-	a/b/c/d
NO	**16/6/5/5**	**23/3/8/55**	-	**239/56/130/239**	-	**561/163/419/561**	-	**273/32/63/27**
NO_2	**16/6/5/5**	**31/14/26/51**	-	**126/46/85/126**	-	**309/103/146/309**	-	**134/51/75/13**
Station types	a/b/c/d	a/b/c/d	-	a/b/c/d	-	a/b/c/d	-	a/b/c/d
CO 2)	**10/3/ 4/3**	**400/300/ 400/700**	-	-	**3300/900/ 3100/3300**	**4500/1800/ 4000/4500**	-	**2400/600/ 1000/2400**
Station types	a/b/c/d	a/b/c/d	-	-	a/b/c/d	a/b/c/d	-	a/b/c/d
O_3	**8/2/6**	**44/49/40**	-	-	**175/155/175**	**193/170/193**	**199/174/199**	**121/107/121**
Station types	a/c/b	a/c/b	-	-	a/c/b	a/c/b	a/c/b	a/c/b
PM_{10}: number of exeedances of the daily mean value of 50 µg/m³ at the highest stressed station in 2005 (measured values **including** correction factor for the PM10-measurement according to EU-directive 1999/30/EU)								**74**

[1] arithmetic mean value of all monitoring stations of the affected area

[2] max. value of all monitoring stations of the affected area

Comments:

1) PM_{10} (only monitoring PM_{10})

2) CO in mg/m³

Station types

a all monitoring stations

b outskirts (including a monitoring station located in an industrial area in the outskirts of Berlin. This station has registered the highest values for the components NO_2 and NO

c Downtown

d traffically influenced stations

98-percentiles:

SO_2: 98%-value of the hour's means
PM_{10}: 98%- value of the daily means
NO, NO_2: 98%- value of the hour's means
CO: 98%-value of the hour's means
Ozone: 98%-value of the hour's means

other comments:

Max. monthly mean values and max. 3h mean values are not calculated by the monitoring network BLUME.
The pollutants CO and O3 are determined as max 8h mean values.
Max. daily mean values CO and O_3 are not calculated.
Max ½ h mean values are only registered for O_3.

Comparison of The Air Quality in 2005

Bludenz

	Number of monitoring stations	Annual mean value [1] [µg/m³]	max. monthly mean value [2] [µg/m³]	max. daily mean value [2] [µg/m³]	max. 3h mean value [2] [µg/m³]	max. 1h mean value [2] [µg/m³]	max. ½ h mean value [2] [µg/m³]	Max. 98-Percentile per year [µg/m³]
SO_2	-	-	-	-	-	-	-	-
PM_{10}	1	23	35	89	-	-	-	54
NO	1	18	46	189	321	381	403	140
NO_2	1	30	49	87	136	144	145	92
CO	-	-	-	-	-	-	-	-
O_3	1	41	74	113	166	170	172	120

PM_{10}:	Monitoring method(s) used:	gravimetrically
	Correction factor for this method according to EU-directive 1999/30/EC):	1.0
	Number of limit violations of the daily mean standard of 50 µg/m³ at the highest stressed station in 2005 (measured values **including** correction factor):	13
NO_2	Number of limit violations of the 1h mean standard of 200 µg/m³ at the highest stressed station in 2005:	0

Bristol

	Number of monitoring stations	Annual mean value [1] [µg/m³]	max. monthly mean value [2] [µg/m³]	max. daily mean value [2] [µg/m³]	max. 3h mean value [2] [µg/m³]	max. 1h mean value [2] [µg/m³]	max. ½ h mean value [2] [µg/m³]	Max. 98-Percentile per year [µg/m³]
SO_2	1	3	5	12	29	41	56	15
PM_{10}	1	24	28	56	165	283	-	60
NO	2	46	131	159	631	650	-	281
NO_2	2	48	82	88	235	285	-	143
CO	1	300	400	800	1900	2300	-	600
O_3	1	46	60	83	131	136	-	90

PM_{10}:	Monitoring method(s) used:	TEOM
	Correction factor for this method according to EU-directive 1999/30/EC):	1.3
	Number of limit violations of the daily mean standard of 50 µg/m³ at the highest stressed station in 2005 (measured values **including** correction factor):	4
NO_2	Number of limit violations of the 1h mean standard of 200 µg/m³ at the highest stressed station in 2005:	22

[1] arithmetic mean value of all monitoring stations of the affected area

[2] max. value of all monitoring stations of the affected area

Comparison of The Air Quality in 2005

Brussels

	Number of monitoring stations	Annual mean value [1] [µg/m³]	max. monthly mean value [2] [µg/m³]	max. daily mean value [2] [µg/m³]	max. 3h mean value [2] [µg/m³]	max. 1h mean value [2] [µg/m³]	max. ½ h mean value [2] [µg/m³]	Max. 98-Percentile per year [µg/m³]
SO_2	8	6	16	29	45	59	73	28
PM_{10}	6	29	51	143	251	543	885	109
NO	11	27	128	285	699	768	779	309
NO_2	11	45	108	190	283	341	353	183
CO	8	430	890	3000	10120	12400	17490	1860
O_3	7	34	75	136	219	226	232	122

PM_{10}:	Monitoring method(s) used:	TEOM
	Correction factor for this method according to EU-directive 1999/30/EC):	1.47
	Number of limit violations of the daily mean standard of 50 µg/m³ at the highest stressed station in 2005 (measured values **including** correction factor):	67
NO_2	Number of limit violations of the 1h mean standard of 200 µg/m³ at the highest stressed station in 2005:	90

Comments:
* Station 41B003 is a traffic station located on the inner boulevard of Brussels. It is where the highest concentrations for NO, NO_2 and CO are observed.

Budapest

	Number of monitoring stations	Annual mean value [1] [µg/m³]	max. monthly mean value [2] [µg/m³]	max. daily mean value [2] [µg/m³]	max. 3h mean value [2] [µg/m³]	max. 1h mean value [2] [µg/m³]	max. ½ h mean value [2] [µg/m³]	Max. 98-Percentile per year [µg/m³]
SO_2	7	4,5	12	48	86	90	-	21*
TSP	2	55,9	107	237	525	691	-	206*
PM_{10}	9	43,7	96	238	308	370	-	157**
NO	11	27,4	124	235	435	506	-	285*
NO_2	11	46,4	103	164	214	267	-	164*
CO	10	648	1373	2973	6111	7547	-	2238*
O_3	9	39,6	79	113	174	183	-	136*

PM_{10}:	Monitoring method(s) used:	β-absorption
	Correction factor for this method according to EU-directive 1999/30/EC):	1.3
	Number of limit violations of the daily mean standard of 50 µg/m³ at the highest stressed station in 2005 (measured values **including** correction factor):	160
NO_2	Number of limit violations of the 1h mean standard of 200 µg/m³ at the highest stressed station in 2005:	25

* max. 98 percentile of 1 hour mean values
** max. 98 percentile of 1 daily mean values

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[1] arithmetic mean value of all monitoring stations of the affected area
[2] max. value of all monitoring stations of the affected area

Comparison of The Air Quality in 2005

Copenhagen (traffic station)

	Number of monitoring stations	Annual mean value [1] [µg/m³]	max. monthly mean value [2] [µg/m³]	max. daily mean value [2] [µg/m³]	max. 3h mean value [2] [µg/m³]	max. 1h mean value [2] [µg/m³]	max. ½ h mean value [2] [µg/m³]	Max. 98-Percentile per year [µg/m³]
SO_2	1	4,2	-	-	48	71	-	18
PM_{10}	2	37	-	-	-	110	-	-
NO	2	121	-	-	1300	1817	-	402
NO_2	2	51	-	-	195	248	-	111
CO	2	741	-	2018	-	7984	-	2142
O_3	2	32	-	70	-	121	-	73

PM_{10}:	Monitoring method(s) used:	gravimetrically
	Correction factor for this method according to EU-directive 1999/30/EC):	1.0
	Number of limit violations of the daily mean standard of 50 µg/m³ at the highest stressed station in 2005 (measured values **including** correction factor):	
NO_2	Number of limit violations of the 1h mean standard of 200 µg/m³ at the highest stressed station in 2005:	

Copenhagen Urban

	Number of monitoring stations	Annual mean value [1] [µg/m³]	max. monthly mean value [2] [µg/m³]	max. daily mean value [2] [µg/m³]	max. 3h mean value [2] [µg/m³]	max. 1h mean value [2] [µg/m³]	max. ½ h mean value [2] [µg/m³]	Max. 98-Percentile per year [µg/m³]
SO_2	-	-	-	-	-	-	-	-
PM_{10}	1	23	-	-	-	67	-	-
NO	1	29	-	-	229	474	-	95
NO_2	1	23	-	-	85	102	-	59
CO	1	287	-	935	-	2460	-	640
O_3	1	48	-	81	-	124	-	88

PM_{10}:	Monitoring method(s) used:	gravimetrically
	Correction factor for this method according to EU-directive 1999/30/EC):	1.0
	Number of limit violations of the daily mean standard of 50 µg/m³ at the highest stressed station in 2005 (measured values **including** correction factor):	
NO_2	Number of limit violations of the 1h mean standard of 200 µg/m³ at the highest stressed station in 2005:	0

[1] arithmetic mean value of all monitoring stations of the affected area

[2] max. value of all monitoring stations of the affected area

Comparison of The Air Quality in 2005

Chemnitz

	Number of monitoring stations	Annual mean value [1] [µg/m³]	max. monthly mean value [2] [µg/m³]	max. daily mean value [2] [µg/m³]	max. 3h mean value [2] [µg/m³]	max. 1h mean value [2] [µg/m³]	max. ½ h mean value [2] [µg/m³]	Max. 98-Percentile per year [µg/m³]
SO_2	1	5	9	44	115	154	175	28
PM_{10}	3	28	52	128	792	1362	2278	93
NO	3	33	94	177	398	497	548	277
NO_2	3	43	73	119	173	184	196	132
CO	1	600	800	1700	3500	4400	4800	1800
O_3	1	47	69	103	183	196	200	121

PM_{10}:	Monitoring method(s) used:	gravimetrically (High-Volume-Sampler)
	Correction factor for this method according to EU-directive 1999/30/EC):	1.0
	Number of limit violations of the daily mean standard of 50 µg/m³ at the highest stressed station in 2005 (measured values **including** correction factor):	59
NO_2	Number of limit violations of the 1h mean standard of 200 µg/m³ at the highest stressed station in 2005:	0

Dornbirn

	Number of monitoring stations	Annual mean value [1] [µg/m³]	max. monthly mean value [2] [µg/m³]	max. daily mean value [2] [µg/m³]	max. 3h mean value [2] [µg/m³]	max. 1h mean value [2] [µg/m³]	max. ½ h mean value [2] [µg/m³]	Max. 98-Percentile per year [µg/m³]
SO_2	1	3	6	13	44	47	47	10
PM_{10}	1	27	41	94	-	-	-	61
NO	1	28	50	125	325	374	409	151
NO_2	1	33	53	88	125	138	145	88
CO	-	-	-	-	-	-	-	-
O_3	-	-	-	-	-	-	-	-

PM_{10}:	Monitoring method(s) used:	Gravimetrically
	Correction factor for this method according to EU-directive 1999/30/EC):	1.0
	Number of limit violations of the daily mean standard of 50 µg/m³ at the highest stressed station in 2005 (measured values **including** correction factor):	22
NO_2	Number of limit violations of the 1h mean standard of 200 µg/m³ at the highest stressed station in 2005:	0

[1] arithmetic mean value of all monitoring stations of the affected area

[2] max. value of all monitoring stations of the affected area

Comparison of The Air Quality in 2005

Dresden

	Number of monitoring stations	Annual mean value [1] [µg/m³]	max. monthly mean value [2] [µg/m³]	max. daily mean value [2] [µg/m³]	max. 3h mean value [2] [µg/m³]	max. 1h mean value [2] [µg/m³]	max. ½ h mean value [2] [µg/m³]	Max. 98-Percentile per year [µg/m³]
SO_2	2	5	11	51	72	80	95	26
PM_{10}	4	31	59	117	328	387	463	106
NO	4	30	100	274	492	595	641	266
NO_2	4	38	68	97	153	158	166	115
CO	1	700	900	1600	2500	2900	3200	1600
O_3	3	47	80	119	196	205	209	128

PM_{10}:	Monitoring method(s) used:	Gravimetrically (High-Volume-Sampler)
	Correction factor for this method according to EU-directive 1999/30/EC):	1.0
	Number of limit violations of the daily mean standard of 50 µg/m³ at the highest stressed station in 2005 (measured values **including** correction factor):	78
NO_2	Number of limit violations of the 1h mean standard of 200 µg/m³ at the highest stressed station in 2005:	0

Edinburgh

	Number of monitoring stations	Annual mean value [1] [µg/m³]	max. monthly mean value [2] [µg/m³]	max. daily mean value [2] [µg/m³]	max. 3h mean value [2] [µg/m³]	max. 1h mean value [2] [µg/m³]	max. ½ h mean value [2] [µg/m³]	Max. 98-Percentile per year [µg/m³]
SO_2	1	3	4	18	63	91	131	16
PM_{10}	1	18	23	153	1020	1375	-	43
NO	1	8	18	123	271	313	-	51
NO_2	1	25	37	87	122	134	-	73
CO	1	300	400	1000	2300	2700	-	700
O_3	1	53	81	99	117	120	-	97

PM_{10}:	Monitoring method(s) used:	TEOM
	Correction factor for this method according to EU-directive 1999/30/EC):	1.3
	Number of limit violations of the daily mean standard of 50 µg/m³ at the highest stressed station in 2005 (measured values **including** correction factor):	3
NO_2	Number of limit violations of the 1h mean standard of 200 µg/m³ at the highest stressed station in 2005:	0

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1 arithmetic mean value of all monitoring stations of the affected area

2 max. value of all monitoring stations of the affected area

Comparison of The Air Quality in 2005

Frankfurt (urban stations)

	Number of monitoring stations	Annual mean value [1] [µg/m³]	max. monthly mean value [2] [µg/m³]	max. daily mean value [2] [µg/m³]	max. 3h mean value [2] [µg/m³]	max. 1h mean value [2] [µg/m³]	max. ½ h mean value [2] [µg/m³]	Max. 98-Percentile per year [µg/m³]
SO_2	4	5	10	26	44	79	87	22
PM_{10}	4	25	37	108	252	431	447	72
NO	4	26	58	177	328	352	358	137
NO_2	4	40	54	92	124	154	159	94
CO	4	400	600	1200	2300	3000	4000	1122
O_3	4	37	73	124	213	232	233	136

PM_{10}:	Monitoring method(s) used:	ß-absorption
	Correction factor for this method according to EU-directive 1999/30/EC):	-
	Number of limit violations of the daily mean standard of 50 µg/m³ at the highest stressed station in 2005 (measured values **including** correction factor):	20
NO_2	Number of limit violations of the 1h mean standard of 200 µg/m³ at the highest stressed station in 2005:	0

Frankfurt (traffic station)

	Number of monitoring stations	Annual mean value [1] [µg/m³]	max. monthly mean value [2] [µg/m³]	max. daily mean value [2] [µg/m³]	max. 3h mean value [2] [µg/m³]	max. 1h mean value [2] [µg/m³]	max. ½ h mean value [2] [µg/m³]	Max. 98-Percentile per year [µg/m³]
SO_2	-	-	-	-	-	-	-	-
PM_{10}	1	33	44	115	160	260	270	85
NO	1	55	93	224	464	585	594	217
NO_2	1	63	75	124	209	256	261	136
CO	1	700	1000	1800	4100	5300	5300	2100
O_3	-	-	-	-	-	-	-	-

PM_{10}:	Monitoring method(s) used:	ß-absorption
	Correction factor for this method according to EU-directive 1999/30/EC):	-
	Number of limit violations of the daily mean standard of 50 µg/m³ at the highest stressed station in 2005 (measured values **including** correction factor):	48
NO_2	Number of limit violations of the 1h mean standard of 200 µg/m³ at the highest stressed station in 2005:	10

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1 arithmetic mean value of all monitoring stations of the affected area

2 max. value of all monitoring stations of the affected area

Comparison of The Air Quality in 2005

Gothenburg

	Number of monitoring stations	Annual mean value [1] [µg/m³]	max. monthly mean value [2] [µg/m³]	max. daily mean value [2] [µg/m³]	max. 3h mean value [2] [µg/m³]	max. 1h mean value [2] [µg/m³]	max. ½ h mean value [2] [µg/m³]	Max. 98-Percentile per year [µg/m³]
SO_2	3	4,3	6	13	34	58	101	13,5
PM_{10}	1	21,7	31	57	169	208	227	57
NO	1	12	27	210	638	786	821	122,4
NO_2	3	26,6	38	99	202	239	246	96,9
CO	1	161	217	894	1933	2200	2400	500
O_3	3	55,1	83,0	123	159	175	177	120,8

PM_{10}:	Monitoring method(s) used:	Where more than one station is indicated the others are DOAS-stations with 2 respectively 3 separate measuring lightbeams. All stations are at rooftop level at ~25 meters height.lightbeams.
	Correction factor for this method according to EU-directive 1999/30/EC):	1.2
	Number of limit violations of the daily mean standard of 50 µg/m³ at the highest stressed station in 2005 (measured values **including** correction factor):	7
NO_2	Number of limit violations of the 1h mean standard of 200 µg/m³ at the highest stressed station in 2005:	2

Graz

	Number of monitoring stations	Annual mean value [1] [µg/m³]	max. monthly mean value [2] [µg/m³]	max. daily mean value [2] [µg/m³]	max. 3h mean value [2] [µg/m³]	max. 1h mean value [2] [µg/m³]	max. ½ h mean value [2] [µg/m³]	Max. 98-Percentile per year [µg/m³]
SO_2	3	5	11	22	35	64	107	20
TSP	1	34	60	116	252	306	410	117
PM_{10}	3	40	70	195	386	418	427	152
NO	4	29	111	310	496	542	609	283
NO_2	4	35	59	140	191	194	202	110
CO	2	600	1300	2700	4100	4400	5100	2600
O_3	4	52	106	137	157	158	160	136

PM_{10}:	Monitoring method(s) used:	continuous
	Correction factor for this method according to EU-directive 1999/30/EC):	1,3
	Number of limit violations of the daily mean standard of 50 µg/m³ at the highest stressed station in 2005 (measured values **including** correction factor):	113
NO_2	Number of limit violations of the 1h mean standard of 200 µg/m³ at the highest stressed station in 2005:	-

[3] Max 3h-mean = gliding
[4] max. 1h-mean = non gliding

[1] arithmetic mean value of all monitoring stations of the affected area
[2] max. value of all monitoring stations of the affected area

Comparison of The Air Quality in 2005

Graz traffically influenced (Don Bosco)

	Number of monitoring stations	Annual mean value [1] [µg/m³]	max. monthly mean value [2] [µg/m³]	max. daily mean value [2] [µg/m³]	max. 3h mean value [2, 3] [µg/m³]	max. 1h mean value [2, 4] [µg/m³]	max. ½ h mean value [2] [µg/m³]	Max. 98-Percentile per year [µg/m³]
SO_2	1	9	17	26	45	55	56	26
TSP	-	-	-	-	-	-	-	-
PM_{10}	1	47	76	179	400	401	703	167
NO	1	70	144	339	?	?	808	354
NO_2	1	53	71	146	188	191	204	125
CO	1	700	1400	2600	4600	4800	5200	2700
O_3	-	-	-	-	-	-	-	-

PM_{10}:	Monitoring method(s) used:	continuous
	Correction factor for this method according to EU-directive 1999/30/EC):	1.3
	Number of limit violations of the daily mean standard of 50 µg/m³ at the highest stressed station in 2005 (measured values **including** correction factor):	127
NO_2	Number of limit violations of the 1h mean standard of 200 µg/m³ at the highest stressed station in 2005:	0

[3] Max 3h-mean = gliding
[4] max. 1h-mean = non gliding

Hallein

	Number of monitoring stations	Annual mean value [1] [µg/m³]	max. monthly mean value [2] [µg/m³]	max. daily mean value [2] [µg/m³]	max. 3h mean value [2] [µg/m³]	max. 1h mean value [2] [µg/m³]	max. ½ h mean value [2] [µg/m³]	Max. 98-Percentile per year [µg/m³]
SO_2	2	4,9	11	34	81	136	177	19,7
PM_{10}	1	29,3	43	101	-	-	-	72
NO	2	35,8	123	266	502	575	620	268
NO_2	2	34	73	110	158	168	182	113
CO	1	600	940	1530	2250	2710	2930	1620
O_3	1	64	-	127	184	185	197	131

PM_{10}:	Monitoring method(s) used:	gravimetrically
	Correction factor for this method according to EU-directive 1999/30/EC):	1.0
	Number of limit violations of the daily mean standard of 50 µg/m³ at the highest stressed station in 2005 (measured values **including** correction factor):	27
NO_2	Number of limit violations of the 1h mean standard of 200 µg/m³ at the highest stressed station in 2005:	0

Location of the monitoring stations:
One heavily traffically influenced
One station in green area

[1] arithmetic mean value of all monitoring stations of the affected area
[2] max. value of all monitoring stations of the affected area

Comparison of The Air Quality in 2005

Hamburg (area monitoring stations)

	Number of monitoring stations	Annual mean value [1] [µg/m³]	max. monthly mean value [2] [µg/m³]	max. daily mean value [2] [µg/m³]	max. 3h mean value [2] [µg/m³]	max. 1h mean value [2] [µg/m³]	max. ½ h mean value [2] [µg/m³]	Max. 98-Percentile per year [µg/m³]
SO_2	11	5	19	71	244	332	391	60
PM_{10}	9	24	37	120	376	557	741	75
NO	13	9	44	177	537	658	740	136
NO_2	13	25	45	72	139	268	325	82
CO	3	301	408	866	1226	1637	2457	801
O_3	6	41	67	101	163	177	185	106

PM_{10}:	Monitoring method(s) used:	TEOM (6 stations), β-absorption (3 stations)
	Correction factor for this method according to EU-directive 1999/30/EC):	variable 1.2 to 1.32
	Number of limit violations of the daily mean standard of 50 µg/m³ at the highest stressed station in 2005 (measured values **including** correction factor):	29
NO_2	Number of limit violations of the 1h mean standard of 200 µg/m³ at the highest stressed station in 2005:	0

Hamburg (traffic stations)

	Number of monitoring stations	Annual mean value [1] [µg/m³]	max. monthly mean value [2] [µg/m³]	max. daily mean value [2] [µg/m³]	max. 3h mean value [2] [µg/m³]	max. 1h mean value [2] [µg/m³]	max. ½ h mean value [2] [µg/m³]	Max. 98-Percentile per year [µg/m³]
SO_2	2	9	15	41	106	245	266	46
PM_{10}	3	31	43	100	345	701	958	81
NO	4	71	128	275	489	600	672	336
NO_2	4	62	78	148	214	259	319	157
CO	4	714	1093	2359	4387	5317	7262	2347
O_3	-	-	-	-	-	-	-	-

PM_{10}:	Monitoring method(s) used:	Teom (2 Stationen) ß-absorption (1 station)
	Correction factor for this method according to EU-directive 1999/30/EC):	variable 1.2 bis1.32
	Number of limit violations of the daily mean standard of 50 µg/m³ at the highest stressed station in 2005 (measured values **including** correction factor):	45
NO_2	Number of limit violations of the 1h mean standard of 200 µg/m³ at the highest stressed station in 2005:	15

1 arithmetic mean value of all monitoring stations of the affected area

2 max. value of all monitoring stations of the affected area

Comparison of The Air Quality in 2005

Innsbruck

	Number of monitoring stations	Annual mean value [1] [µg/m³]	max. monthly mean value [2] [µg/m³]	max. daily mean value [2] [µg/m³]	max. 3h mean value [2] [µg/m³]	max. 1h mean value [2] [µg/m³]	max. ½ h mean value [2] [µg/m³]	Max. 98-Percentile per year [µg/m³]
SO_2	1	5	14	24	37	-	49	-
PM_{10}	2	30	68	143	-	-	294	-
NO	2	44	111	287	-	-	654	-
NO_2	2	47	76	125	173	194	256	-
CO	1	500	1000	1500	2600	3100	3500	-
O_3	2	39	78	116	162	167	167	-

PM_{10}:	Monitoring method(s) used:	continuous
	Correction factor for this method according to EU-directive 1999/30/EC):	1.3
	Number of limit violations of the daily mean standard of 50 µg/m³ at the highest stressed station in 2005 (measured values **including** correction factor):	55
NO_2	Number of limit violations of the 1h mean standard of 200 µg/m³ at the highest stressed station in 2005:	0

Karlsruhe

	Number of monitoring stations	Annual mean value [1] [µg/m³]	max. monthly mean value [2] [µg/m³]	max. daily mean value [2] [µg/m³]	max. 3h mean value [2] [µg/m³]	max. 1h mean value [2] [µg/m³]	max. ½ h mean value [2] [µg/m³]	Max. 98-Percentile per [2,3] [µg/m³]
SO_2	1	-	7	23	-	70	-	-
PM_{10} *	2	24	37	91	-	297	-	-
NO	2	18	53	162	-	418	-	-
NO_2	2	31	45	92	-	151	-	-
CO	2	290	560	1100	-	3400	-	
O_3	2	39	78	128	-	218	-	-

PM_{10}:	Monitoring method(s) used:	gravimetrically, for *1-h-MW*: beta-absorption
	Correction factor for this method according to EU-directive 1999/30/EC):	
	Number of limit violations of the daily mean standard of 50 µg/m³ at the highest stressed station in 2005 (measured values **including** correction factor):	17
NO_2	Number of limit violations of the 1h mean standard of 200 µg/m³ at the highest stressed station in 2005:	0

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[1] arithmetic mean value of all monitoring stations of the affected area

[2] max. value of all monitoring stations of the affected area

Comparison of The Air Quality in 2005

Karlsruhe (traffic station)

	Number of monitoring stations	Annual mean value [1] [µg/m³]	max. monthly mean value [2] [µg/m³]	max. daily mean value [2] [µg/m³]	max. 3h mean value [2] [µg/m³]	max. 1h mean value [2] [µg/m³]	max. ½ h mean value [2] [µg/m³]	Max. 98-Percentile per year [µg/m³]
SO_2	-	-	-	-	-	-	-	-
PM_{10}	1	30	44	103	-	-		
NO	1	50	82	222	-	522	-	-
NO_2	1	58	69	110	-	193		
CO	1	740	1010	1830	-	4400	-	-
O_3	-	-	-	-	-	-	-	-

PM_{10}:	Monitoring method(s) used:	gravimetrically, for *1-h-MW*: beta-absorption
	Correction factor for this method according to EU-directive 1999/30/EC):	
	Number of limit violations of the daily mean standard of 50 µg/m³ at the highest stressed station in 2005 (measured values **including** correction factor):	22
NO_2	Number of limit violations of the 1h mean standard of 200 µg/m³ at the highest stressed station in 2005:	0

Klagenfurt

	Number of monitoring stations	Annual mean value [1] [µg/m³]	max. monthly mean value [2] [µg/m³]	max. daily mean value [2] [µg/m³]	max. 3h mean value [2] [µg/m³]	max. 1h mean value [2] [µg/m³]	max. ½ h mean value [2] [µg/m³]	Max. 98-Percentile per year [µg/m³]
SO_2	1	8	15	30	83	124	149	28
** TSP	2	31	60	105	371	500	549	126
* PM_{10}	2	32	65	123	-	-	-	-
NO	2	31	99	200	455	506	542	204
NO_2	2	35	66	106	186	203	214	106
CO	2	518	967	1726	3982	4219	4690	1806
O_3	2	41	84	122	157	162	162	125

PM_{10}:	Monitoring method(s) used:	Gravimetrically (Digitel HVS)
	Correction factor for this method according to EU-directive 1999/30/EC):	1.0
	Number of limit violations of the daily mean standard of 50 µg/m³ at the highest stressed station in 2005 (measured values **including** correction factor):	82
NO_2	Number of limit violations of the 1h mean standard of 200 µg/m³ at the highest stressed station in 2005:	1

* PM_{10}-values are monitored gravimetrically by means of high volume sampler, so smallest time unit is daily mean value

** Evaluation of TSP due to replacement by PM10 monitoring device only until middle of October

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[1] arithmetic mean value of all monitoring stations of the affected area

[2] max. value of all monitoring stations of the affeced area

Comparison of The Air Quality in 2005

Leeds

	Number of monitoring stations	Annual mean value [1] [µg/m³]	max. monthly mean value [2] [µg/m³]	max. daily mean value [2] [µg/m³]	max. 3h mean value [2] [µg/m³]	max. 1h mean value [2] [µg/m³]	max. ½ h mean value [2] [µg/m³]	Max. 98-Percentile per year [µg/m³]
SO_2	1	4	7	23	66	88	99	19
PM_{10}	1	27	31	80	217	399	-	57
NO	1	22	46	248	473	544	-	95
NO_2	1	32	41	67	117	162	-	55
CO	1	300	700	1300	3300	3600	-	900
O_3	1	35	54	86	121	122	-	80

PM_{10}:	Monitoring method(s) used:	TEOM
	Correction factor for this method according to EU-directive 1999/30/EC):	1.3
	Number of limit violations of the daily mean standard of 50 µg/m³ at the highest stressed station in 2005 (measured values **including** correction factor):	15
NO_2	Number of limit violations of the 1h mean standard of 200 µg/m³ at the highest stressed station in 2005:	0

Leipzig

	Number of monitoring stations	Annual mean value [1] [µg/m³]	max. monthly mean value [2] [µg/m³]	max. daily mean value [2] [µg/m³]	max. 3h mean value [2] [µg/m³]	max. 1h mean value [2] [µg/m³]	max. ½ h mean value [2] [µg/m³]	Max. 98-Percentile per year [µg/m³]
SO_2	1	3	6	17	33	44	48	13
PM_{10}	3	32	59	133	705	1711	2213	115
NO	3	28	65	135	317	491	682	159
NO_2	3	39	58	86	142	186	276	99
CO	1	700	900	1500	2600	3700	4000	1700
O_3	1	48	67	102	171	174	177	122

PM_{10}:	Monitoring method(s) used:	Gravimetrically (High-Volume-Sampler)
	Correction factor for this method according to EU-directive 1999/30/EC):	1.0
	Number of limit violations of the daily mean standard of 50 µg/m³ at the highest stressed station in 2005 (measured values **including** correction factor):	82
NO_2	Number of limit violations of the 1h mean standard of 200 µg/m³ at the highest stressed station in 2005:	0

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1 arithmetic mean value of all monitoring stations of the affected area

2 max. value of all monitoring stations of the affected area

Region Leoben (Leoben, Donawitz, Göß)

	Number of monitoring stations	Annual mean value [1] [µg/m³]	max. monthly mean value [2] [µg/m³]	max. daily mean value [2] [µg/m³]	max. 3h mean value [2] [µg/m³]	max. 1h mean value [2] [µg/m³]	max. ½ h mean value [2] [µg/m³]	Max. 98-Percentile per year [µg/m³]
SO_2	3	4	9	20	66	79	90	21
TSP	1 *	-	-	-	-	-	-	-
PM_{10}	3 **	28	41	92	191	233	403	88
NO	3	16	55	140	264	305	356	142
NO_2	3	25	49	88	115	126	128	82
CO	1	800	1100	4400	7600	9600	11300	3700
O_3	1	39	70	106	151	156	158	122

PM_{10}:	Monitoring method(s) used:	continuous
	Correction factor for this method according to EU-directive 1999/30/EC):	1.3
	Number of limit violations of the daily mean standard of 50 µg/m³ at the highest stressed station in 2005 (measured values **including** correction factor):	36
NO_2	Number of limit violations of the 1h mean standard of 200 µg/m³ at the highest stressed station in 2005:	-

* TSP at station Leoben was only monitored until 13/6/2005, since then monitoring of PM_{10}.

** max. 3h-mean = gliding, max. 1h-mean = not gliding

Linz

	Number of monitoring stations	Annual mean value [1] [µg/m³]	max. monthly mean value [2] [µg/m³]	max. daily mean value [2] [µg/m³]	max. 3h mean value [2] [µg/m³]	max. 1h mean value [2] [µg/m³]	max. ½ h mean value [2] [µg/m³]	Max. 98-Percentile per year [µg/m³]
SO_2	6	4	8	26	66	138	138	30
PM_{10}	6	31	54	171	474	1192	1242	116
NO	8	23	61	266	456	571	594	208
NO_2	8	34	63	138	177	202	227	121
CO	8	442	800	2000	4000	5509	7100	1769
O_3	3	46	77	121	158	160	161	128

PM_{10}:	Monitoring method(s) used:	continuous
	Correction factor for this method according to EU-directive 1999/30/EC):	1.15 – 1.20
	Number of limit violations of the daily mean standard of 50 µg/m³ at the highest stressed station in 2005 (measured values **including** correction factor):	68
NO_2	Number of limit violations of the 1h mean standard of 200 µg/m³ at the highest stressed station in 2005:	1

[1] arithmetic mean value of all monitoring stations of the affected area

[2] max. value of all monitoring stations of the affected area

Comparison of The Air Quality in 2005

Lisbon

	Number of monitoring stations	Annual mean value [1] [µg/m³]	max. monthly mean value [2] [µg/m³]	max. daily mean value [2] [µg/m³]	max. 3h mean value [2] [µg/m³]	max. 1h mean value [2] [µg/m³]	max. ½ h mean value [2] [µg/m³]	Max. 98-Percentile per year [µg/m³]
SO_2	5	3	7	24	-	196	-	* 13
PM_{10}	3	43	76	260	-	558	-	* 114
NO	7	29	159	377	-	974	-	** 262
NO_2	7	40	76	175	-	430	-	** 156
CO	7	373	959	1912	-	5378	-	1661
O_3	4	50	81	130	-	225	-	** 125

PM_{10}:	Monitoring method(s) used:	ß-absorption
	Correction factor for this method according to EU-directive 1999/30/EC):	1.18 – traffic stations 1.11 – background
	Number of limit violations of the daily mean standard of 50 µg/m³ at the highest stressed station in 2005 (measured values **including** correction factor):	180
NO_2	Number of limit violations of the 1h mean standard of 200 µg/m³ at the highest stressed station in 2005:	35

* max. 98-percentile of 1 daily mean values
** max. 98-percentile of 1 h mean value
*** max. 98-percentile of 8 h mean value

Liverpool

	Number of monitoring stations	Annual mean value [1] [µg/m³]	max. monthly mean value [2] [µg/m³]	max. daily mean value [2] [µg/m³]	max. 3h mean value [2] [µg/m³]	max. 1h mean value [2] [µg/m³]	max. ½ h mean value [2] [µg/m³]	Max. 98-Percentile per year [µg/m³]
SO_2	1	5	8	23	77	116	129	30
PM_{10}	1	20	24	57	91	118	-	52
NO	1	17	36	115	391	471	-	203
NO_2	1	24	35	92	138	149	-	73
CO	1	200	300	1300	2300	3200	-	600
O_3	1	47	70	91	119	124	-	92

PM_{10}:	Monitoring method(s) used:	TEOM
	Correction factor for this method according to EU-directive 1999/30/EC):	1.3
	Number of limit violations of the daily mean standard of 50 µg/m³ at the highest stressed station in 2005 (measured values **including** correction factor):	5
NO_2	Number of limit violations of the 1h mean standard of 200 µg/m³ at the highest stressed station in 2005:	0

[1] arithmetic mean value of all monitoring stations of the affected area
[2] max. value of all monitoring stations of the affected area

Comparison of The Air Quality in 2005

London

	Number of monitoring stations	Annual mean value [1] [µg/m³]	max. monthly mean value [2] [µg/m³]	max. daily mean value [2] [µg/m³]	max. 3h mean value [2] [µg/m³]	max. 1h mean value [2] [µg/m³]	max. ½ h mean value [2] [µg/m³]	Max. 98-Percentile per year [µg/m³]
SO_2	13	5	10	40	104	150	177	32
PM_{10}	11	28	49	112	207	363	-	95
NO	23	39	154	432	800	936	-	395
NO_2	23	52	139	223	428	525	-	256
CO	17	488	1200	3100	13900	14600	-	2600
O_3	15	33	71	103	192	192	-	104

PM_{10}:	Monitoring method(s) used:	TEOM
	Correction factor for this method according to EU-directive 1999/30/EC):	1.3
	Number of limit violations of the daily mean standard of 50 µg/m³ at the highest stressed station in 2005 (measured values **including** correction factor):	121
NO_2	Number of limit violations of the 1h mean standard of 200 µg/m³ at the highest stressed station in 2005:	835 *

* Marylebone Road (traffic station)

Lyon (Urban site)

	Number of monitoring stations	Annual mean value [1] [µg/m³]	max. monthly mean value [2] [µg/m³]	max. daily mean value [2] [µg/m³]	max. 3h mean value [2] [µg/m³]	max. 1h mean value [2] [µg/m³]	max. ½ h mean value [2] [µg/m³]	Max. 98-Percentile per year [µg/m³]
SO_2	7	6	11	73	-	285	-	45
PM_{10}	4	25	33	81	-	153	-	107
NO	5	22	70	277	-	844	-	228
NO_2	37	36	66	114	-	203	-	108
CO	-	-	-	-	-	-	-	-
O_3	6	44	83	148	-	233	-	143

PM_{10}:	Monitoring method(s) used:	
	Correction factor for this method according to EU-directive 1999/30/EC):	
	Number of limit violations of the daily mean standard of 50 µg/m³ at the highest stressed station in 2005 (measured values **including** correction factor):	26
NO_2	Number of limit violations of the 1h mean standard of 200 µg/m³ at the highest stressed station in 2005:	1

[1] arithmetic mean value of all monitoring stations of the affected area
[2] max. value of all monitoring stations of the affected area

Comparison of The Air Quality in 2005

Lyon (traffic site)

	Number of monitoring stations	Annual mean value [1] [µg/m³]	max. monthly mean value [2] [µg/m³]	max. daily mean value [2] [µg/m³]	max. 3h mean value [2] [µg/m³]	max. 1h mean value [2] [µg/m³]	max. ½ h mean value [2] [µg/m³]	Max. 98-Percentile per year [µg/m³]
SO_2	1	6	11	71	-	284	-	26
PM_{10}	4	30	56	121	-	271	-	107
NO	7	61	194	439	-	1240	-	458
NO_2	7	97	154	161	-	266	-	180
CO	5	686	1449	3049	-	7526	-	2980
O_3	-	-	-	-	-	-	-	-

PM_{10}:	Monitoring method(s) used:	
	Correction factor for this method according to EU-directive 1999/30/EC):	
	Number of limit violations of the daily mean standard of 50 µg/m³ at the highest stressed station in 2005 (measured values **including** correction	153
NO_2	Number of limit violations of the 1h mean standard of 200 µg/m³ at the highest stressed station in 2005:	126

Madrid

	Number of monitoring stations	Annual mean value [1] [µg/m³]	max. monthly mean value [2] [µg/m³]	max. daily mean value [2] [µg/m³]	** max. 3h mean value [2] [µg/m³]	max. 1h mean value [2] [µg/m³]	max. ½ h mean value [2] [µg/m³]	*** Max. 98-Percentile per year [µg/m³]
SO_2	26	12	40	67	113	151	-	63
PM_{10}*	25	34	77	188	260	418	-	158
NO	26	37	138	276	798	933	-	425
NO_2	26	62	118	178	376	420	-	188
CO	24	660	2150	3340	8090	9350	-	3760
O_3	25	35	81	109	165	167	-	123

PM_{10}:	Monitoring method(s) used:	Oscillating microbalance
	Correction factor for this method according to EU-directive 1999/30/EC):	1.1
	Number of limit violations of the daily mean standard of 50 µg/m³ at the highest stressed station in 2005 (measured values **including** correction factor):	159 Percentile 90.1=90,6
NO_2	Number of limit violations of the 1h mean standard of 200 µg/m³ at the highest stressed station in 2005:	122 Percentile 99.8=303.3

* Gravimetric method only

** Static average (not moving average)

*** Maximum 98 percentile of 1-hour values

[1] arithmetic mean value of all monitoring stations of the affected area

[2] max. value of all monitoring stations of the affected area

Comparison of The Air Quality in 2005

Mannheim

	Number of monitoring stations	Annual mean value [1] [µg/m³]	max. monthly mean value [2] [µg/m³]	max. daily mean value [2] [µg/m³]	max. 3h mean value [2] [µg/m³]	max. 1h mean value [2] [µg/m³]	max. ½ h mean value [2] [µg/m³]	Max. 98-Percentile per year [µg/m³]
SO_2	3	6,7	11	30	-	192	-	-
PM_{10}	3	25	37	100	-	141	-	-
NO	3	17	49	194	-	492	-	-
NO_2	3	34	45	94	-	146	-	-
CO	3	220	440	1250	-	2300	-	-
O_3	3	39	74	116	-	199	-	-

PM_{10}:	Monitoring method(s) used:	Gravimetrically, for 1*h-mean*: beta-absorption
	Correction factor for this method according to EU-directive 1999/30/EC):	
	Number of limit violations of the daily mean standard of 50 µg/m³ at the highest stressed station in 2005 (measured values **including** correction factor):	22
NO_2	Number of limit violations of the 1h mean standard of 200 µg/m³ at the highest stressed station in 2005:	0

Mannheim (traffic station)

	Number of monitoring stations	Annual mean value [1] [µg/m³]	max. monthly mean value [2] [µg/m³]	max. daily mean value [2] [µg/m³]	max. 3h mean value [2] [µg/m³]	max. 1h mean value [2] [µg/m³]	max. ½ h mean value [2] [µg/m³]	Max. 98-Percentile per year [µg/m³]
SO_2	-	-	-	-	-	-	-	-
PM_{10}	1	32	43	116	-	-	-	-
NO	1	43	81	265	-	512	-	-
NO_2	1	52	65	107	-	176	-	-
CO	1	560	810	1760	-	3300	-	-
O_3	3	39	74	116	-	199	-	-

PM_{10}:	Monitoring method(s) used:	Gravimetrically, for 1*h-mean*: beta-absorption
	Correction factor for this method according to EU-directive 1999/30/EC):	
	Number of limit violations of the daily mean standard of 50 µg/m³ at the highest stressed station in 2005 (measured values **including** correction factor):	43
NO_2	Number of limit violations of the 1h mean standard of 200 µg/m³ at the highest stressed station in 2005:	0

[1] arithmetic mean value of all monitoring stations of the affected area
[2] max. value of all monitoring stations of the affected area

Comparison of The Air Quality in 2005

Milan

	Number of monitoring stations	Annual mean value [1] [µg/m³]	max. monthly mean value [2] [µg/m³]	max. daily mean value [2] [µg/m³]	max. 3h mean value [2] [µg/m³]	max. 1h mean value [2] [µg/m³]	max. ½ h mean value [2] [µg/m³]	Max. 98-Percentile per year [µg/m³]
SO_2	1	8	20	42	-	96	-	35
TSP	1	48	66	127	-	-	-	131
PM_{10}	2	53	97	203	-	370	-	143
NO	8	53	189	320	-	1130	-	347
NO_2	8	60	98	151	-	273	-	158
CO	5	1200	2400	5400	-	7800	-	-
O_3	3	34	80	212	-	212	-	129

PM_{10}:	Monitoring method(s) used:	TEOM
	Correction factor for this method according to EU-directive 1999/30/EC):	**1.18** (from 1.00 in July to **1.35** in January)
	Number of limit violations of the daily mean standard of 50 µg/m³ at the highest stressed station in 2005 (measured values **including** correction factor):	152
NO_2	Number of limit violations of the 1h mean standard of 200 µg/m³ at the highest stressed station in 2005:	25

	Number of monitoring stations	Annual mean value [1] [µg/m³]	max. monthly mean value [2] [µg/m³]	max. daily mean value [2] [µg/m³]	max. 3h mean value [2] [µg/m³]	max. 1h mean value [2] [µg/m³]	max. ½ h mean value [2] [µg/m³]	Max. 98-Percentile per year [µg/m³]
PM_{10} grav.	1	59	95	246	-	-	-	147
$PM_{2,5}$ TEOM	1	40	104	199	-	-	-	121
$PM_{2,5}$ grav.	1	34	55	131	-	-	-	93
Benzene	2	2.9	7.2	10.6	-	21.8	-	-

PM_{10}:	Monitoring method(s) used:	Gravimetrical monitoring
	Correction factor for this method according to EU-directive 1999/30/EC):	1.0
	Number of limit violations of the daily mean standard of 50 µg/m³ at the highest stressed station in 2005 (measured values **including** correction factor):	164

For SO_2, TSP, PM_{10} TEOM and Gravimetric, $PM_{2.5}$ TEOM and Gravimetric max 98° percentile per year of the average 24 hour concentrations levels

For NO, NO_2, O_3 max 98° percentile per year of the average 1 hour concentrations levels
Correction factor for PM_{10}: January 1.35, February 1.33, March 1.26, April 1.18, May 1.09, June 1.02, July 1.00, August 1.02, September 1.09, October 1.17, November 1.26, December 1.33.

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[1] arithmetic mean value of all monitoring stations of the affected area

[2] max. value of all monitoring stations of the affected area

Comparison of The Air Quality in 2005

Munich

	Number of monitoring stations	Annual mean value [1] [µg/m³]	max. monthly mean value [2] [µg/m³]	max. daily mean value [2] [µg/m³]	max. 3h mean value [2] [µg/m³]	max. 1h mean value [2] [µg/m³]	max. ½ h mean value [2] [µg/m³]	Max. 98-Percentile per year [µg/m³]
SO_2	4	4	8	24	48	60	61	17
PM_{10}	6	32	62	124	240	382	396	94
NO	7	51	160	376	656	815	887	407
NO_2	7	60	101	173	262	335	354	177
CO	6	600	1100	2600	5600	6800	8300	2400
O_3	3	38	69	110	183	192	195	119

PM_{10}:	Monitoring method(s) used:	β-absorption
	Correction factor for this method according to EU-directive 1999/30/EC):	1.25
	Number of limit violations of the daily mean standard of 50 µg/m³ at the highest stressed station in 2005 (measured values **including** correction factor):	107
NO_2	Number of limit violations of the 1h mean standard of 200 µg/m³ at the highest stressed station in 2005:	35

Riga

	Number of monitoring stations	Annual mean value [1] [µg/m³]	max. monthly mean value [2] [µg/m³]	max. daily mean value [2] [µg/m³]	max. 3h mean value [2] [µg/m³]	max. 1h mean value [2] [µg/m³]	max. ½ h mean value [2] [µg/m³]	**Max. 98-Percentile per year [µg/m³]
SO_2	3	7	11	22	53	76	84	21
*PM_{10}	1	48	74	166	245	346	461	149
NO	-	-	-	-	-	-	-	-
NO_2	3	28	52	93	155	178	183	81
*CO	1	900	1500	2600	4800	5700	6100	3000
O_3	3	41	64	85	94	96	104	78

PM_{10}:	Monitoring method(s) used:	beta absorption
	Correction factor for this method according to EU-directive 1999/30/EC):	1.0
	Number of limit violations of the daily mean standard of 50 µg/m³ at the highest stressed station in 2005 (measured values **including** correction factor):	* 88
NO_2	Number of limit violations of the 1h mean standard of 200 µg/m³ at the highest stressed station in 2005:	0

* traffic monitoring stations
** 98%-value of the hour's means

[1] arithmetic mean value of all monitoring stations of the affected area
[2] max. value of all monitoring stations of the affected area

Comparison of The Air Quality in 2005

Rhine / Ruhr area

	Number of monitoring stations	Annual mean value [1] [µg/m³]	max. monthly mean value [2] [µg/m³]	max. daily mean value [2] [µg/m³]	max. 3h mean value [2] [µg/m³]	max. 1h mean value [2] [µg/m³]	max. ½ h mean value [2] [µg/m³]	Max. 98-Percentile per year [µg/m³]
SO_2	16	7	-	-	-	702	-	39
PM_{10}	27	25	-	-	-	-	-	-
NO	26	15	-	-	-	635	-	113
NO_2	26	31	-	-	-	177	-	72
CO	1	400	-	-	-	-	-	1600
O_3	18	35	-	-	-	248	-	113

PM_{10}:	Monitoring method(s) used:	1) Beta-absorption, 2) Oscillating micro balance
	Correction factor for this method according to EU-directive 1999/30/EC):	
	Number of limit violations of the daily mean standard of 50 µg/m³ at the highest stressed station in 2005 (measured values **including** correction factor):	
NO_2	Number of limit violations of the 1h mean standard of 200 µg/m³ at the highest stressed station in 2005:	0

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[1] arithmetic mean value of all monitoring stations of the affected area

[2] max. value of all monitoring stations of the affected area

reference temperature for gaseous substances: 20 °C

Without traffic-influenced measurements and other special monitoring activities

The statistical parameters for PM_{10} are based on continuous measurements.

Comparison of The Air Quality in 2005

Rotterdam

	Number of monitoring stations	Annual mean value [1] [µg/m³]	max. monthly mean value [2] [µg/m³]	max. daily mean value [2] [µg/m³]	max. 3h mean value [2] [µg/m³]	max. 1h mean value [2] [µg/m³]	max. ½ h mean value [2] [µg/m³]	Max. 98-Percentile per year [µg/m³]
SO_2	9	14	24	127	-	429	-	73
TSP	5	31	46	312	-	-	-	80
PM_{10}	5	29	39	121	-	754	-	77
NO	6	30	88	-	-	792	-	237
NO_2	6	45	61	-	-	203	-	109
CO	2	583	804	-	-	5489	-	1608
O_3	5	37	63		-	253	-	106

PM_{10}:	Monitoring method(s) used:	TEOM with SES unit at 30 °C
	Correction factor for this method according to EU-directive 1999/30/EC):	1.3
	Number of limit violations of the daily mean standard of 50 µg/m³ at the highest stressed station in 2005 (measured values **including** correction factor):	30
NO_2	Number of limit violations of the 1h mean standard of 200 µg/m³ at the highest stressed station in 2005:	1

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[1] arithmetic mean value of all monitoring stations of the affected area

[2] max. value of all monitoring stations of the affected area

Comparison of The Air Quality in 2005

Salzburg

	Number of monitoring stations	Annual mean value [1] [µg/m³]	max. monthly mean value [2] [µg/m³]	max. daily mean value [2] [µg/m³]	max. 3h mean value [2] [µg/m³]	max. 1h mean value [2] [µg/m³]	max. ½ h mean value [2] [µg/m³]	Max. 98-Percentile per year [µg/m³]
SO_2	3	4,5	8	19	53	83	101	15,7
PM_{10}	3	27,7	43	91	-	-	-	73
NO	3	35,1	108	228	419	503	657	245
NO_2	3	41,7	72	113	159	180	203	122
CO	2	485	870	1500	2370	2730	3320	1590
O_3	2	42	-	117	170	171	179	121

PM_{10}:	Monitoring method(s) used:	2x gravimetrically / 1x TEOM
	Correction factor for this method according to EU-directive 1999/30/EC):	1.19 (TEOM)
	Number of limit violations of the daily mean standard of 50 µg/m³ at the highest stressed station in 2005 (measured values **including** correction factor):	39
NO_2	Number of limit violations of the 1h mean standard of 200 µg/m³ at the highest stressed station in 2005:	0

comments:
Location of the monitoring stations:
- One monitoring station heavily traffically influenced
- One monitoring station in business area
- One monitoring station in residential area

Sofia

	Number of monitoring stations	Annual mean value [1] [µg/m³]	max. monthly mean value [2] [µg/m³]	max. daily mean value [2] [µg/m³]	max. 3h mean value [2] [µg/m³]	max. 1h mean value [2] [µg/m³]	max. ½ h mean value [2] [µg/m³]	Max. 98-Percentile per year [µg/m³]
SO_2	5	16	25	132	-	356	-	97
TSP	1	86	127	380	-	-	-	-
PM_{10}	5	60	123	910	-	-	-	408
NO	4	34	86	-	-	-	-	-
NO_2	5	29	45	237	-	385	-	189
CO	4	1495	2527	11200(8h)	-	-	-	-
O_3	3	39	58	110	-	177	-	111

PM_{10}:	Monitoring method(s) used:	EN12341 – gravimetric method and β - absorption
	Correction factor for this method according to EU-directive 1999/30/EC):	1.3
	Number of limit violations of the daily mean standard of 50 µg/m³ at the highest stressed station in 2005 (measured values **including** correction factor):	162
NO_2	Number of limit violations of the 1h mean standard of 200 µg/m³ at the highest stressed station in 2005:	25

[1] arithmetic mean value of all monitoring stations of the affected area
[2] max. value of all monitoring stations of the affected area

Comparison of The Air Quality in 2005

St. Pölten

	Number of monitoring stations	Annual mean value [1] [µg/m³]	max. monthly mean value [2] [µg/m³]	max. daily mean value [2] [µg/m³]	max. 3h mean value [2] [µg/m³]	max. 1h mean value [2] [µg/m³]	max. ½ h mean value [2] [µg/m³]	Max. 98-Percentile per year [µg/m³]
SO_2	1	4	7	23	55	75	87	37
PM_{10}	2	34	61	124	204	227	250	159
NO	2	23	68	138	405	419	451	279
NO_2	2	32	50	95	154	164	166	117
CO	1	490	730	1570	2670	3120	3460	1790
O_3	1	48	72	111	142	183	190	142

PM_{10}:	Monitoring method(s) used:	oscillating micro balance
	Correction factor for this method according to EU-directive 1999/30/EC):	1.3
	Number of limit violations of the daily mean standard of 50 µg/m³ at the highest stressed station in 2005 (measured values **including** correction factor):	87
NO_2	Number of limit violations of the 1h mean standard of 200 µg/m³ at the highest stressed station in 2005:	0

Stockholm

	Number of monitoring stations	Annual mean value [1] [µg/m³]	max. monthly mean value [2] [µg/m³]	max. daily mean value [2] [µg/m³]	max. 3h mean value [2] [µg/m³]	max. 1h mean value [2] [µg/m³]	max. ½ h mean value [2] [µg/m³]	Max. 98-Percentile per year [µg/m³]
SO_2	2	1	3		-		-	-
PM_{10}	4	36	107	245	-	712	-	-
NO	-	-	-	-	-	-	-	-
NO_2	4	43	62	97	-	224	-	
CO	1	600	700	?	-	?	-	-
O_3	1	52	73	109	-	120	-	-

PM_{10}:	Monitoring method(s) used:	TEOM
	Correction factor for this method according to EU-directive 1999/30/EC):	1.2
	Number of limit violations of the daily mean standard of 50 µg/m³ at the highest stressed station in 2005 (measured values **including** correction factor):	80
NO_2	Number of limit violations of the 1h mean standard of 200 µg/m³ at the highest stressed station in 2005:	2

SO_2: passive sampler, roof level city centre + urban area
PM10, NO, NO_2, CO: street level city centre
O_3: roof level city centre

[1] arithmetic mean value of all monitoring stations of the affected area
[2] max. value of all monitoring stations of the affected area

Comparison of The Air Quality in 2005

Villach

	Number of monitoring stations	Annual mean value [1] [µg/m³]	max. monthly mean value [2] [µg/m³]	max. daily mean value [2] [µg/m³]	max. 3h mean value [2] [µg/m³]	max. 1h mean value [2] [µg/m³]	max. ½ h mean value [2] [µg/m³]	Max. 98-Percentile per year [µg/m³]
SO_2	1	5	7	12	25	26	28	13
TSP**	1	32	43	123	409	580	683	93
PM_{10}	1	29	43	71	*	*	*	*
NO	1	30	62	158	242	316	357	144
NO_2	1	32	49	76	117	143	158	82
CO	1	433	863	1372	2779	3188	3628	1620
O_3	1	31	63	96	161	168	169	111

PM_{10}:	Monitoring method(s) used:	Gravimetrically (Digitel HVS)
	Correction factor for this method according to EU-directive 1999/30/EC):	1.0
	Number of limit violations of the daily mean standard of 50 µg/m³ at the highest stressed station in 2005 (measured values **including** correction factor):	29
NO_2	Number of limit violations of the 1h mean standard of 200 µg/m³ at the highest stressed station in 2005:	0

* PM_{10}-values are monitored gravimetrically by means of high volume sampler, so smallest time unit is daily mean value

** Evaluation of TSP due to replacement by PM10 monitoring device only until middle of October

Warsaw

	Number of monitoring stations	Annual mean value [1] [µg/m³]	max. monthly mean value [2] [µg/m³]	max. daily mean value [2] [µg/m³]	max. 3h mean value [2] [µg/m³]	max. 1h mean value [2] [µg/m³]	max. ½ h mean value [2] [µg/m³]	Max. 98-Percentile per [2,3] [µg/m³]
SO_2	11	8,7	29	107	-	234	-	64
PM_{10}	11	36	67	162	-	397	-	118
NO	8	15,5	107	287	-	624	-	203
NO_2	10	25	75	121	-	191	-	107
CO	5	655	1547	3369	-	8773	-	2341
O_3	4	45,5	75	124	-	189	-	99

[1]

PM_{10}:	Monitoring method(s) used:	automatic TEOM 1400, 1 station manual gravimetric method, radiometric method
	Correction factor for this method according to EU-directive 1999/30/EC):	TEOM-factor 1.15 Beta monitoring factor 1.3
	Number of limit violations of the daily mean standard of 50 µg/m³ at the highest stressed station in 2005 (measured values **including** correction factor):	162
NO_2	Number of limit violations of the 1h mean standard of 200 µg/m³ at the highest stressed station in 2005:	0

Comments: Maximum concentration NO, NO_2, CO occurred on traffic hot-spot station

[1] arithmetic mean value of all monitoring stations of the affected area

[2] max. value of all monitoring stations of the affected area

Comparison of The Air Quality in 2005

Vienna

	Number of monitoring stations	Annual mean value [1] [µg/m³]	max. monthly mean value [2] [µg/m³]	max. daily mean value [2] [µg/m³]	max. 99,9 Percentile 3h-mean value [2] [µg/m³]	max. 99,9 Percentile 1h-mean value [2] [µg/m³]	max. 99,9 Percentile 1/2h-mean value [2] [µg/m³]	Max. 98-Percentile per year [µg/m³]
SO_2	10	4	14	64	91	98	103	34
PM_{10}	13	31	59	151	212	197	200	104
NO	17	19	186	400	605	648	682	428
NO_2	17	33	87	174	203	212	216	172
CO	4	500	900	1800	2400	3600	2700	1800
O_3	5	54	95	135	183	193	193	133

PM_{10}:	Monitoring method(s) used:	gravimetrically (9 stations), **continuously** (ß-absorption, 2 stations)
	Correction factor for this method according to EU-directive 1999/30/EC):	calculated every quarter for each of the monitoring stations
	Number of limit violations of the daily mean standard of 50 µg/m³ at the highest stressed station in 2005 (measured values **including** correction factor):	92
NO_2	Number of limit violations of the 1h mean standard of 200 µg/m³ at the highest stressed station in 2005:	24

comments:
PM_{10}: No short time values mentioned due, because mostly the gravimetrical monitoring method was uses! Instead of short time maxima again **99.9 % percentiles** are mentioned in order to filter out the highest outliers (have to be explained, New Years Eve's fireworks). The short time percentiles were calculated glidingly from ½h mean values.
For each PM_{10} station, which measures only continuously, in every quarter of the year a new factor is calculated (factor with offset).

The 1h-percentile for TSP is – in comparison with the 1/2h mean percentile really a bit higher, because this was a result of a calculative rounding due to a the less number of valid 1h mean values.

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[1] arithmetic mean value of all monitoring stations of the affected area
[2] max. value of all monitoring stations of the affected area

Comparison of The Air Quality in 2005

Wiesbaden (urban stations)

	Number of monitoring stations	Annual mean value [1] [µg/m³]	max. monthly mean value [2] [µg/m³]	max. daily mean value [2] [µg/m³]	max. 3h mean value [2] [µg/m³]	max. 1h mean value [2] [µg/m³]	max. ½ h mean value [2] [µg/m³]	Max. 98-Percentile per year [µg/m³]
SO_2	1	4	5	12	22	23	24	10
PM_{10}	1	24	34	71	142	222	244	64
NO	1	18	37	147	381	478	494	126
NO_2	1	36	44	81	110	136	144	89
CO	1	400	500	1200	2300	3300	5200	1000
O_3	1	37	71	110	196	217	223	132

PM_{10}:	Monitoring method(s) used:	ß-absorption
	Correction factor for this method according to EU-directive 1999/30/EC):	1.0
	Number of limit violations of the daily mean standard of 50 µg/m³ at the highest stressed station in 2005 (measured values **including** correction factor):	10
NO_2	Number of limit violations of the 1h mean standard of 200 µg/m³ at the highest stressed station in 2005:	0

Wiesbaden (traffic station)

	Number of monitoring stations	Annual mean value [1] [µg/m³]	max. monthly mean value [2] [µg/m³]	max. daily mean value [2] [µg/m³]	max. 3h mean value [2] [µg/m³]	max. 1h mean value [2] [µg/m³]	max. ½ h mean value [2] [µg/m³]	Max. 98-Percentile per year [µg/m³]
SO_2	-	-	-	-	-	-	-	-
PM_{10}	1	26	39	87	288	422	445	68
NO	1	68	98	223	457	560	619	250
NO_2	1	64	75	120	180	232	265	133
CO	1	900	1100	2000	4400	6100	6900	2600
O_3	-	-	-	-	-	-	-	-

[1]

PM_{10}:	Monitoring method(s) used:	ß-absorption
	Correction factor for this method according to EU-directive 1999/30/EC):	1.0
	Number of limit violations of the daily mean standard of 50 µg/m³ at the highest stressed station in 2005 (measured values **including** correction factor):	18
NO_2	Number of limit violations of the 1h mean standard of 200 µg/m³ at the highest stressed station in 2005:	3

[1] arithmetic mean value of all monitoring stations of the affected area
[2] max. value of all monitoring stations of the affected area

Comparison of The Air Quality in 2005

Zagreb

	Number of monitoring stations	Annual mean value [1] [µg/m³]	max. monthly mean value [2] [µg/m³]	max. daily mean value [2] [µg/m³]	max. 3h mean value [2] [µg/m³]	max. 1h mean value [2] [µg/m³]	max. ½ h mean value [2] [µg/m³]	Max. 98-Percentile per year [µg/m³]
SO_2	5	4	17	51	-	117	-	27
TSP	5	41	72	236	-	709	-	135
PM_{10}	2	45	89	223	-	-	-	158
NO	-	-	-	-	-	-	-	-
NO_2	5	42	56	122	-	175	-	81
CO	1	780	1900	4730	-	10320	-	-
O_3	5	30	95	168	-	183	-	108

[1]

PM_{10}:	Monitoring method(s) used:	
	Correction factor for this method according to EU-directive 1999/30/EC):	
	Number of limit violations of the daily mean standard of 50 µg/m³ at the highest stressed station in 2005 (measured values **including** correction factor):	89
NO_2	Number of limit violations of the 1h mean standard of 200 µg/m³ at the highest stressed station in 2005:	-

Zurich

	Number of monitoring stations	Annual mean value [1] [µg/m³]	max. monthly mean value [2] [µg/m³]	max. daily mean value [2] [µg/m³]	max. 3h mean value [2] [µg/m³]	max. 1h mean value [2] [µg/m³]	max. ½ h mean value [2] [µg/m³]	Max. 98-Percentile per year [µg/m³]
SO_2	1	4	7	20	36	39	40	25
PM_{10}	1	24	33	71	256	650	1172	81
NO	1	14	38	97	255	274	289	161
NO_2	1	34	41	85	104	114	115	98
CO	1	420	570	980	1750	3370	5660	1260
O_3	1	45	80	117	207	210	214	163

PM_{10}:	Monitoring method(s) used:	β-meter-measurement, calibrated with gravimetrical measurements every 4 days
	Correction factor for this method according to EU-directive 1999/30/EC):	-
	Number of limit violations of the daily mean standard of 50 µg/m³ at the highest stressed station in 2005 (measured values **including** correction factor):	15
NO_2	Number of limit violations of the 1h mean standard of 200 µg/m³ at the highest stressed station in 2005:	0

[1] arithmetic mean value of all monitoring stations of the affected area
[2] max. value of all monitoring stations of the affected area