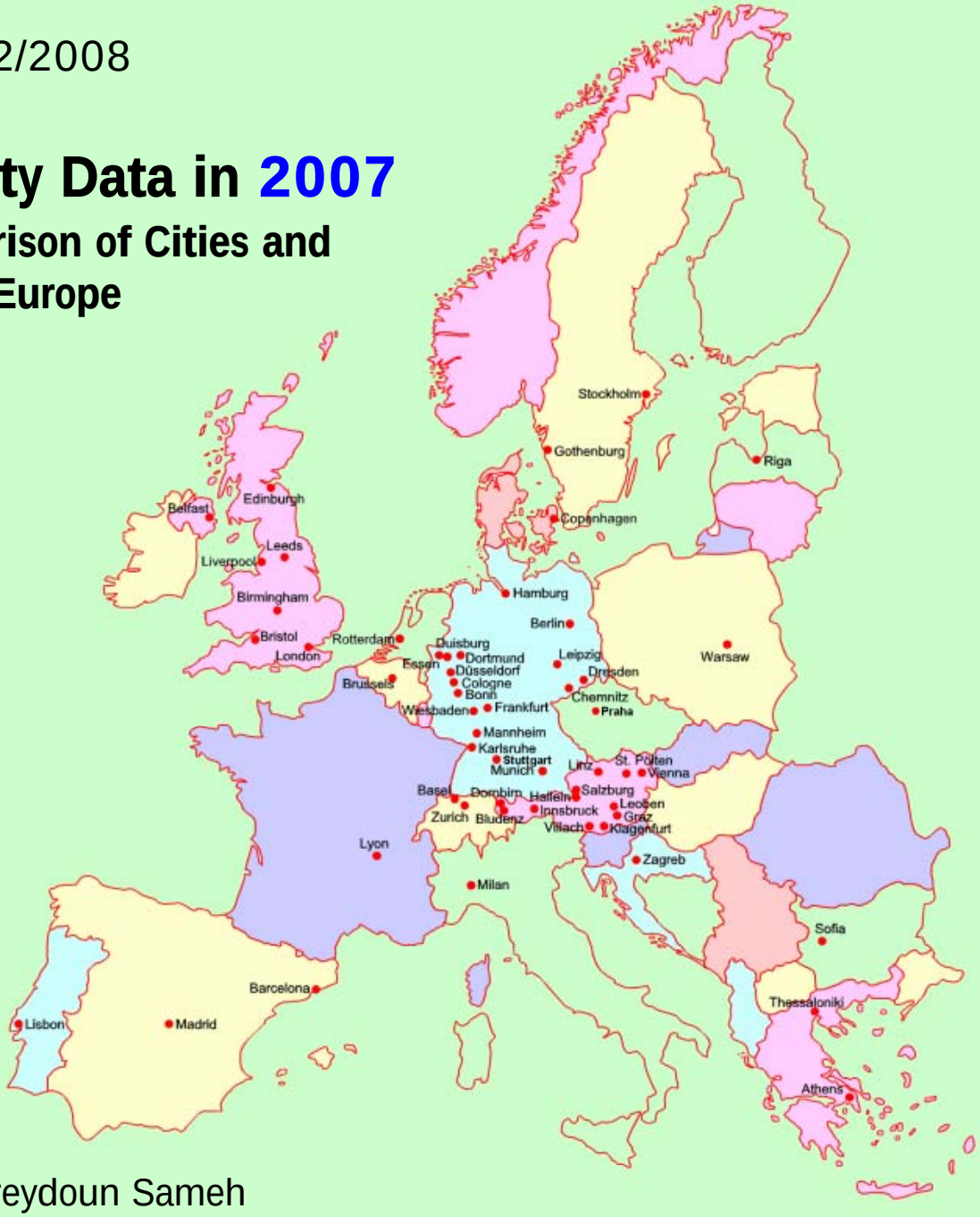
Publisher:
MUNICIPALITY OF LINZ
Dept. „Environmental and Technical Center“
Hauptstrasse 1 – 5
A-4041 Linz
e-mail: utc@mag.linz.at
Tel.: +43 (732) 7070 – 3901
Fax: +43 (732) 7070 – 2699

Report Nr. 2/2008

Air Quality Data in 2007

The Comparison of Cities and Regions in Europe



Authors: Fereydoun Sameh
Judith Kreindl
Wilfried Hager

Environment + Technics

Linz verändert

Inhalt

Contents

Luftgütedaten 2007 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 2007 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 organisations concerned with environmental affairs, such as national and local authorities. In the form of regional or national air-cleaning programmes one tries 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 monitored areas air quality monitoring station networks have been being 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 2007 wurden Städte bzw. Regionen aus Deutschland, England, Frankreich, Belgien, Niederlande, Dänemark, Schweden, Italien, Schweiz, Spanien, Portugal, Polen, Bulgarien, Tschechien, Griechenland, Lettland und Kroatien mit einbezogen. Erstmals lieferten die Städte Athen und Thessaloniki Daten. Die Luftgütedaten von Stuttgart und Prag wurden heuer zusätzlich in die Statistik aufgenommen. Die Städte Luxemburg und Budapest lieferten erneut keine Daten.

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 2007 comprised cities and regions of Austria, Germany, cities from England, France, Belgium, Netherlands, Denmark, Sweden, Italy, Switzerland, Spain, Portugal, Poland, Bulgaria, Czech Republic, Greek, Latvia and Croatia. For the first time Athens and Thessalonica supported us with immission data. This year the statistic was extended with the air quality data of the cities of Stuttgart and Praha. No data were sent to us by the cities of Luxemburg and Budapest.

Die Städte Bukarest und Debrecen liefern seit 9 Jahren keine Daten. Sollten diese noch eintreffen, werden sie in künftigen Städtevergleichen in Form von Zeitreihen mit berücksichtigt.

The cities Bucharest and Debrecen have not been delivering any data since 9 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 10 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 are critical remarks of comparisons of the pollutant stress between monitoring areas not being 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 10 and the subsequent graphics),
2. the density of distribution of the monitoring stations is different,
3. the location of the monitoring station is not always comparable (for that reason in some cities the network services distinguish 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 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 registered 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 which only have been participating the comparison since a couple of years, have been updated as far back as possible

Immissionskenngrößen

In der vorliegenden Studie wurden verschiedene Immissionskenngrößen erhoben:

- 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.

Wie schon im letzten Bericht, ist der vorliegende Bericht ist bei den grafischen Auswertungen kürzer gefasst als in den früheren Jahren. Herausgenommen wurden die grafischen Darstellungen für die Percentile, die max. 3-Stunden-Mittelwerte, die max. Halbstundenmittelwerte und die max. Monatsmittelwerte, da sie im allgemeinen von nicht so starkem öffentlichen Interesse sind. Neu aufgenommen hingegen wurden die grafischen Auswertungen über 1-Stunden-Mittelwerte, die nunmehr fast überall die Norm für die Bewertung von Kurzzeitbelastungen darstellen.

Immission reference values

The present study various immission reference values have been surveyed, 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.

As already done in the latest report the present report has been shortened in comparison to former years, regarding the graphical evaluations of immission reference values. The graphical presentation of percentiles, max. 3h mean values, max. monthly mean values, 1/2h mean values has not been carried out any more, for they seem not to be of such a public interest as others. On the other hand a new graphical evaluation has been added: Max. 1h mean values, the evaluation standard now for short term stress nearly everywhere.

Sämtliche für Grafiken und nicht für Grafiken verwendete Werte können nach wie vor aus den Übersichtstabellen im Anhang entnommen werden.

All values both used for graphics and not used for graphical evaluation can be obtained from the overview tables of the annex.

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 already 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 2007 aufgetragen.

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

1. Einige Städte und Regionen haben ein 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)-

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 2007 are plotted.

The following statements can be given in analysing the data:

1. Some cities and regions have - according to the area - a 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

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.	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):	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: Nahezu alle Regionen *geringer* belastet	SO_2: Nearly all regions *less* stressed
Staub: TSP-Messung in nahezu allen Regionen eingestellt. Wenn vorhanden, ist die Tendenz zu *geringeren* Belastungen (Vergleich nur bis 2004).	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}: uneinheitlich, tendenziell *gleich bleibend* oder *leicht geringer belastet*	PM_{10}: non-uniform, trend is constant or *slightly lower* stressed
NO: uneinheitlich, tendenziell *geringer* belastet oder *gleich bleibend*	NO: non-uniform, trend of lower stress or staying constant
NO_2: uneinheitlich, tendenziell *gleich bleibend, oder leicht höher* belastet	NO_2: non-uniform, trend is constant or *slightly higher* stressed
CO: Nahezu alle Regionen *geringer* belastet	CO: nearly all regions *lower* trend of stress
O_3: Belastung tendenziell *gleich bleibend oder leicht erhöht*	O_3: trend is constant or *slightly higher* stressed

Übersicht über die Entwicklung der Schadstoffbelastungen 1993 -2007 [1)]

Beurteilungsbasis: Jahresmittelwerte über alle Stationen einer Region

Overview over the development of the stress of air pollutants from 1993 through 2007 [1)]

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

Austrian Towns, Cities and Regions

	SO_2			NO			NO_2			CO			O_3		
	Stress in 1993 [2)]	Trend last 5 years	Stress in 2007	Stress in 1993 [2)]	Trend last 5 years	Stress in 2007	Stress in 1993 [2)]	Trend last 5 years	Stress in 2007	Stress in 1993 [2)]	Trend last 5 years	Stress in 2007	Stress in 1993 [2)]	Trend last 5 years	Stress in 2007
Linz		==			↘			↘			↘			↘	
Bludenz		-	2004	1994	==			==		-	-	-	1994	↘	
Dornbirn		==		1994	↘			↘		1998	-	2003	-	-	-
Graz		↓		1994	==			==			↓			↘	
Hallein		==		-	↘			==			↘			↘	
Innsbruck		↓			↗			↗			↘			↘	
Klagenfurt		↓			==			↘			==			↘	
Region Leoben		↘			↘			==			==			↘	
Salzburg		↘		-	↘			==			↘			↘	
St. Pölten	1994	↘		**1994**	↘ [3)]		1994	↗ [3)]		1994	== [3)]		1994	↘	
Vienna		↓		**1994**	↘			↘			↘			↘	
Villach		↓			==			↗			==			↗	

[1)] TSP measurements are mostly replaced by PM_{10} monitoring (see page 13). So no comparison of TSP has been carried out since 2004. If you are interested in TSP-values until 2005 please refer to the report of 2005 (available via internet, URL http://www.linz.at/umwelt/4109.asp)

[2)] Or year, when data were primarily available

[3)] Trend calculation only from 2004 due to new monitoring station close to traffic

European Cities and Regions

	SO_2			NO			NO_2			CO			O_3		
	Stress in 1993 [4]	Trend last 5 years	Stress in 2007	Stress in 1993 [4]	Trend last 5 years	Stress in 2007	Stress in 1993 [4]	Trend last 5 years	Stress in 2007	Stress in 1993 [4]	Trend last 5 years	Stress in 2007	Stress in 1993 [4]	Trend last 5 years	Stress in 2007
Athens	2007	-		2007	-		2007	-	2007	2007	-		2007	-	2007
Barcelona	1994	==		1994	↘		1994	==		1994	↘		1994	==	
Basel		↘			==			↘			-	1999		↘	
Belfast		↘			==			==			==			==	
Berlin		↘			↘			==			==			==	
Birmingham		↓			==			==			↘			==	
Bristol		↓			↗			==			↓			↗	
Brussels	1995	↓		1995	↘		1995	↘		1995	↘		1995	==	
Budapest	1996	-	2005	2003	-	2005	2003	-	2005	2002	-	2005	2003	-	2005
Chemnitz		==			↗			==			↘			↘	
Copenhagen		↘		1994	-	2005	1995	↘		1998	↘		1994	↗	
Debrecen		-	2001	1995	-	2001		-	2001		-	2001		-	2001
Dresden		↘			↗			↗			↘			↘	
Edinburgh		== [5]			== [5]			↗ [5]			==			↗	
Frankfurt		==			↗			↗			==			↘	
Gothenburg		==			↘			↘			==			↘	
Hamburg		==			↘			==			↘			==	
Karlsruhe		↘			↘			↘			↘			↘	
Leeds		↓			↘			==			↓			==	
Leipzig		↓			↓			↘			↘			↘	
Lisbon	1997	↘		-	==		1997	↗		1997	==		1997	↘	
Liverpool		↘			↘			==			↗			↘	
London		↓			↘			==			==			==	

[4] … or year when data were primarily available

[5] Trend 2004-2007 due to obvious change in the monitoring network

	SO_2			NO			NO_2			CO			O_3		
	Stress in 1993 [6]	Trend last 5 years	Stress in 2007	Stress in 1993 [6]	Trend last 5 years	Stress in 2007	Stress in 1993 [6]	Trend last 5 years	Stress in 2007	Stress in 1993 [6]	Trend last 5 years	Stress in 2007	Stress in 1993 [6]	Trend last 5 years	Stress in 2007
Luxemburg	1996	-	2003	1996	-	2003	1996	-	2003	1996	-	2003	1996	-	2003
Lyon		↘			↘			↘		1994	↓		1994	↘	
Madrid	1994	↘		1999	↘		1994	==		1994	↘		1994	↘	
Mannheim		↘			↘			↘			==			↘	
Milan	1994	↓		1994	==		1994	==		1994	↘		1994	↘	
Munich		↗			↗			↗			↘			↘	
Praha	2007	-		2007	-		2007	-		2007	-	2007	2007	-	2007
Riga	1999	==		-	-		1999	↗		2002	↓		1999	↓	
Rhine/Ruhr Area		==			↘			↘			-	2005		↘	
Rotterdam	1995	==		1995	↘		1995	↘		2003	↘		1995	==	
Sofia	1999	↗		2003	-	2005	1999	↗		1999	↓		1999	↗	
Stockholm		==		1994	-	2004	1994	==		1994	↘			↘	
Stuttgart	2007	-		-	-	-	2007	-		2007	-	2007	2007	-	2007
Thessaloniki	2007	-		2007	-		2007	-		2007	-	2007	2007	-	2007
Warsaw	1995	==		2001	↑		1995	↗		1995	==		1995	↘	
Wiesbaden		==			↑			↗			↗			↘	
Zagreb		↘		-	-	-	1994	↘		2005	-		1999	↗	
Zurich		↘			↘			==			↘			==	

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)
- \- no data

↘ slight stress decrease
↓ strong stress decrease
== constant stress
↗ slight stress increase
↓↓ very strong stress decrease
↑ strong stress increase
\- no calculation possible

[6] … or year when data were primarily available

	PM10		
	Stress in 2002 [7]	Trend of 5 years	Stress in 2007 [8]
Linz		↘	
Bludenz	-	-	
Dornbirn		↘	
Graz		↘	
Hallein		==	
Innsbruck		==	
Klagenfurt		↘	
Region Leoben	2003	↘	
Salzburg		==	
St. Pölten		↘	
Vienna		↘	
Villach		↘	
Athens	-	-	
Barcelona		↘	
Basel		↘	
Belfast		==	
Berlin		↘	
Birmingham		↗	
Bristol		==	
Brussels		↘	
Budapest	2004	-	2005
Chemnitz		↘	
Copen-hagen		↓	
Dresden		==	
Edinburgh		==	
Frankfurt		↘	

	PM10		
	Stress in 2002 [7]	Trend of 5 years	Stress in 2007 [8]
Gothenburg		↘	
Hamburg		↘	
Karlsruhe		↘	
Leeds		↗	
Leipzig		↘	
Lisbon		==	
Liverpool		==	
London		↗	
Luxemburg		-	2003
Lyon		↗	
Madrid		==	
Mannheim		↘	
Milan		↗	
Munich		↓	
Praha	-	-	
Riga		↘	
Rhine-/Ruhr Area		↘	
Rotterdam		↓	
Sofia		==	
Stockholm		↘	
Stuttgart	-	-	
Thessaloniki	-	-	
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)
- \- no data

[7] If values of 2002 are not available, data of the year mentioned are compared.

[8] If values of 2007 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 2007 [9)]

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

Number of days with exceedances of the PM_{10} daily mean of 50 µg/m³ in 2001 through 2007 [11)]

based on the number of exceedances 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	2006	2007
Linz	62	66	80	46	68	71	41
Bludenz	-	-	-	-	13	45	16
Dornbirn	-	-	38	21	22	40	18
Graz	159	131	131	117	127	113	76
Hallein	-	28	49	26	27	50	20
Innsbruck	-	50	61	52	55	83	46
Klagenfurt	36	58	74	80	82	79	42
Region Leoben	26	7	42	29	36	49	36
Salzburg	-	34	62	34	39	56	25
St. Pölten	-	-	58	79	87	57	23
Vienna	-	57	95	54	92	108	48
Villach	-	24	35	25	29	45	10
Athens	-	-	-	-	-	-	178
Barcelona	-	86	-	47	74	100	97
Basel	11	22	23	16	15	24	12
Belfast	16	7	33	8	5	7	5
Berlin	60	91	117	62	74	71	30
Birmingham	2	1	5	4	5	9	18
Bristol	7	1	9	12	4	6	15
Brussels	52	153	163	127	67	56	56
Budapest	-	-	-	178	160	-	-
Chemnitz	41	20	35	12	59	65	27
Copenhagen	-	59	91	-	-	-	-
Dresden	53	36	53	27	78	49	27
Edinburgh	3	8	2	0	3	2	6
Frankfurt	42	44	51	19	48	24	33
Gothenburg	1	10	12	2	7	13	3
Hamburg	33	43	62	20	45	31	26
Karlsruhe	6	33	33	25	22	34	16
Leeds	3	3	9	4	15	10	11

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. diverse grafische Auswertungen.

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

12 For details in order to distinguish between traffic stressed stations 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	2006	2007
Leipzig	109	63	92	49	82	74	40
London	28	29	61	107	121	157	124
Lisbon	230	222	183	147	180	145	154
Liverpool	4	2	1	14	5	8	11
Lyon	-	83	124	71	153	-	142
Madrid	-	98	-	121	159	181	123
Mannheim	25	44	36	41	43	20	26
Milan	148	177	137	139	152	149	132
Munich	64	75	123	59	107	92	53
Praha	-	-	-	-	-	-	132
Riga	57	74	105	160	88	244	148
Rhine-/Ruhr Area	40	48	58	38	21	-	71
Rotterdam	98	103	123	54	30	31	26
Sofia	-	-	225	178	162	-	195
Stockholm	101	113	80	80	80	74	75
Stuttgart	-	-	-	-	-	-	110
Thessaloniki	-	-	-	-	-	-	152
Warsaw	-	-	89	184	162	192	136
Wiesbaden	15	35	19	11	18	32	20
Zagreb	-	-	-	75	89	134	108
Zurich	18	23	38	23	15	39	17

Anzahl der Überschreitungen des 1h-Grenzwertes für NO_2 von 200 µg/m³ in den Jahren 2004 bis 2007

Beurteilungsbasis: Anzahl der Überschreitungen an der höchstbelasteten Station eines Messgebietes

Number exceedances of the NO_2 1h mean value of 200 µg/m³ in 2004 through 2007
based on the number of exceedances at the peak stressed monitoring station of a region

	NO_2			
	number of 1 h mean values >200 µg/m³			
	2004	2005	2006	2007
Linz	0	1	10	4
Bludenz	0	0	0	0
Dornbirn	-	0	0	0
Graz	0	0	4	0
Hallein	0	0	1	3
Innsbruck	0	0	4	0
Klagenfurt	-	1	1	1
Region Leoben	0	0	0	0
Salzburg	0	0	2	1
St. Pölten	0	0	0	0
Vienna	8	24	26	11
Villach	0	0	0	0
Athens	-	-	-	192
Barcelona	13	-	18	22
Basel	0	0	0	0
Belfast	0	4	5	0
Berlin	-	-	-	6
Birmingham	0	2	0	0
Bristol	0	22	13	8
Brussels	24	90	2	2
Budapest	1	25	-	-
Chemnitz	1	0	0	1
Copenhagen	-	-	-	-
Dresden	0	0	0	0
Edinburgh	0	0	0	0
Frankfurt	0	10	3	6

	NO_2			
	number of 1 h mean values >200 µg/m³			
	2004	2005	2006	2007
Gothenburg	2	2	7	1
Hamburg	0	15	26	19
Karlsruhe	5	0	0	0
Leeds	0	0	0	0
Leipzig	1	0	0	0
Liverpool	0	0	0	0
Lisbon	52	35	80	39
London	542	853	686	458
Luxemburg	-	-	-	-
Lyon	35	126	-	139
Madrid	83	122	208	267
Mannheim	0	0	0	0
Milan	47	25	123	-
Munich	11	35	103	69
Praha	-	-	-	1
Riga	0	0	0	0
Rhine-/Ruhr Area	0	0	-	0
Rotterdam	10	1	2	0
Sofia	7	25	-	24
Stockholm	0	2	1	3
Stuttgart	-	-	-	450
Thessaloniki	-	-	-	3
Warsaw	0	0	5	17
Wiesbaden	0	3	2	3
Zagreb	0	0	0	0
Zurich	0	0	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	-	1
	Dornbirn	1	1	1	1	-	-
	Graz	4	5	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	4	3	3	1	1
	Linz	7	7	8	8	7	4
	Salzburg	2	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	7	6	10	10	7	6
Bulgaria	Sofia	5	5	-	5	4	3
Croatia	Zagreb	9	9	-	8	3	6
Czech	Praha	14	20	14	22	13	7
Denmark	Copenhagen	1	3	-	3	3	3
France	Lyon	5	8	10	10	4	4
Germany	Berlin	2	13	15	15	2	7
	Chemnitz	1	3	3	3	1	1
	Dresden	1	3	3	3	1	2
	Frankfurt	4	5	5	5	4	4
	Hamburg	8	11	16	16	7	6
	Karlsruhe	1	3	3	3	2	2
	Leipzig	1	3	3	3	1	2
	Mannheim	2	4	4	4	2	3
	Munich	2	6	7	7	5	3
	Rhine/Ruhr Area	12	22	22	22	-	16
	Stuttgart	1	7	-	6	3	3
	Wiesbaden	1	2	2	2	2	1
Greek	Athens	8	8	16	16	7	14
	Thessaloniki	2	5	7	7	1	5
Hungary	Budapest (2005)	7	9	11	11	10	9
Italy	Milan	1	3	8	8	5	3
Latvia	Riga	3	3	1	4	1	4
Luxemburg	Luxemburg (2003)	2	1	2	2	1	2
Netherlands	Rotterdam	8	3	3	3	2	3
Poland	Warsaw	9	11	9	9	5	4
Portugal	Lisbon	5	4	7	7	7	4
Spain	Barcelona	4	7	4	4	4	4
	Madrid	25	25	25	25	23	23
Switzerland	Basel	1	1	1	1	-	1
	Zurich	1	1	1	1	1	1

Anzahl der Messstellen Number of monitoring stations

Country	Monitored Area	SO_2	PM_{10}	NO	NO_2	CO	O_3
Sweden	Gothenburg	2	1	1	3	1	3
	Stockholm	2	4	-	4	1	1
U.K.	Belfast	1	1	1	1	1	1
	Birmingham	2	2	2	2	2	2
	Bristol	1	1	2	2	2	1
	Edinburgh	1	1	1	1	1	1
	Leeds	1	1	1	1	1	1
	Liverpool	1	1	1	1	1	1
	London	9	9	14	13	9	10

Quellen für die Immissionsdaten Sources for the immission data

Austria **Bludenz, Dornbirn**	Umweltinstitut des Landes Vorarlberg Montfortstraße 4 A-6901 Bregenz Austria e-mail: *umweltinstitut@vorarlberg.at* Homepage: http://www.vorarlberg.at/umweltinstitut
Austria ***Graz, Leoben, Donawitz***	Amt der Steiermärkischen Landesregierung Fachabt.17 C (Ref. für Luftgüteüberwachung) Landhausgasse 7 A-8010 Graz e-mail: *fa17c@stmk.gv.at* Homepage: *http://www.umwelt.steiermark.at/*
Austria ***Innsbruck***	Amt der Tiroler Landesregierung Abt. Waldschutz-Luftgüte Bürgerstrasse 36 A-6020 Innsbruck Austria e-mail: *an.weber@tirol.gv.at* Homepage: http://www.tirol.gv.at/luft
Austria ***Linz***	Amt der oö. Landesregierung Abt. Umwelt- und Anlagentechnik Goethestraße 86 A-4020 Linz Austria e-mail: elisabeth.danninger@ooe.gv.at Homepage: *http://www.ooe.gv.at/umwelt/*
Austria **Salzburg**	Amt der Salzburger Landesregierung, Umweltschutz Postfach 527 A-5010 Salzburg e-mail: *alexander.kranabetter@salzburg.gv.at* Homepage: *http://www.salzburg.gv.at/*
Austria ***St. Pölten***	Magistrat der Landeshauptstadt St. Pölten Abteilung XIII Roßmarkt 6 A-3100 St. Pölten Austria e-mail: *marktamt@st-poelten.gv.at* Homepage: http://www.noe.gv.at/Umwelt/Luft.html

Austria
Vienna

Magistrat der Stadt Wien, MA 22
Dresdner Straße 45
A-1200 Wien
Austria
e-mail: *guenther.schermann@wien.gv.at*
Homepage: *http://www.wien.at/ma22/luftgue.html*

Austria
Klagenfurt, Villach

Amt der Kärntner Landesregierung
Abt. 15 (Umweltschutz und Technik)
Flatschacher Straße 70
A-9020 Klagenfurt
e-mail: *abt15.oekologie@ktn.gv.at*
Homepage: http://www.ktn.gv.at

Belgium
Brussels

CELINE-IRCEL
Avenue des Arts, 10-11
B-1210 – Bruxelles
Belgium
e-mail: *pvd@ibgebim.be*
Homepage: http://www.irceline.be/

Bulgaria
Sofia

Executive Environmental Agency
136 Tzar Boris III Blvd.
BG-1618 Sofia
Bulgaria
e-mail: *Serafimov@nfp-bg.eionet.eu.int*
Homepage: http://nfp-bg.eionet.eu.int/

Croatia
Zagreb

Institute of Medical Research and Occupational Health
Ksaverska cesta 2
HR-10000 Zagreb
Croatia
e-mail: vv*adic@imi.hr*
Homepage: -

Czech Republic
Praha

Czech Hydrometeorological Institute
Na Sabatce 17
14306 Praha 4
Czech Republic
e-mail: mailto:macoun@chmi.cz
Homepage: http://www.chmi.cz

Denmark
Copenhagen

National Environmental Research Institute
Atmospheric Environment
Frederiksborvej 399
DK-4000 Copenhagen
Denmark
e-mail: *kke@dmu.dk*
Homepage: http://www2.dmu.dk/AtmosphericEnvironment

France ***Lyon***	COPARLY-ASCOPARG-SUPAIRE Rue des Frères Lumière, - parc d' Affaires Roosevelt F-69120 Vaulx en velin France e-mail: Homepage: *http://www.atmo-rhonealpes.org*
Germany ***Berlin***	Referat Immissionsschutz, Senatsverwaltung für Gesundheit, Umwelt und Verbraucherschutz, III D 23 Brückenstraße 6 D-10179 Berlin Germany e-mail: efthalia.nulis@senguv.de Homepage *http://www.berlin.de/sen/umwelt/luftqualitaet/index.shtml*
Germany ***Chemnitz, Dresden,*** ***Leipzig***	Sächsisches Landesamt für Umwelt und Geologie Zur Wetterwarte 11 D-01109 Dresden e-mail: *frank.berger@lflug.smul.sachsen.de* Homepage: *http://www.lfug.de*
Germany ***Frankfurt, Wiesbaden***	Hessische Landesamt für Umwelt und Geologie Rheingaustrasse 186 D-65203 Wiesbaden Germany e-mail: *w.stec-lazaj@hlug.de* Homepage: *http://www.hlug.de*
Germany ***Hamburg***	Freie Hansestadt Hamburg, Behörde für Wissenschaft und Gesundheit, Institut für Hygiene und Umwelt, Bereich Umweltuntersuchungen, Abteilung für Luftuntersuchungen Marckmannstraße 129b D-20539 Hamburg Germany e-mail: *dagmar.goemer@hu.hamburg.de* Homepage: *http://www.hambuger-luft.de*
Germany ***Karlsruhe, Mannheim*** **Stuttgart**	Landesanstalt für Umwelt, Messungen und Naturschutz Baden-Württemberg, LUBW Griesbachstr. 1 D-76185 Karlsruhe Germany e-mail: *sabina.drechsler@lubw.bwl.de* Homepage*: http://www.lfu.baden-wuerttemberg.de/*
Germany ***Munich***	Bayerisches Landesamt für Umweltschutz Bürgermeister-Ulrich-Straße 160 D-86179 Augsburg Germany e-mail: *Michael.Rössert@lfu.bayern.de* Homepage: *http://www.bayern.de/lfu/luft/*

Germany ***Rhine Area, Ruhr Area***	Landesumweltamt Nordrhein-Westfalen Wallneyer Straße 6 D-45133 Essen Germany e-mail: *reinhold.beier@lua.nrw.de* Homepage: *http://www.lua.nrw.de*
Greek ***Athens, Thessaloniki***	Hellenic Republic Ministry for the environment Directorate of air and noise pollution control Patission 147 D-11251 Athen Greece e-mail: *air_quality@dearth.minenv.gr* Homepage: *http://www.minenv.gr*
Hungary ***Budapest***	MUNICIPALITY OF THE CITY OF BUDAPEST Environmental Department Városház u. 9-11 H-1052 Budapest Hungary e-mail: *takacsn@budapest.hu* Homepage: http://www.budapest.hu
Italy ***Milan***	ARPA Lombardia - Agenzia Regionale per la Protezione dell'Ambiente della Lombardia Dipartimento di Milano Via Juvara 22 I-20129 Milano Italy *e-mail: g.tebaldi@arpalombardia.it* - *s.angius@arpalombardia.it* Homepage: http://www. arpalombardia.it/
Latvia ***Riga***	Ministry of Environmental of the Republic of Latvia Latvian Environment, Geology and Meteorology Agency Development and Information Department 165 Maskavas str. LV-1019 Riga Latvia e-mail: *tamara.vasiljeva@lvgma.gov.lv* Homepage: *http://www.meteo.lv* or http://www.lvgma.gov.lv
Luxemburg ***Luxemburg***	Administration de l´Environnement, Dèpartement Air/Bruit 16, rue Eugène RUPPERT L-2453 Luxemburg e-mail: *Serge.solagna@aev.etat.lu* Homepage: -
Netherlands ***Rotterdam***	DCMR- Environmental Protection Agency ´s-Gravelandseweg 565, Postbox 843 NL- 3100 AV Schiedam The Netherlands e-mail: *jel@dcmr.nl* Homepage: *http://www.dcmr.nl*

Poland ***Warsaw***	WIOS Warszawa ul. Bartycka 110A PL-00-716 Warszawa Poland e-mail: e.trebinska@wios.warszawa.pl or t.klech@wios.warszawa.pl Homepage: *http://www.wios.warszawa.pl*
Portugal ***Lisbon***	Agencia Portuguesa do Ambiente Rua da Murgueira 9/9A *PT-2610-124 Amadora* *Portugal* *e-mail:geral@apambiente.pt* *Homepage: http://www.qualar.org/*
Sweden ***Gothenburg***	Environmental Department Göteborg Karl Johansgatan 23 S-414 59 Göteborg Sweden e-mail: *jan.brandberg@miljo.goteborg.se* Homepage: *http://www.miljo.goteborg.se/luftnet*
Sweden ***Stockholm***	Environment and Health Protection Administration, Slb – analys Box 8136 S-10420 Stockholm Sweden e-mail: *boel@slb.nu* Homepage: *http://www.slb.nu*
Spain ***Barcelona, Madrid***	Ministerio de Medio Ambiente C/ Agustin de Betancourt, 25.1ª planta E-28003 Madrid e-mail: *mailto:mpallares@mma.es* Homepage: -
Switzerland ***Basel, Zurich***	Bundesamt für Umwelt, Abteilung Luftreinhaltung und NIS CH-3003 Bern Switzerland e-mail: *rudolf.weber@bafu.admin.ch* Homepage: *http://www.umwelt-schweiz.ch/buwal/de/fachgebiete/fg_luft/luftbelastung/index.html*
U.K. ***Belfast, Birmingham,*** ***Bristol, Edinburgh, Leeds*** ***Liverpool, London***	The Department of the Environment, Food and Rural Affairs Environmental protection Ashdown House, 123 Victoria St London SW 1E 6DE e-mail: *ruth_chapman@detr.gsi.gov.uk* Homepage: *http://www.airquality.co.uk*

Luftgütevergleich

2007

Jahresmittelwert (Gebietsmittel)

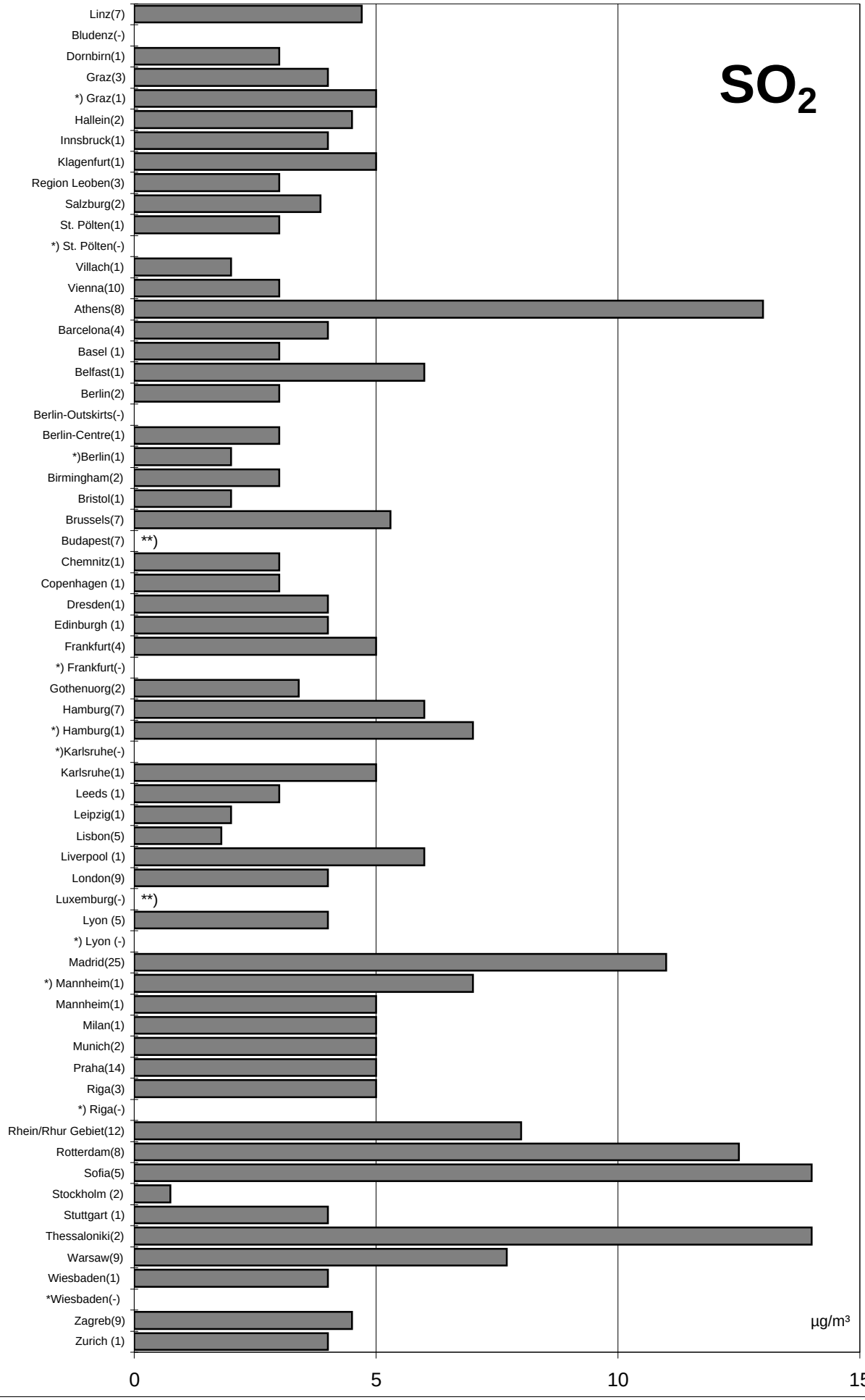
Comparison of The Air Quality

2007

Annual Mean Values

Comparison of The Air Quality in 2007

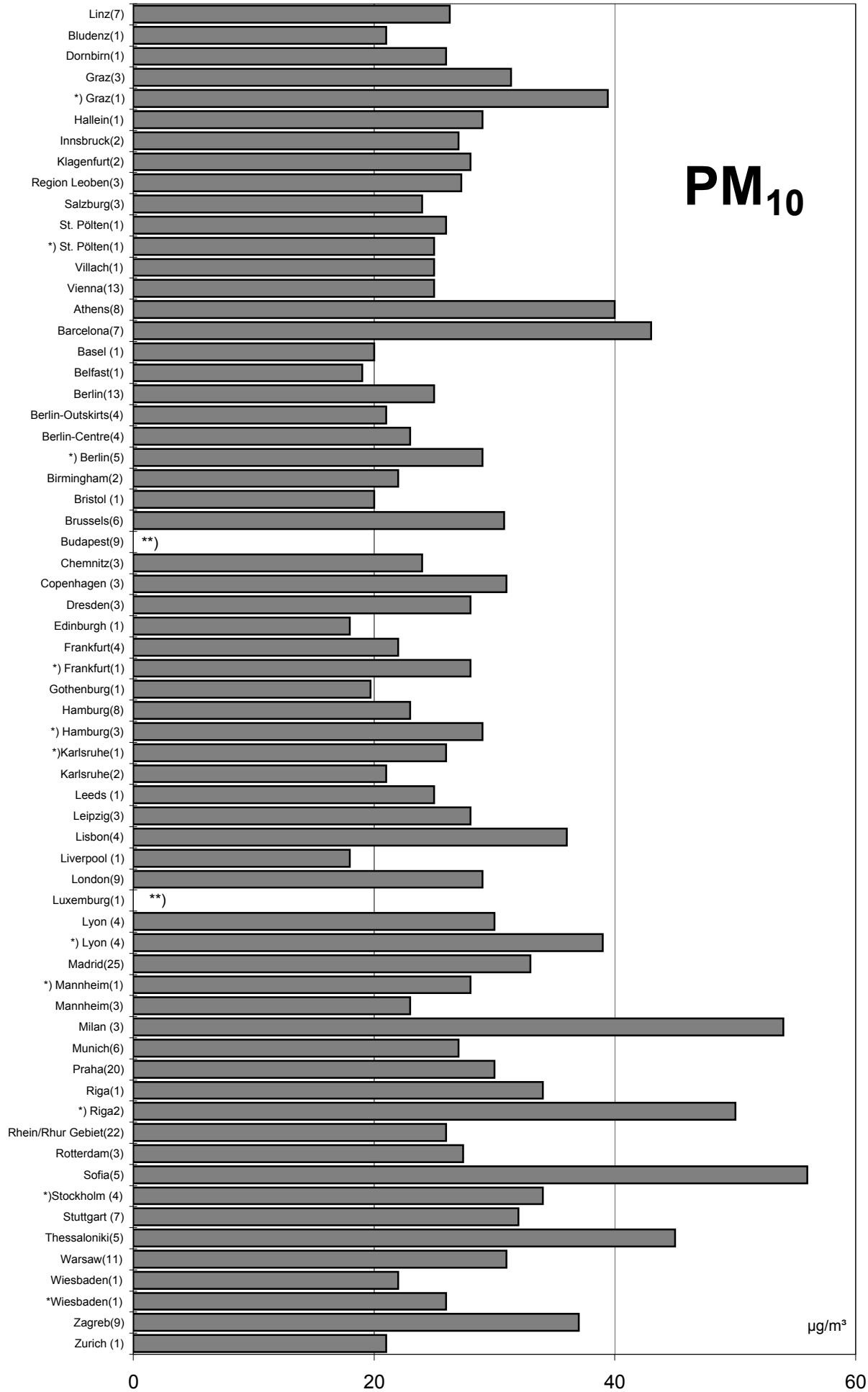
annual mean values (in parentheses: number of monitoring stations)



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

Comparison of The Air Quality in 2007

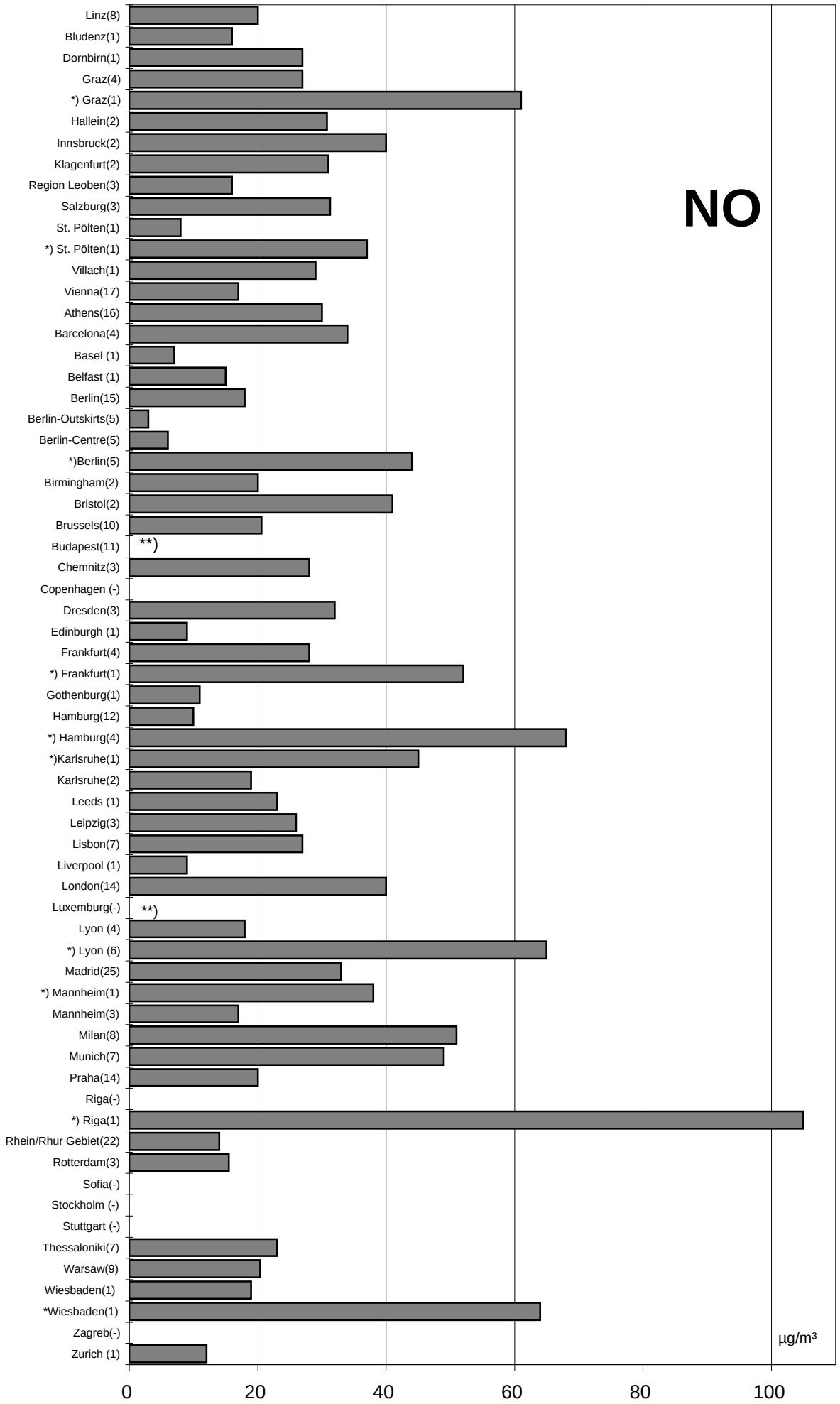
annual mean values (in parentheses: number of monitoring stations)



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

Comparison of The Air Quality in 2007

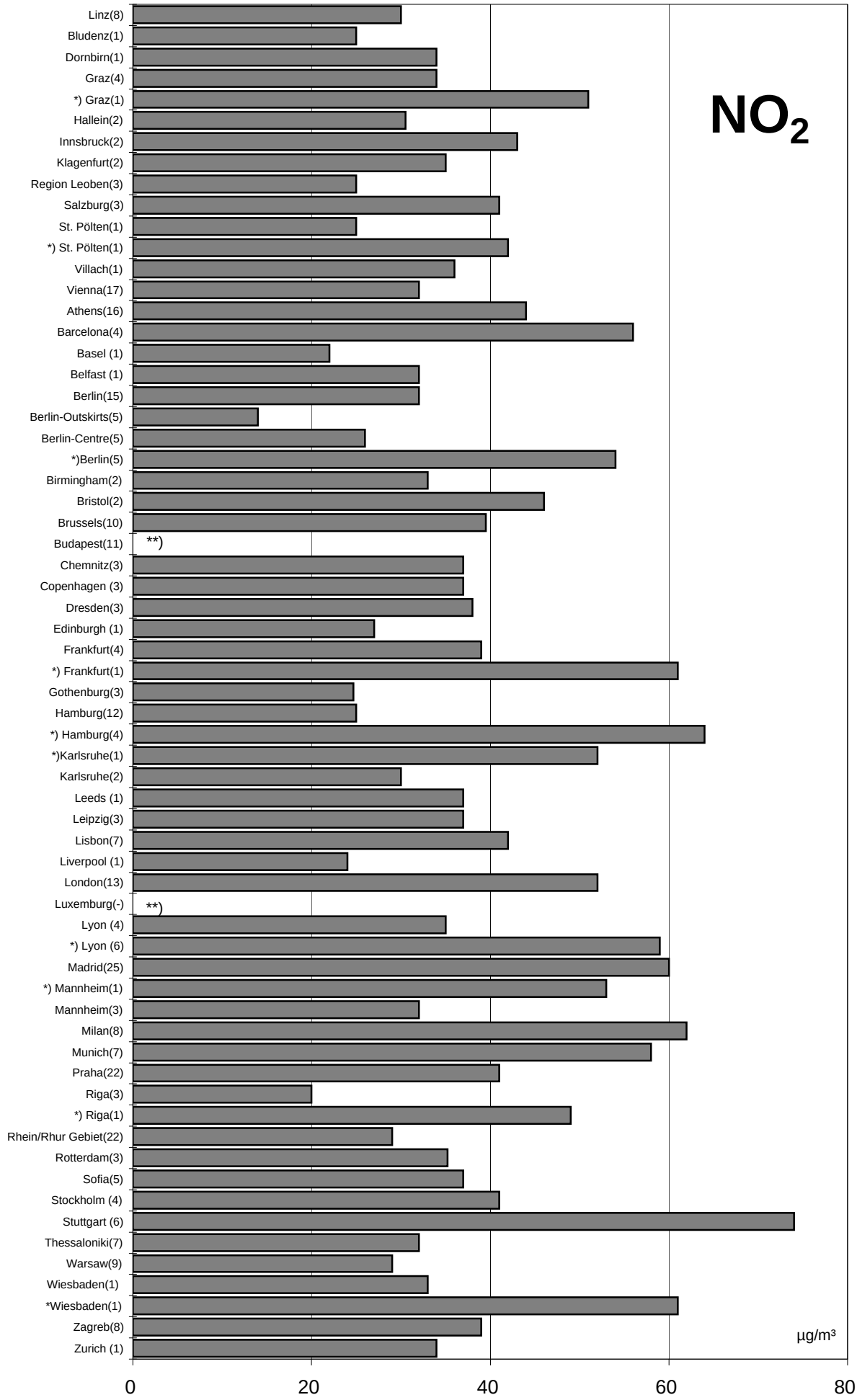
annual mean values (in parentheses: number of monitoring stations)



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

Comparison of The Air Quality in 2007

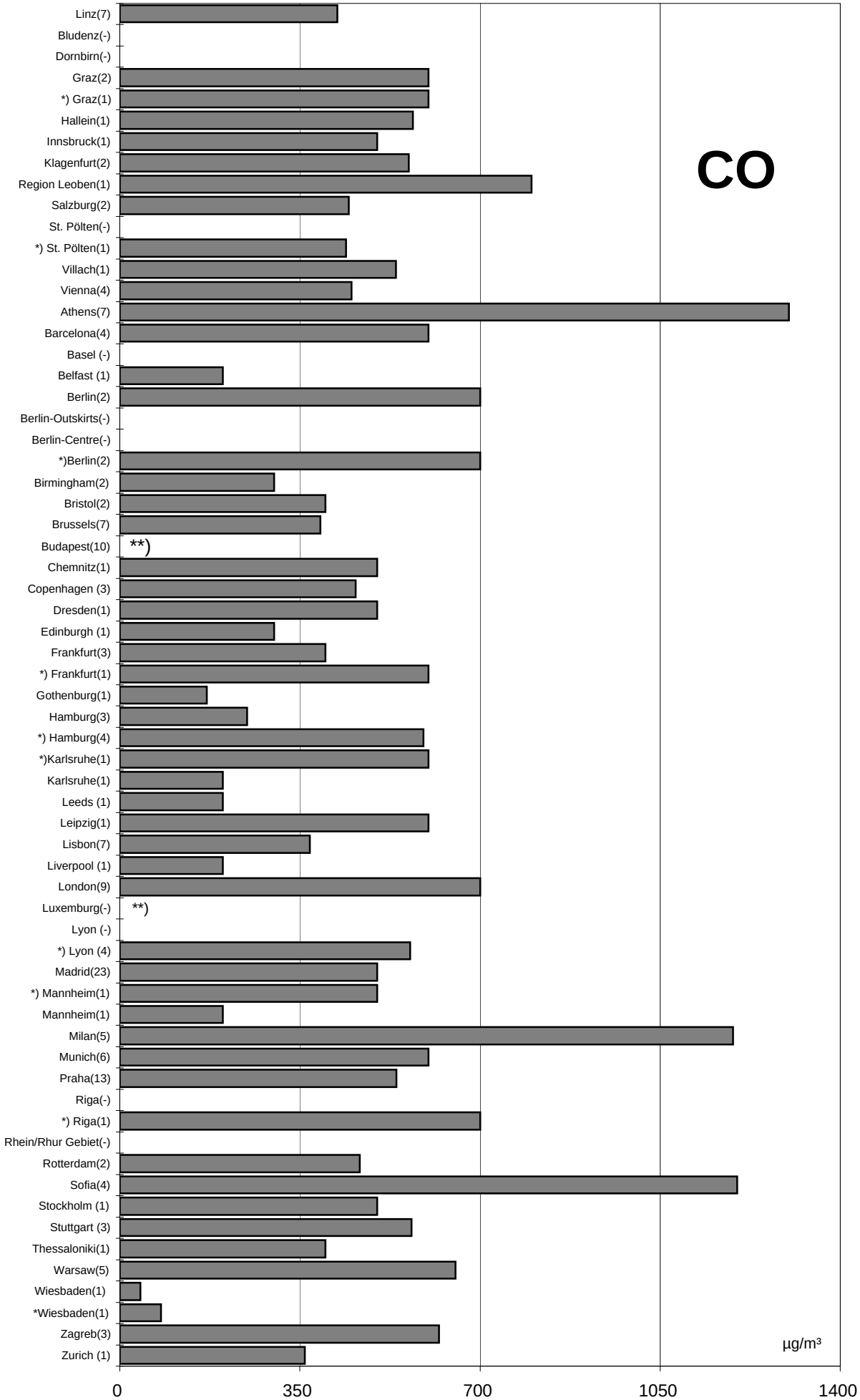
annual mean values (in parentheses: number of monitoring stations)



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

Comparison of The Air Quality in 2007

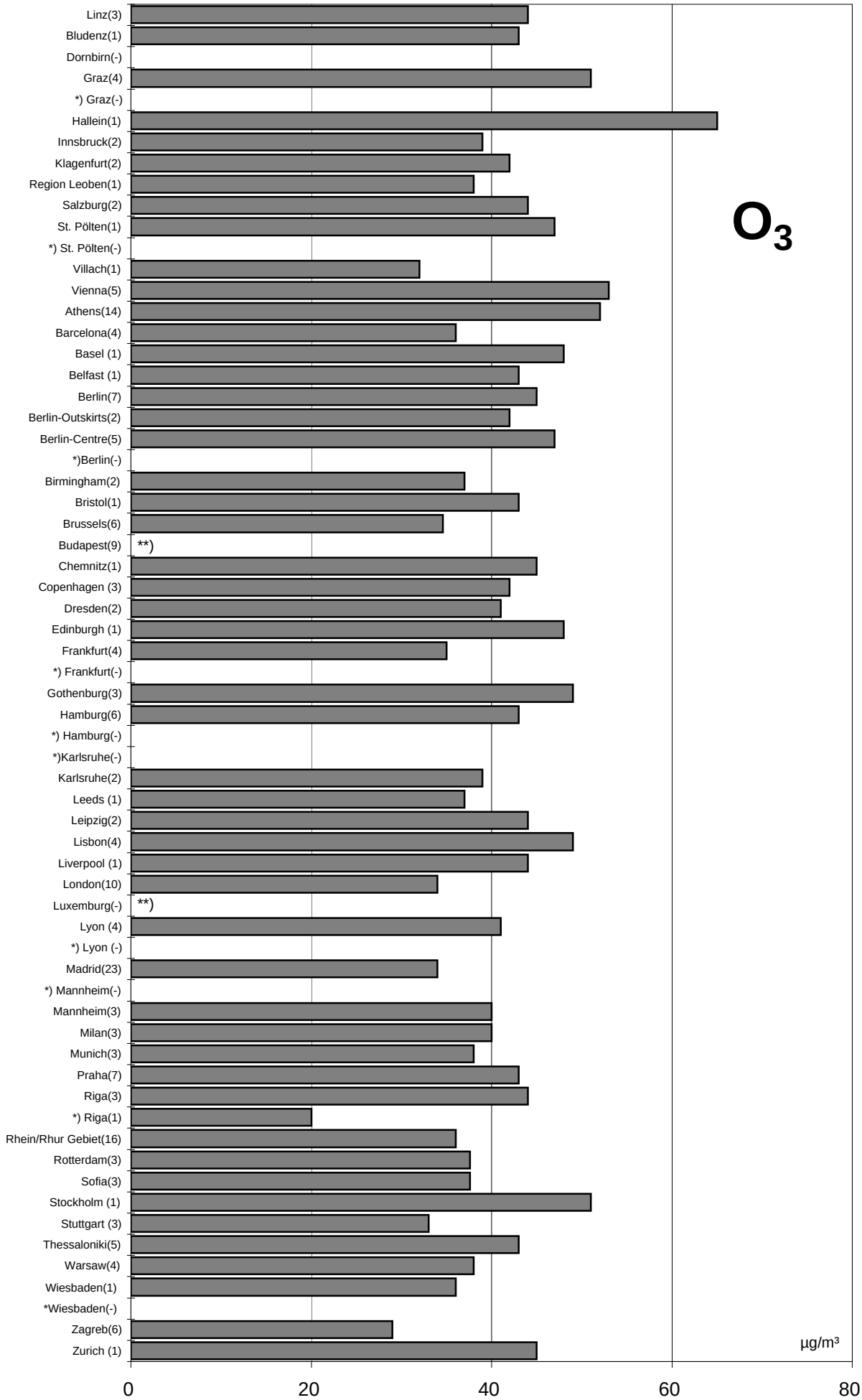
annual mean values (in parentheses: number of monitoring stations)



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

Comparison of The Air Quality in 2007

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



*) traffic-influenced monitoring stations

**) no data

Luftgütevergleich

2007

max. Tagesmittelwert

Comparison of The Air Quality

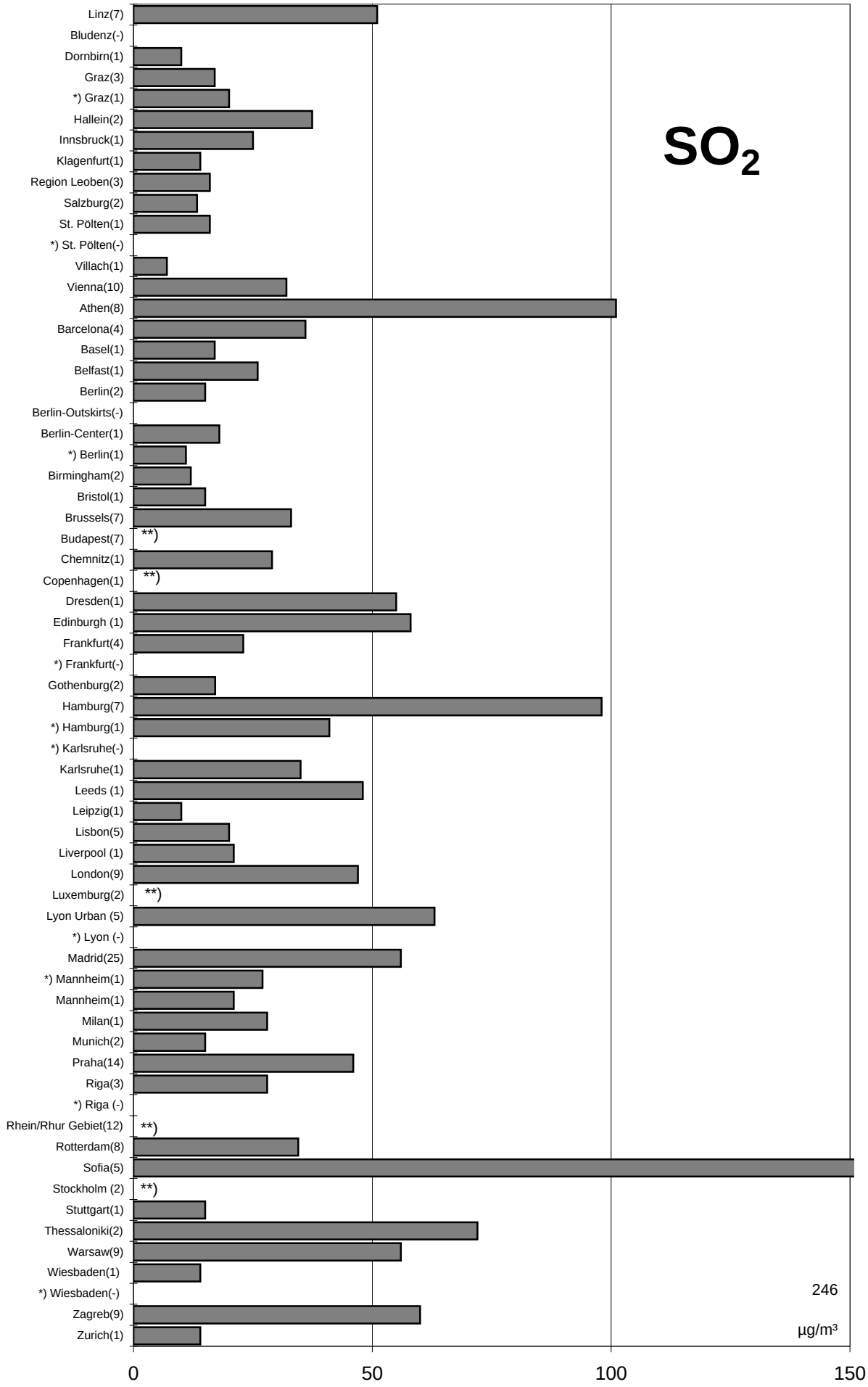
2007

Max. Daily Mean Values

Comparison of The Air Quality in 2007

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

(in parentheses: number of monitoring stations)

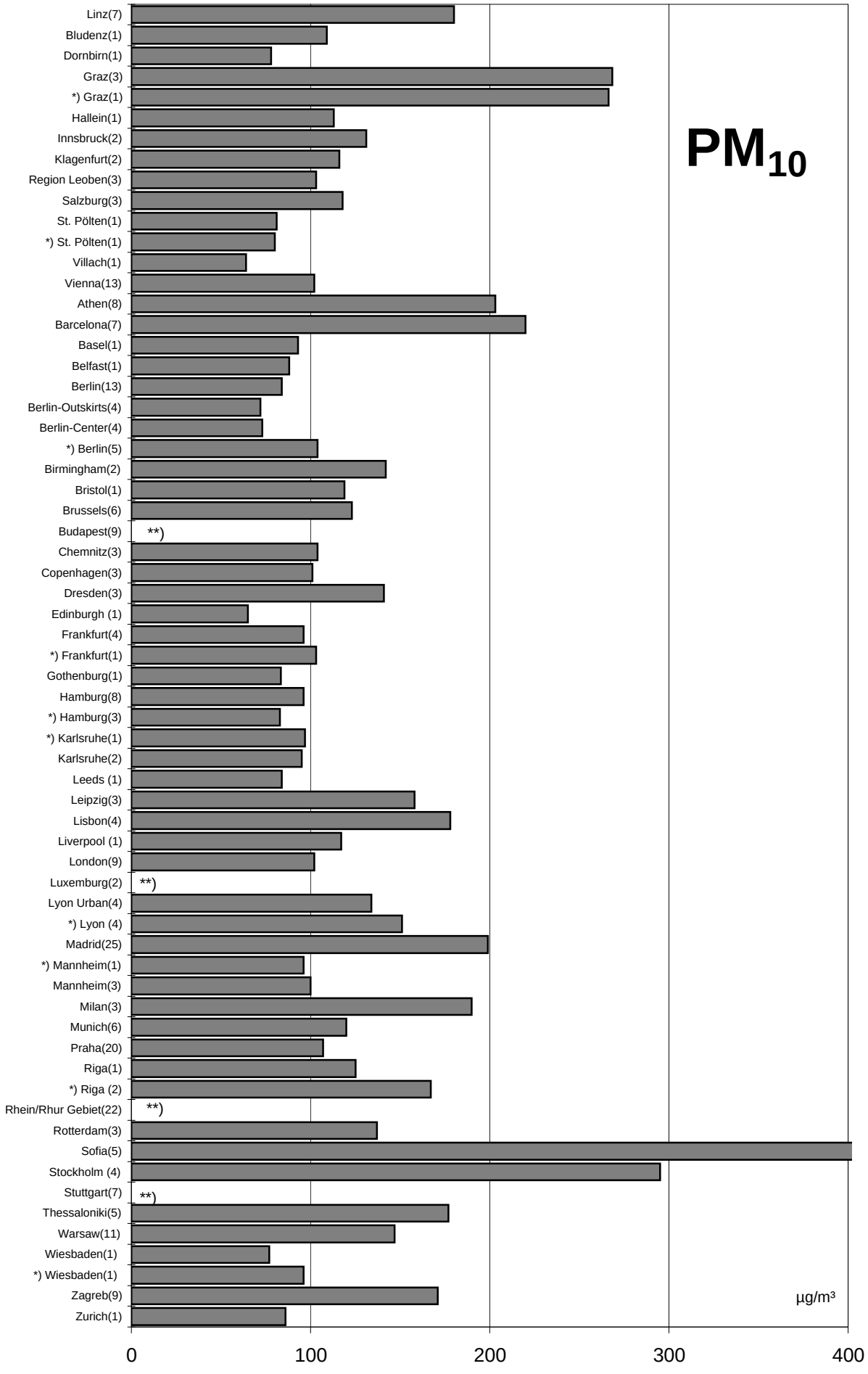


*) traffic-influenced monitoring stations
**)no data

Comparison of The Air Quality in 2007

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

(in parentheses: number of monitoring stations)

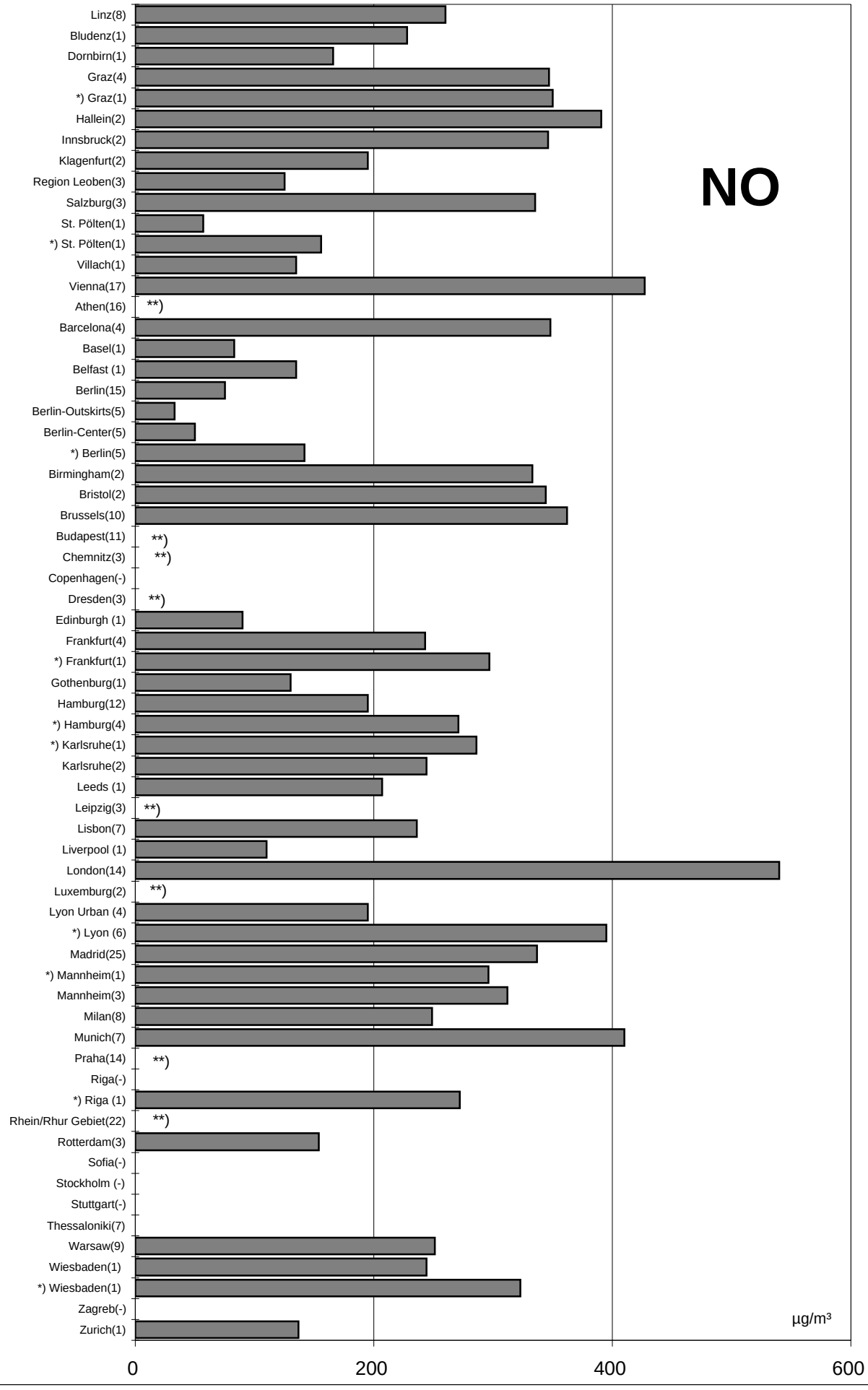


*) traffic-influenced monitoring stations
**)no data

Comparison of The Air Quality in 2007

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

(in parentheses: number of monitoring stations)

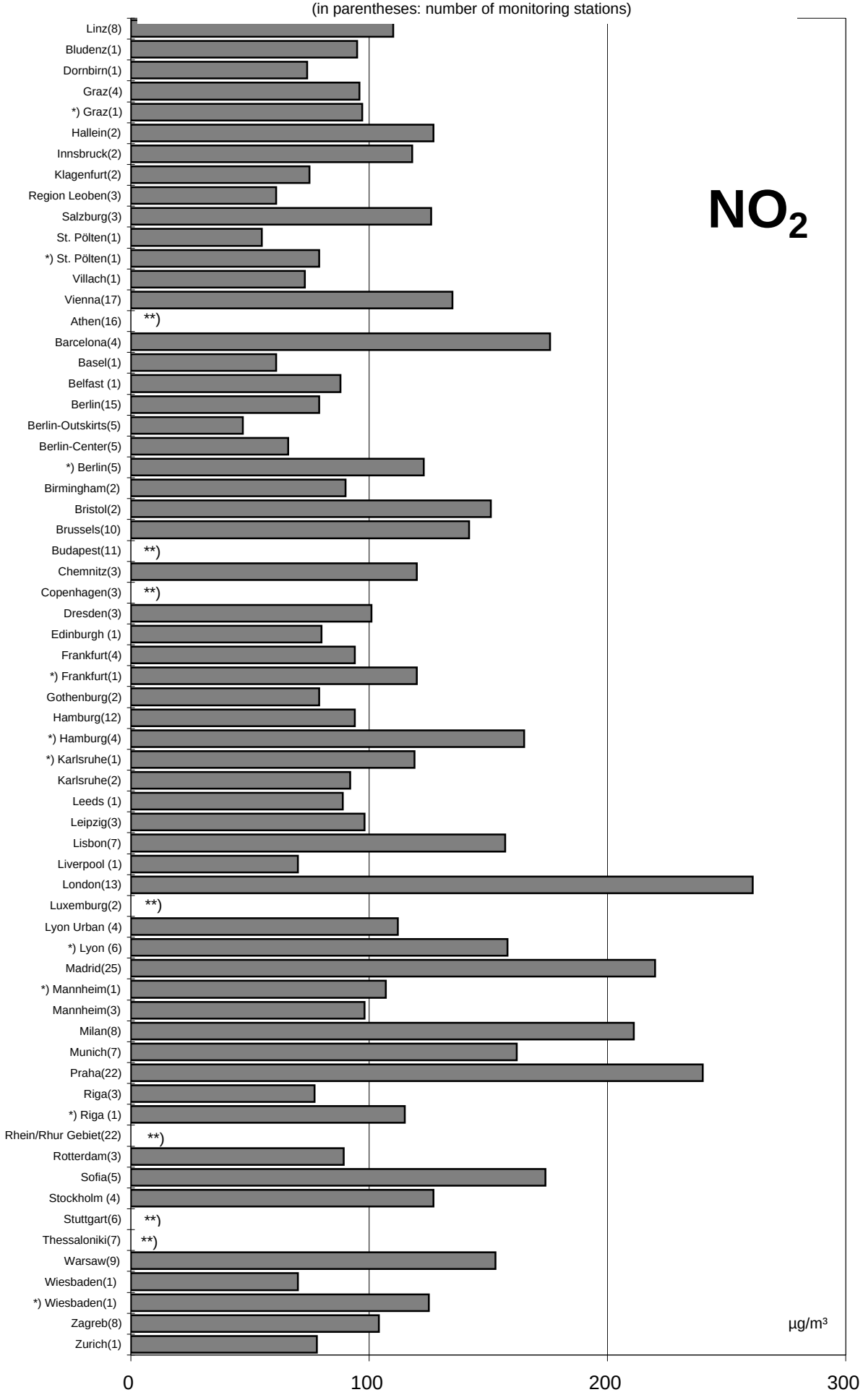


*) traffic-influenced monitoring stations
**)no data

Comparison of The Air Quality in 2007

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

(in parentheses: number of monitoring stations)

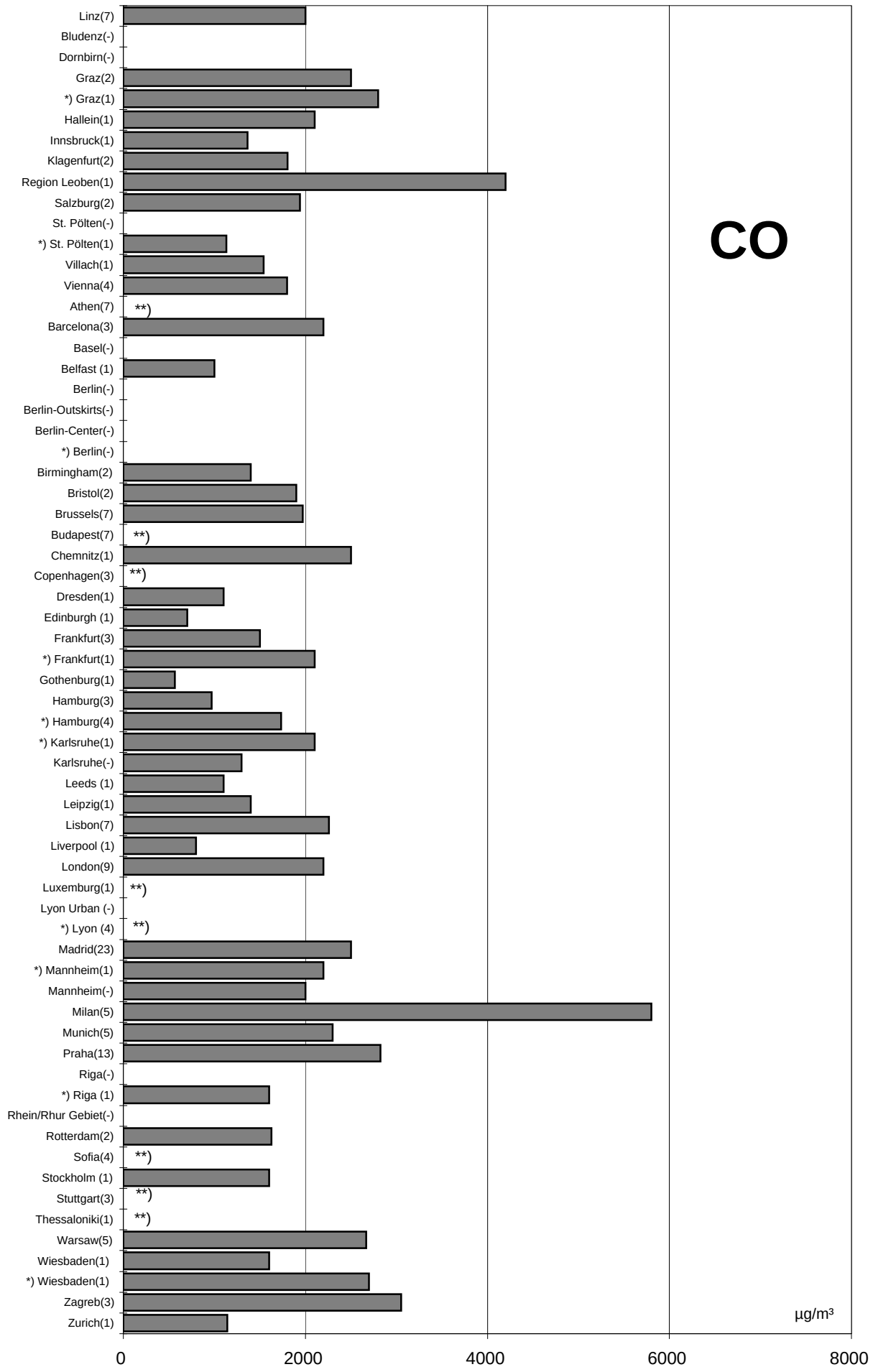


*) traffic-influenced monitoring stations
**)no data

Comparison of The Air Quality in 2007

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

(in parentheses: number of monitoring stations)

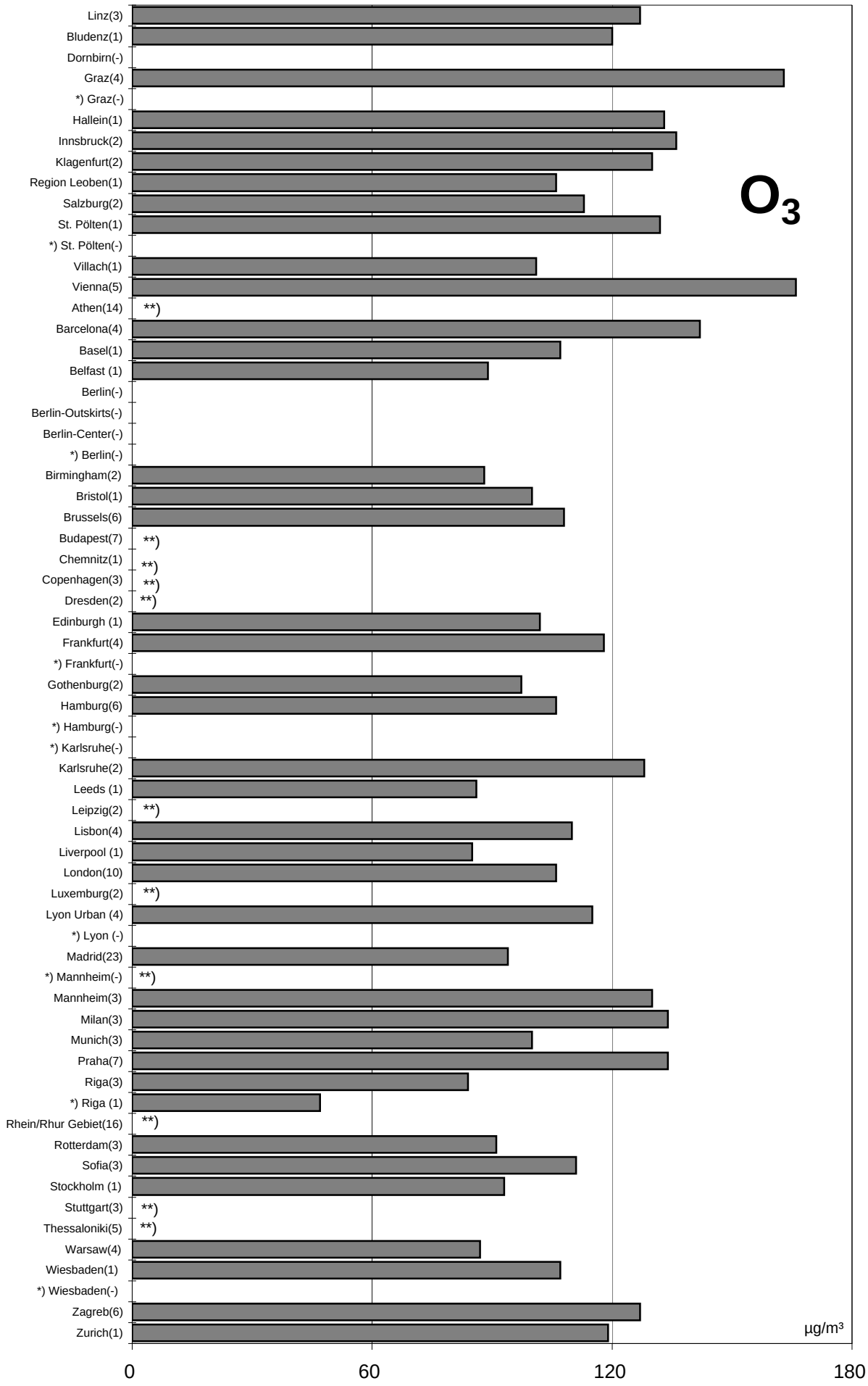


*) traffic-influenced monitoring stations
**)no data

Comparison of The Air Quality in 2007

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

(in parentheses: number of monitoring stations)



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

Luftgütevergleich

2007

max. 1h-Mittelwerte

Comparison of The Air Quality

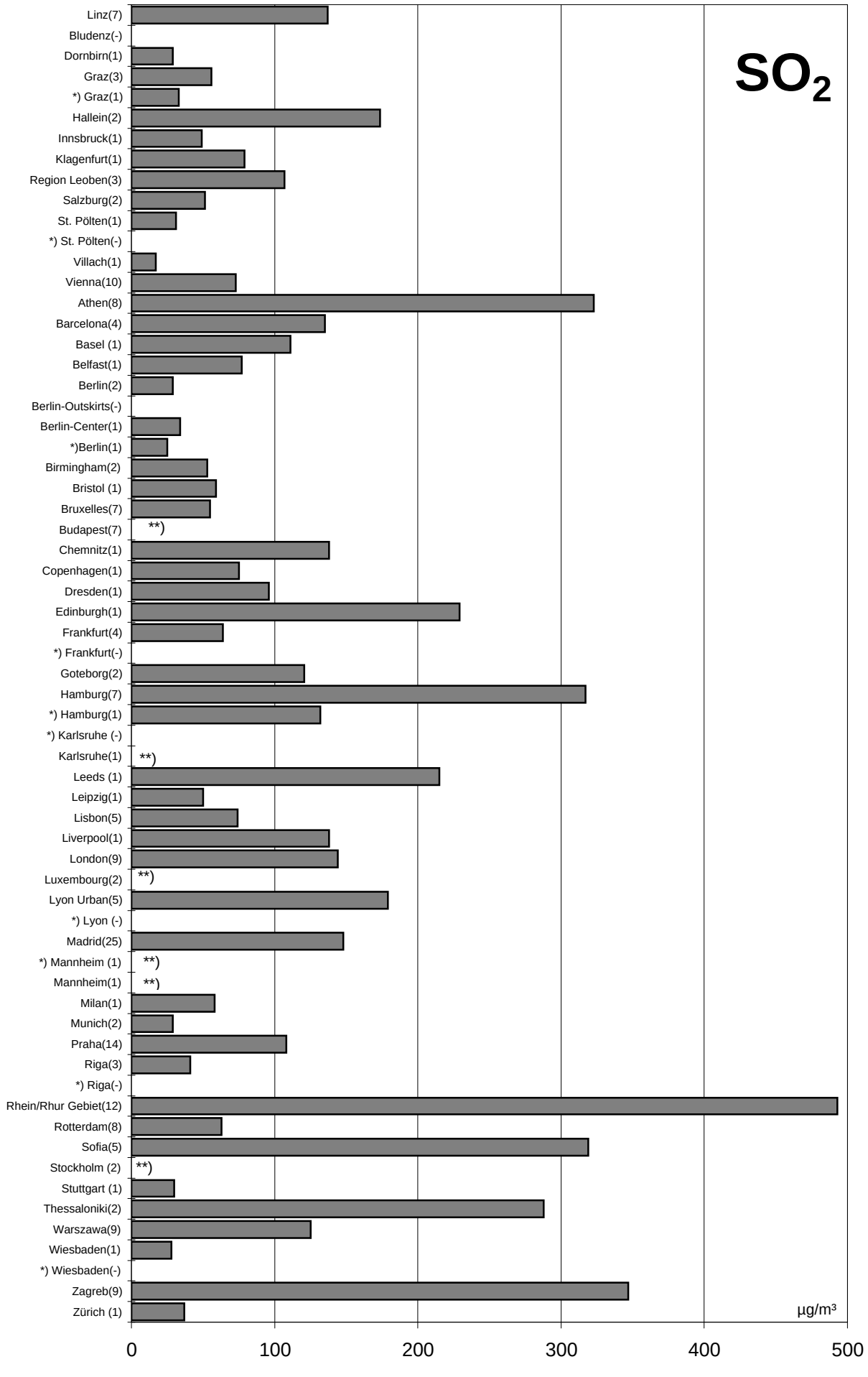
2007

Max. 1h-Mean Values

Comparison of The Air Quality in 2007

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

(in parentheses: number of monitoring stations)

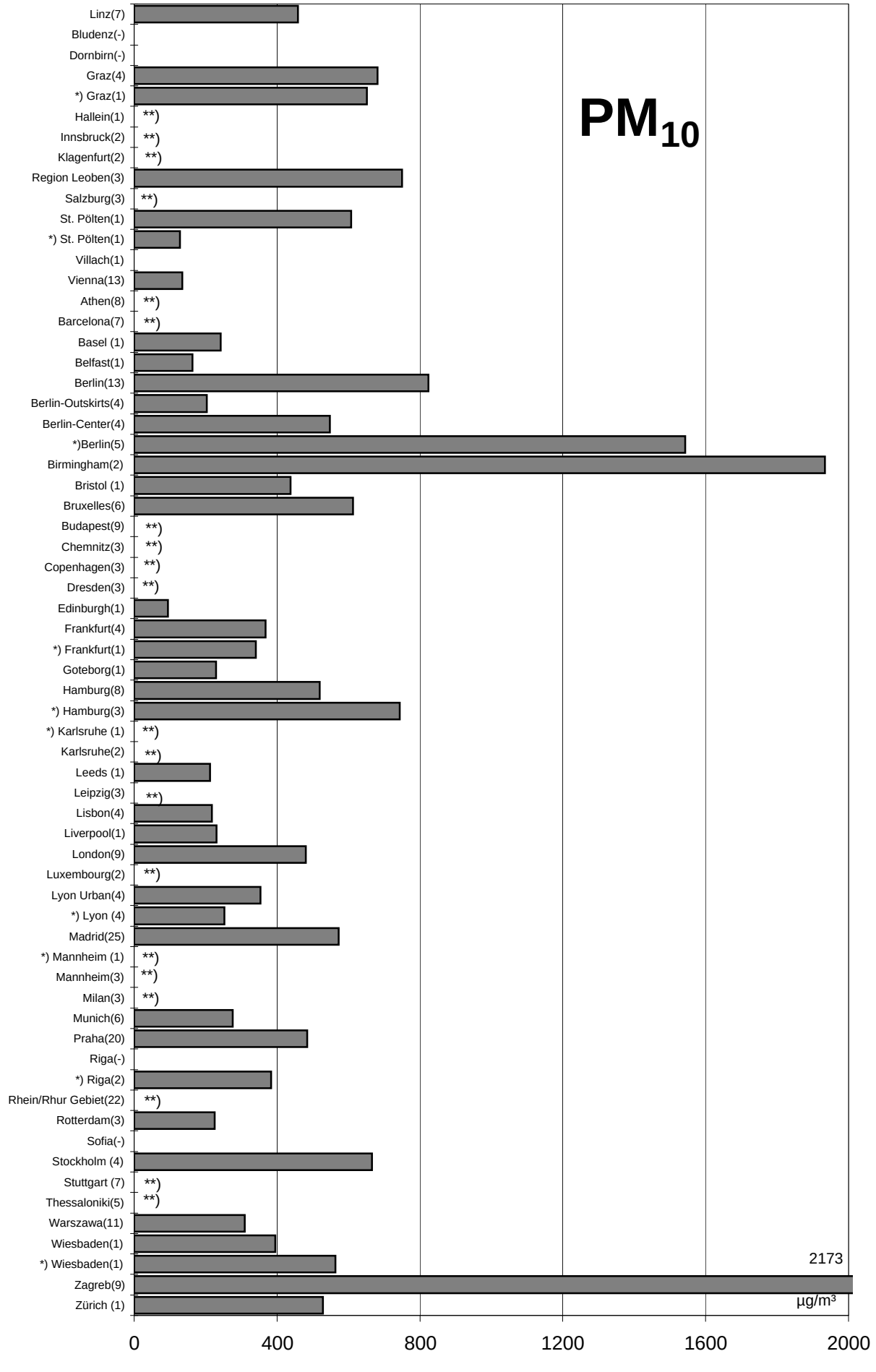


*) traffic-influenced monitoring stations
**)no data

Comparison of The Air Quality in 2007

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

(in parentheses: number of monitoring stations)

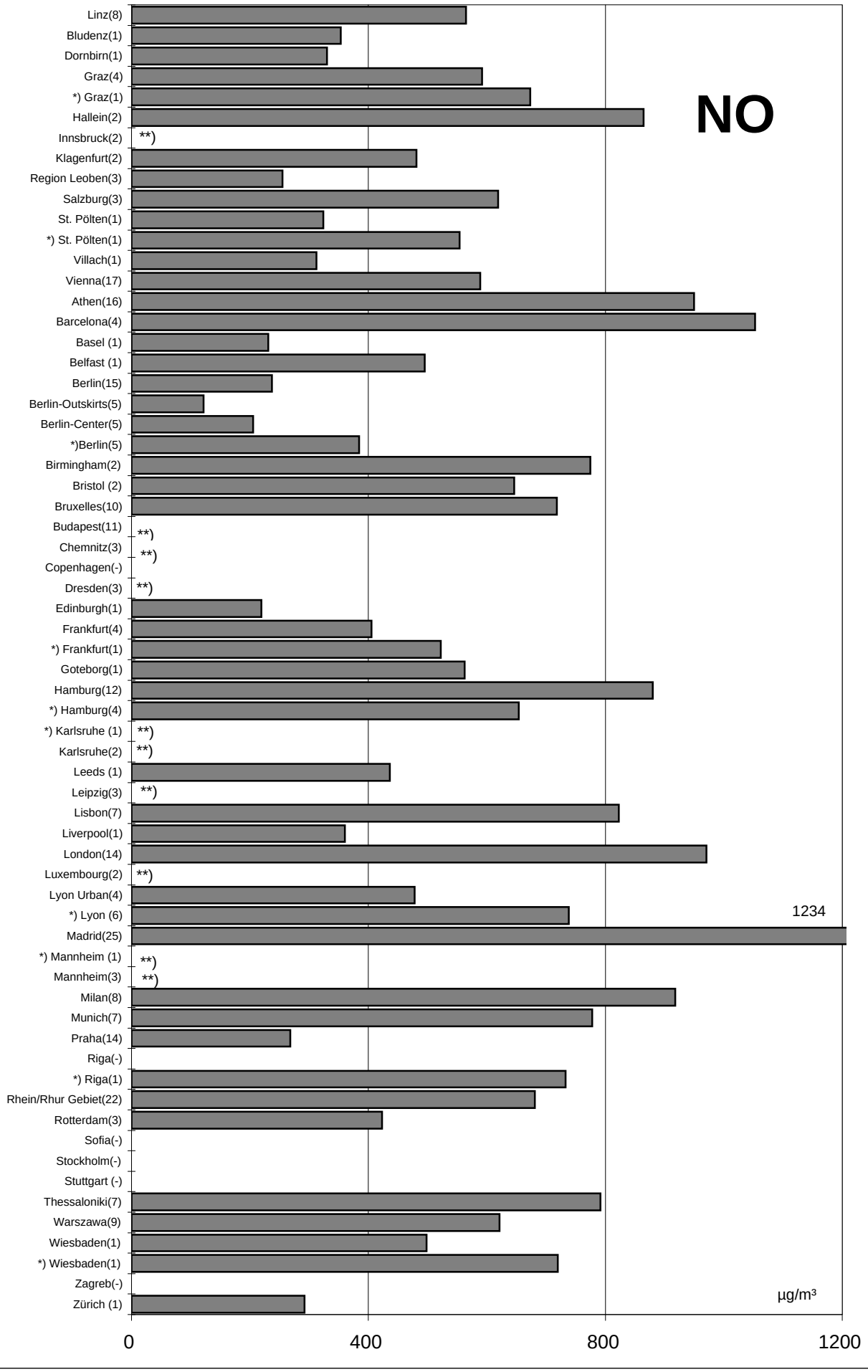


*) traffic-influenced monitoring stations
**)no data

Comparison of The Air Quality in 2007

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

(in parentheses: number of monitoring stations)

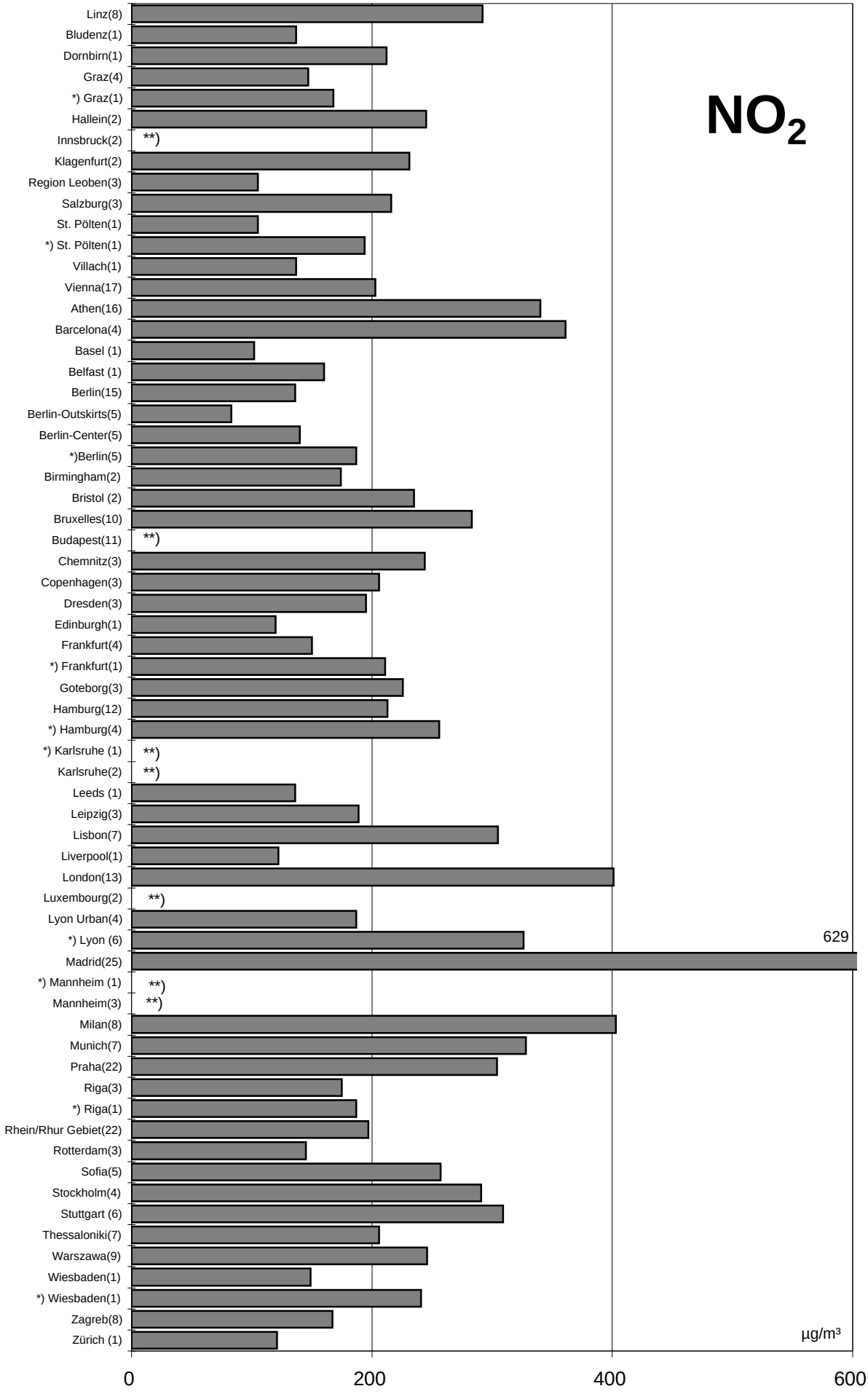


*) traffic-influenced monitoring stations
**)no data

Comparison of The Air Quality in 2007

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

(in parentheses: number of monitoring stations)

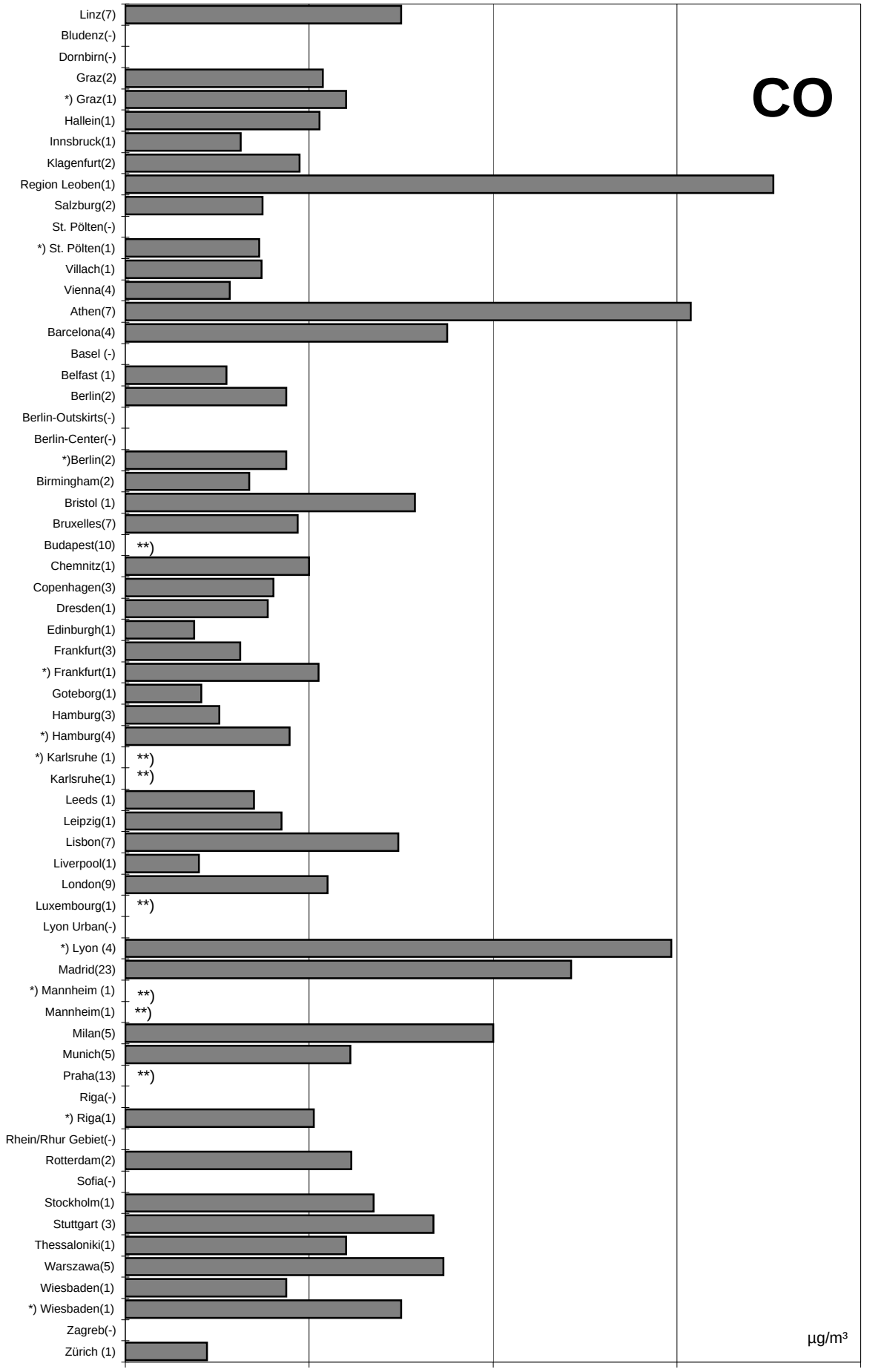


*) traffic-influenced monitoring stations
**)no data

Comparison of The Air Quality in 2007

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

(in parentheses: number of monitoring stations)

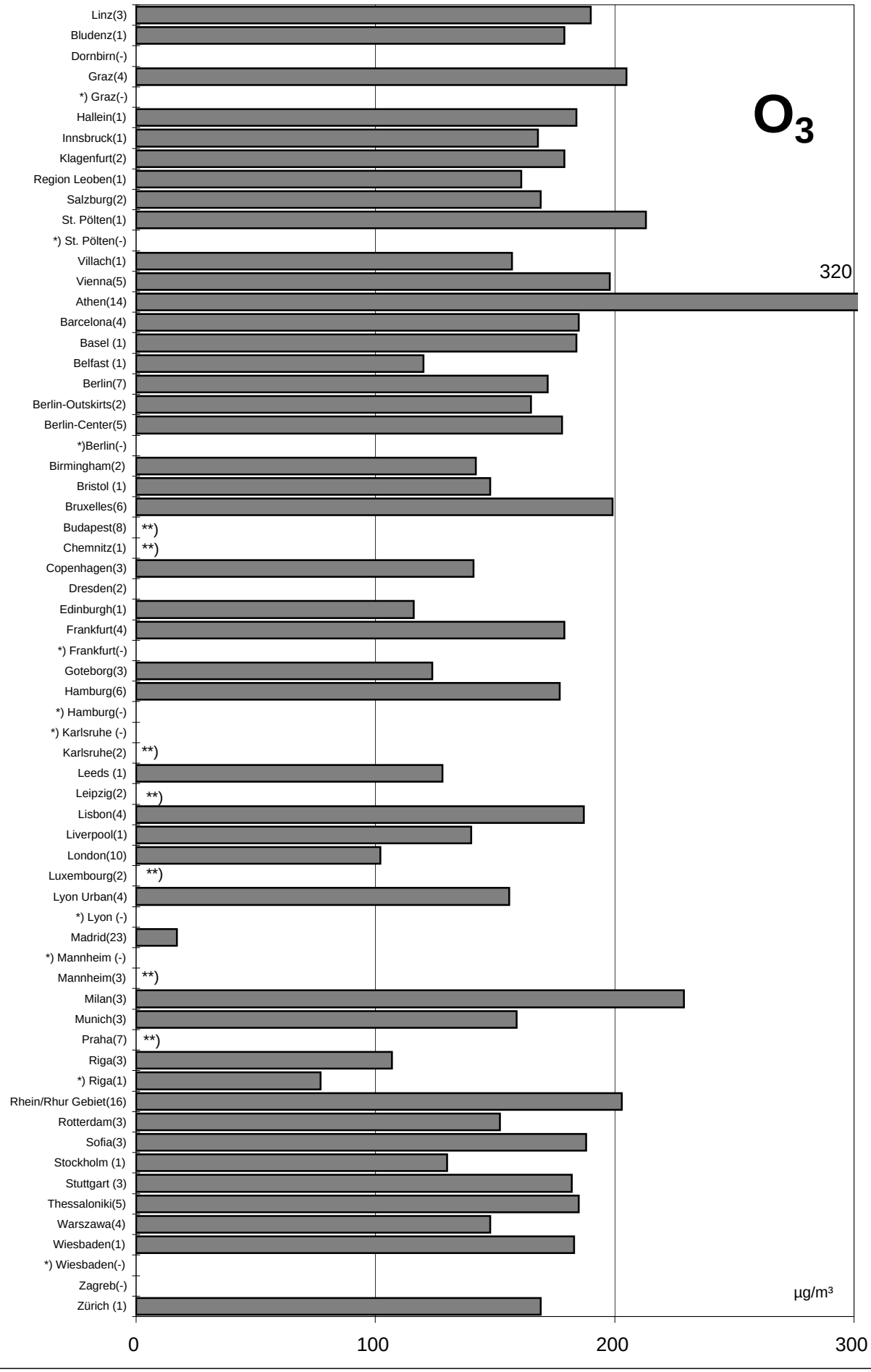


*) traffic-influenced monitoring stations
**)no data

Comparison of The Air Quality in 2007

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

(in parentheses: number of monitoring stations)



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

Jahresvergleich

1992 - 2007

Jahresmittelwerte

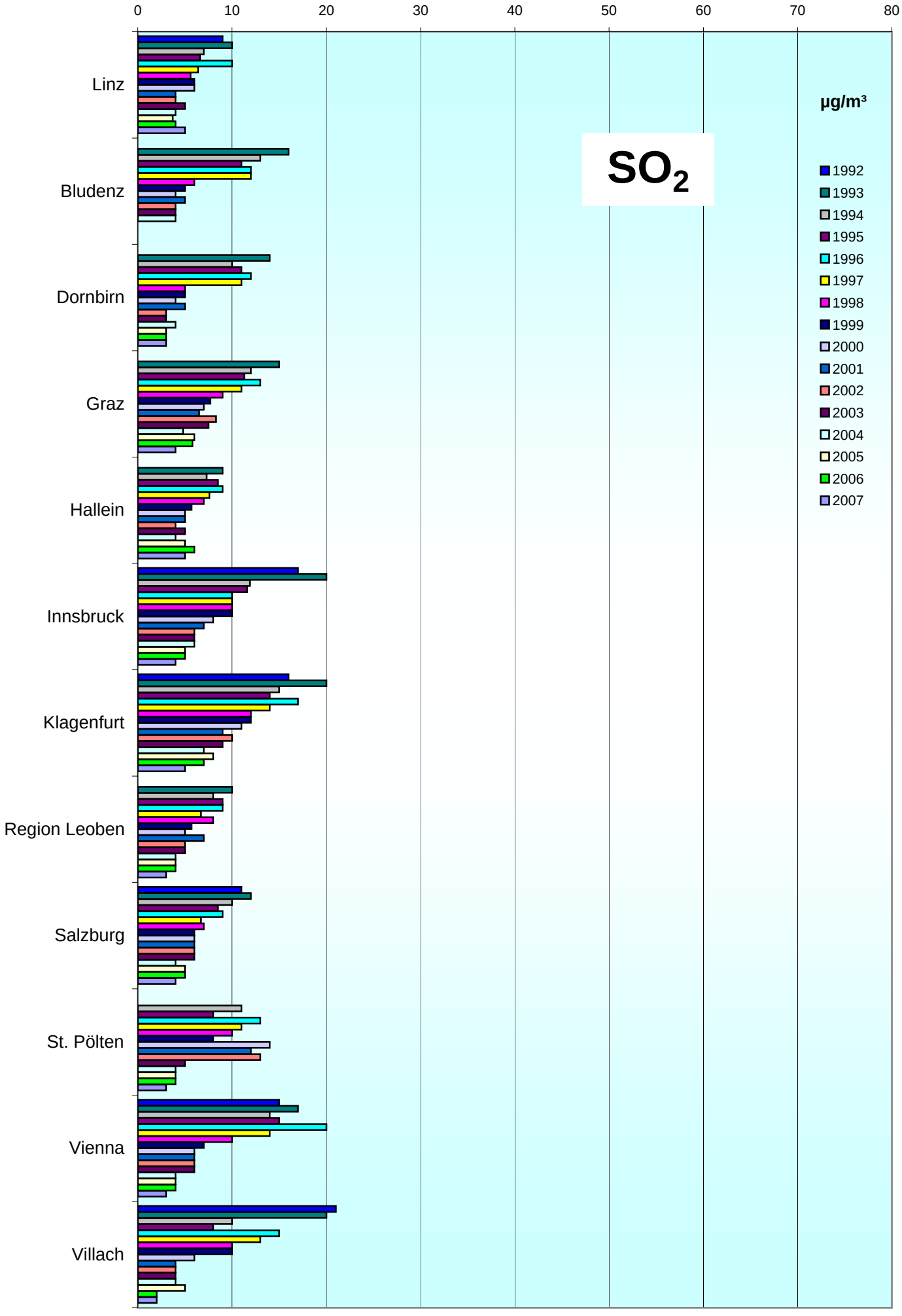
Comparison of The Air Quality Over The Years

1992 - 2007

Annual Mean Values

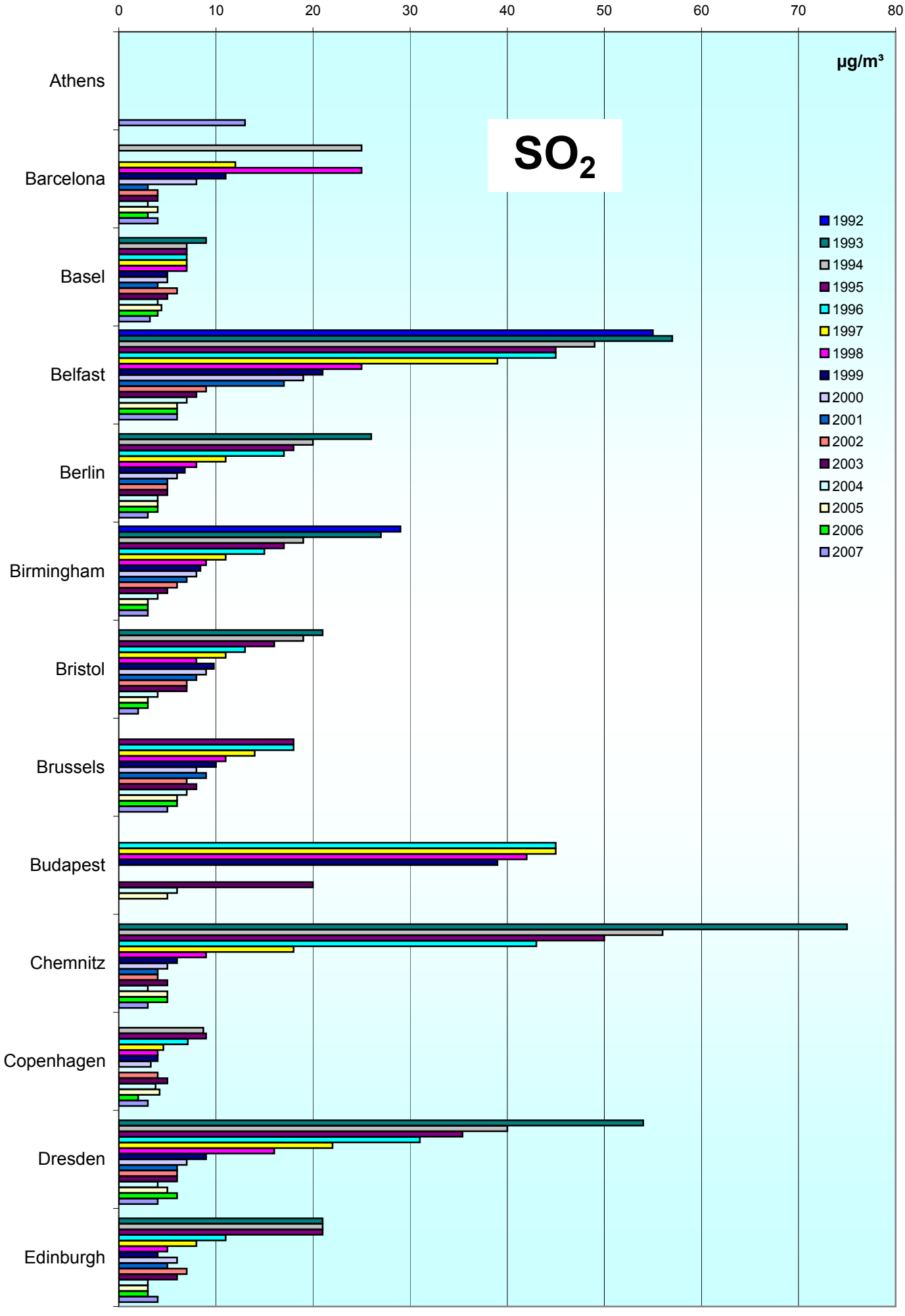
Comparison of The Air Quality 1992 - 2007

Annual mean values (mean of all monitoring stations)



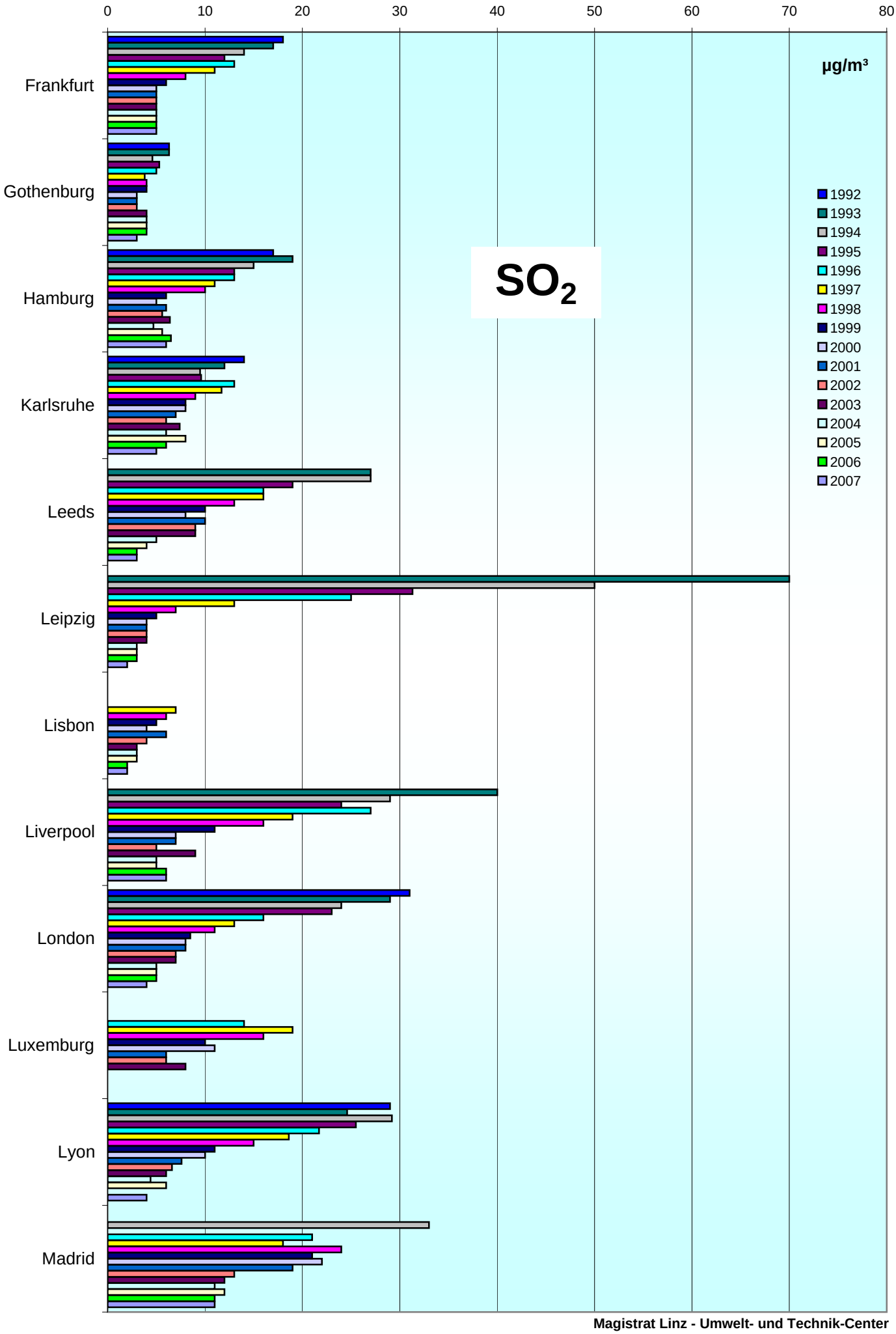
Comparison of The Air Quality 1992 - 2007

Annual mean values (mean of all monitoring stations)



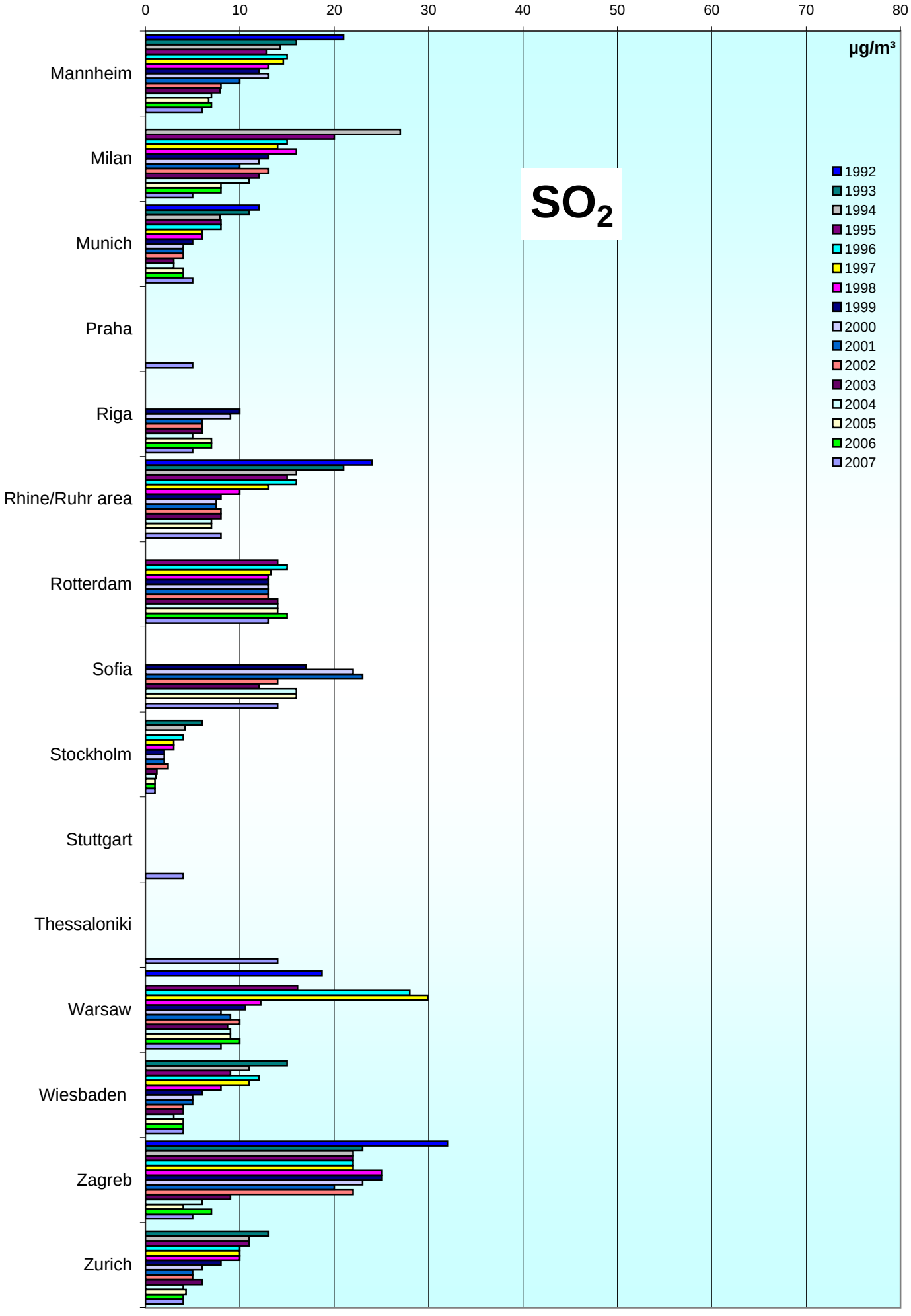
Comparison of The Air Quality 1992 - 2007

Annual mean values (mean of all monitoring stations)



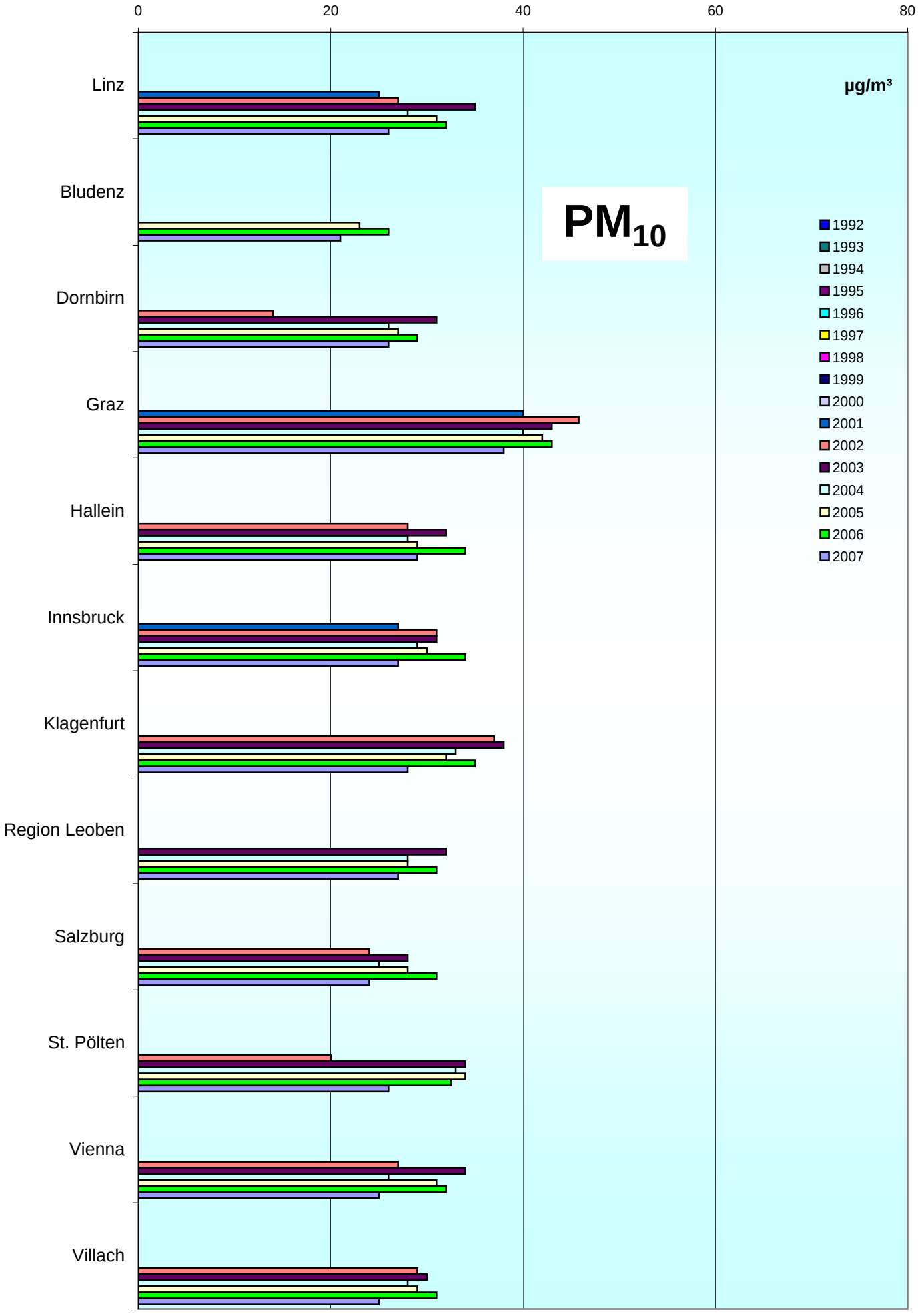
Comparison of The Air Quality 1992 - 2007

Annual mean values (mean of all monitoring stations)



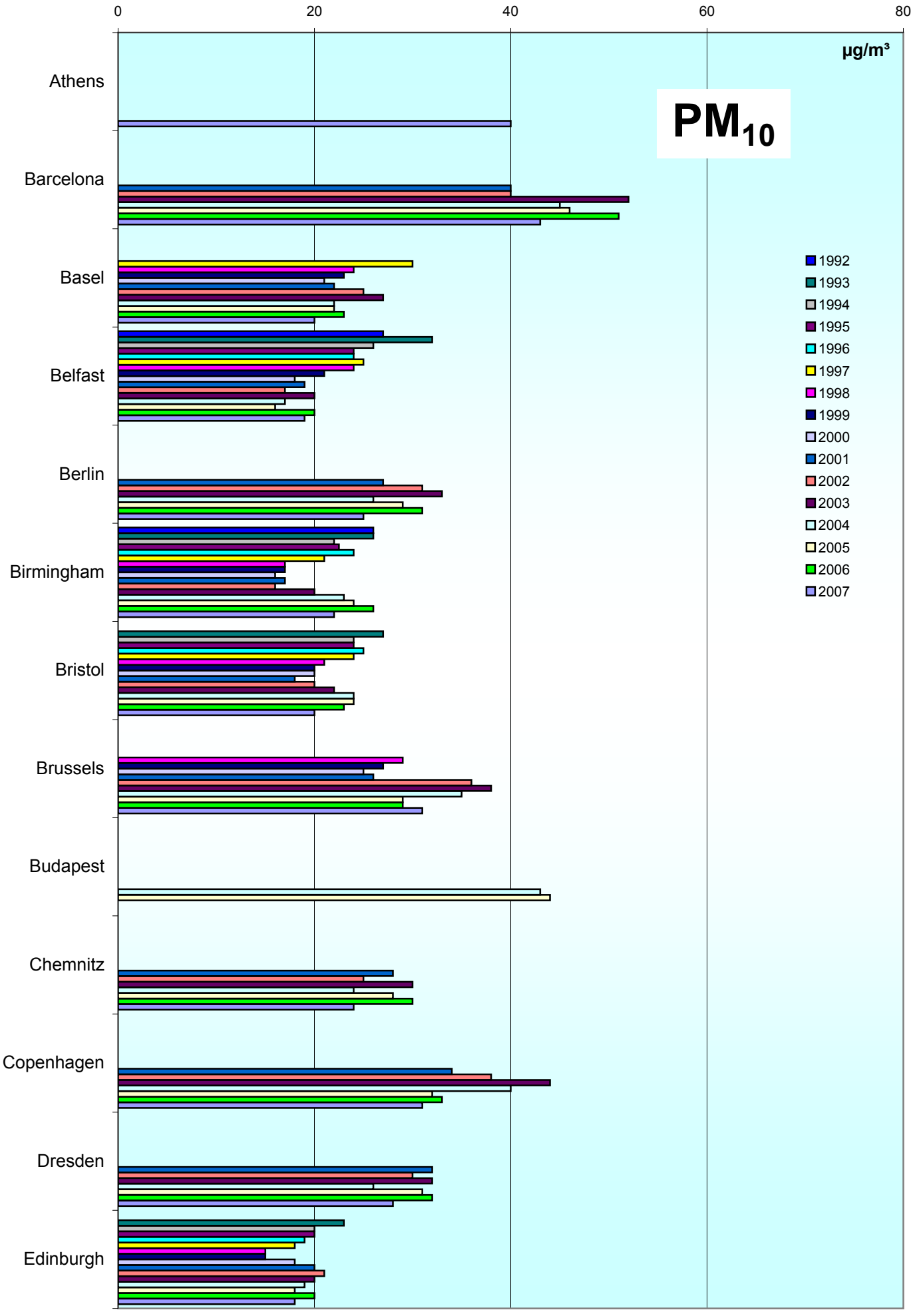
Comparison of The Air Quality 1992 - 2007

Annual mean values (mean of all monitoring stations)



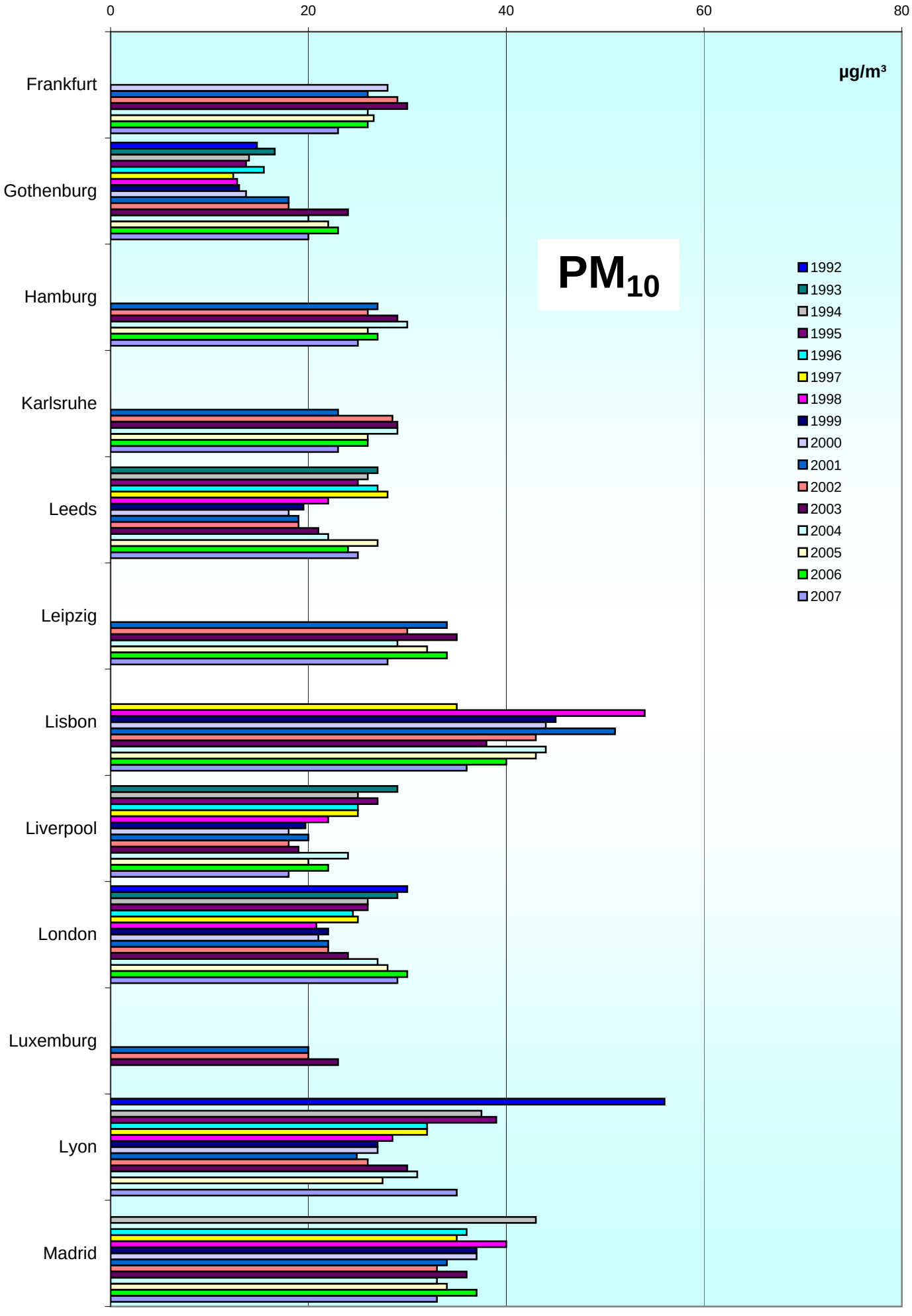
Comparison of The Air Quality 1992 - 2007

Annual mean values (mean of all monitoring stations)



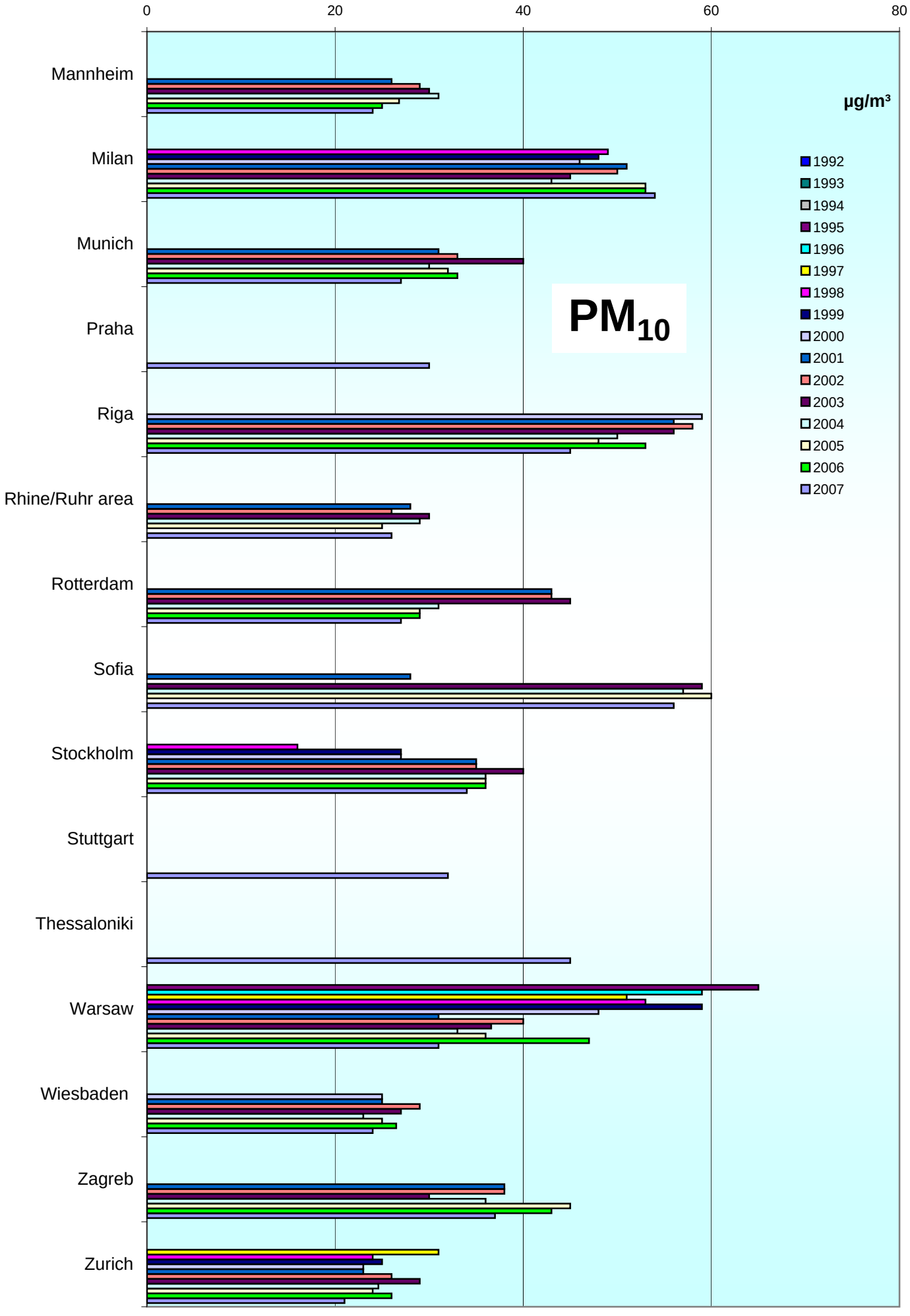
Comparison of The Air Quality 1992 - 2007

Annual mean values (mean of all monitoring stations)



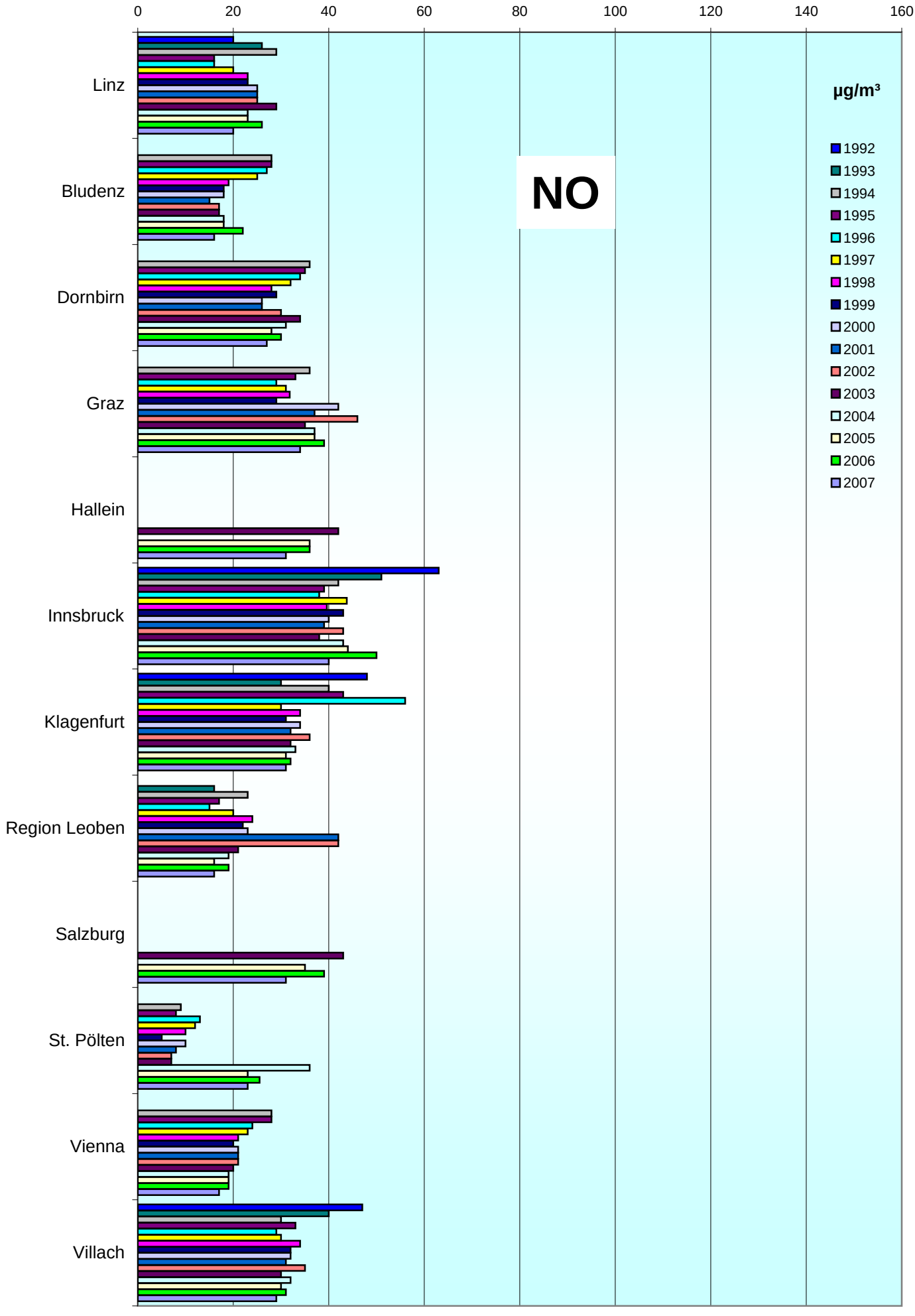
Comparison of The Air Quality 1992 - 2007

Annual mean values (mean of all monitoring stations)



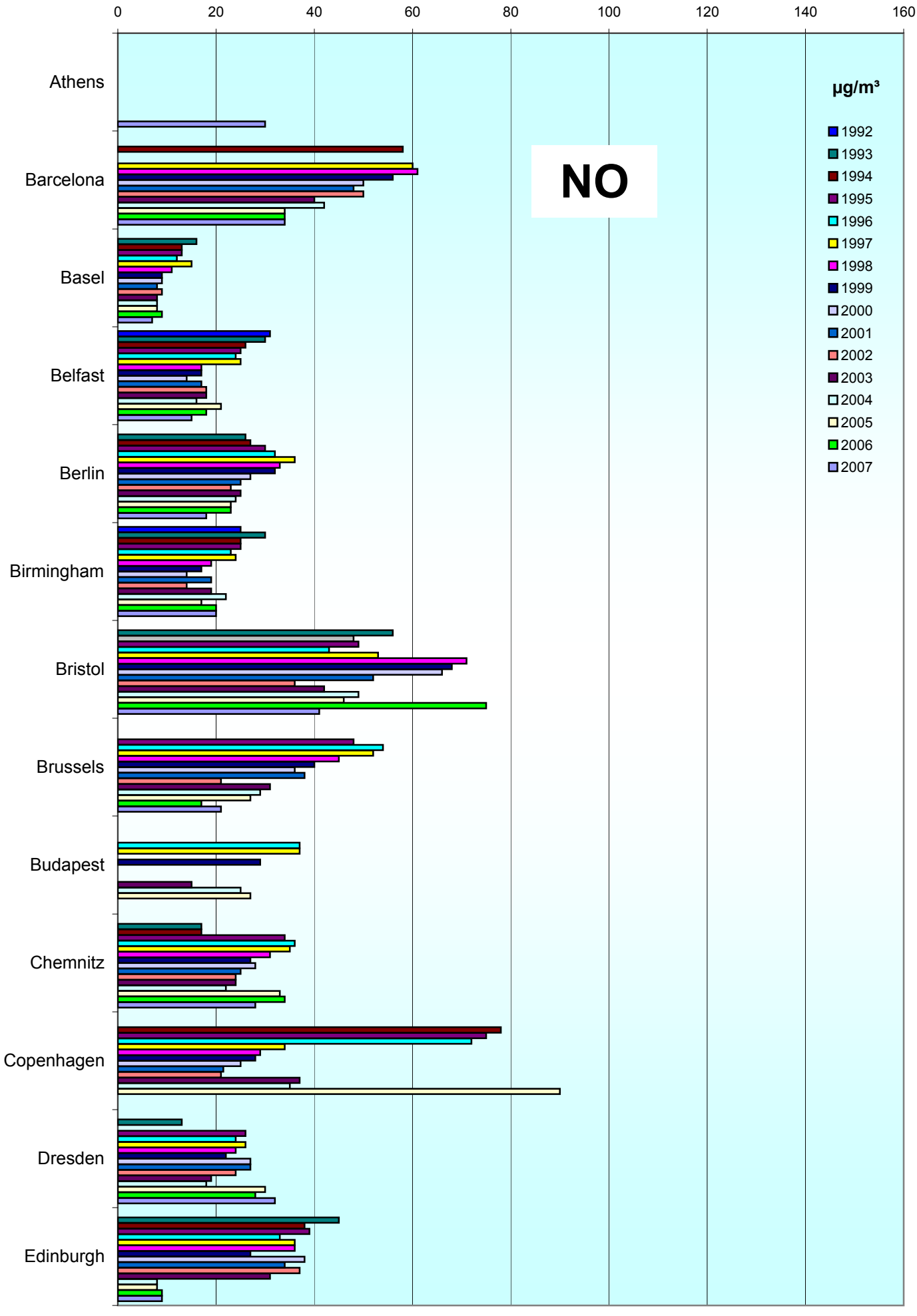
Comparison of The Air Quality 1992 - 2007

Annual mean values (mean of all monitoring stations)



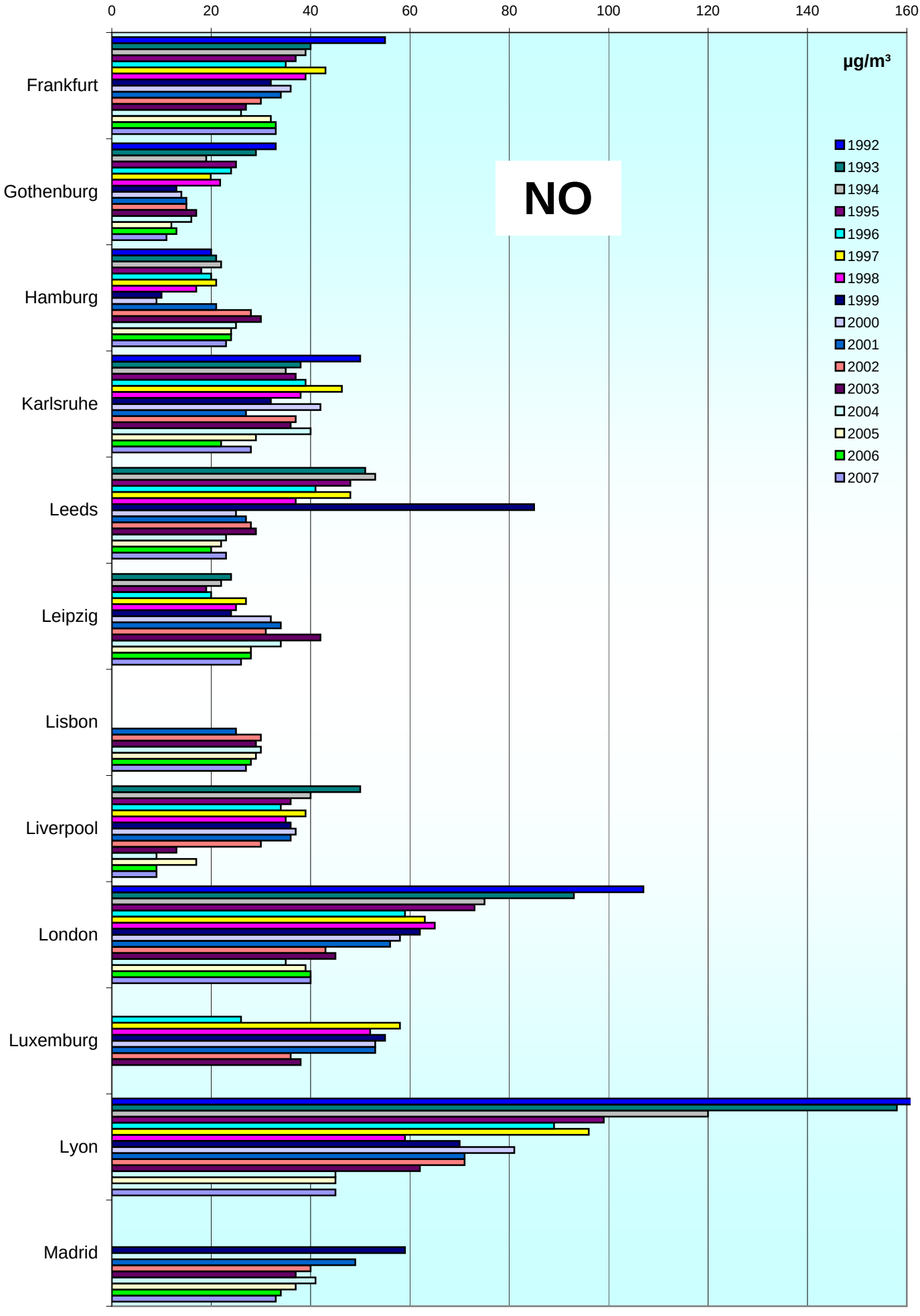
Comparison of The Air Quality 1992 - 2007

Annual mean values (mean of all monitoring stations)



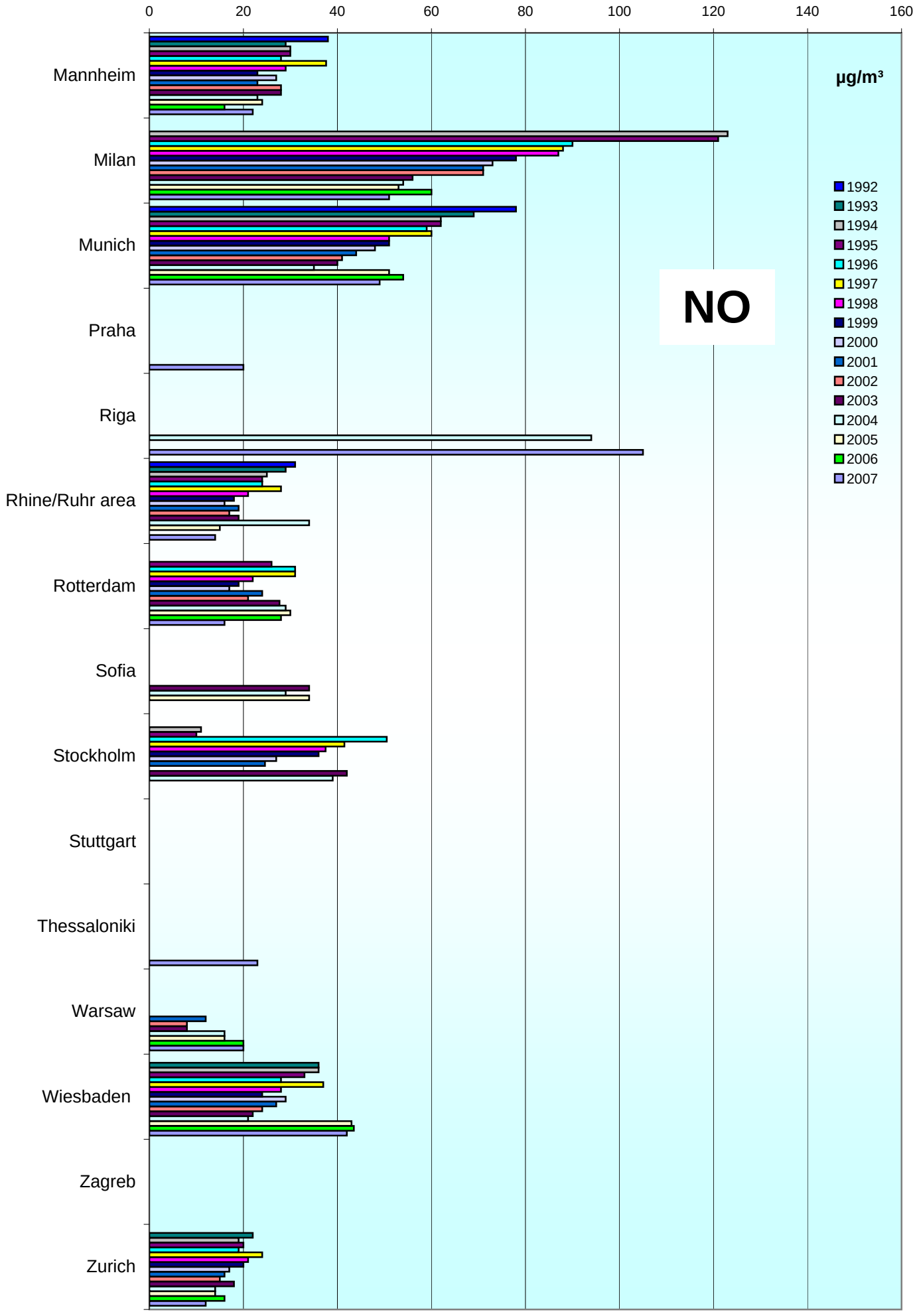
Comparison of The Air Quality 1992 - 2007

Annual mean values (mean of all monitoring stations)



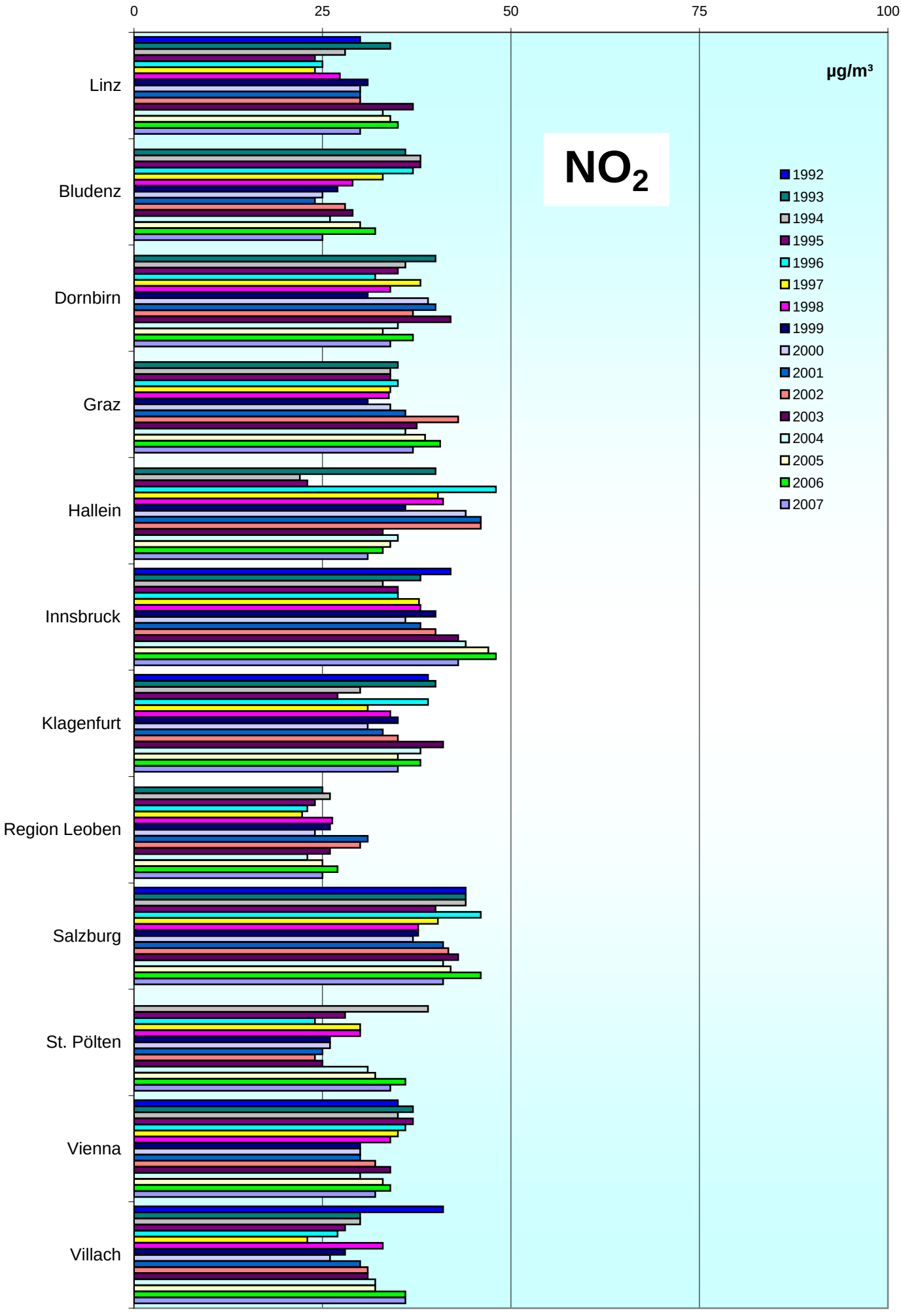
Comparison of The Air Quality 1992 - 2007

Annual mean values (mean of all monitoring stations)



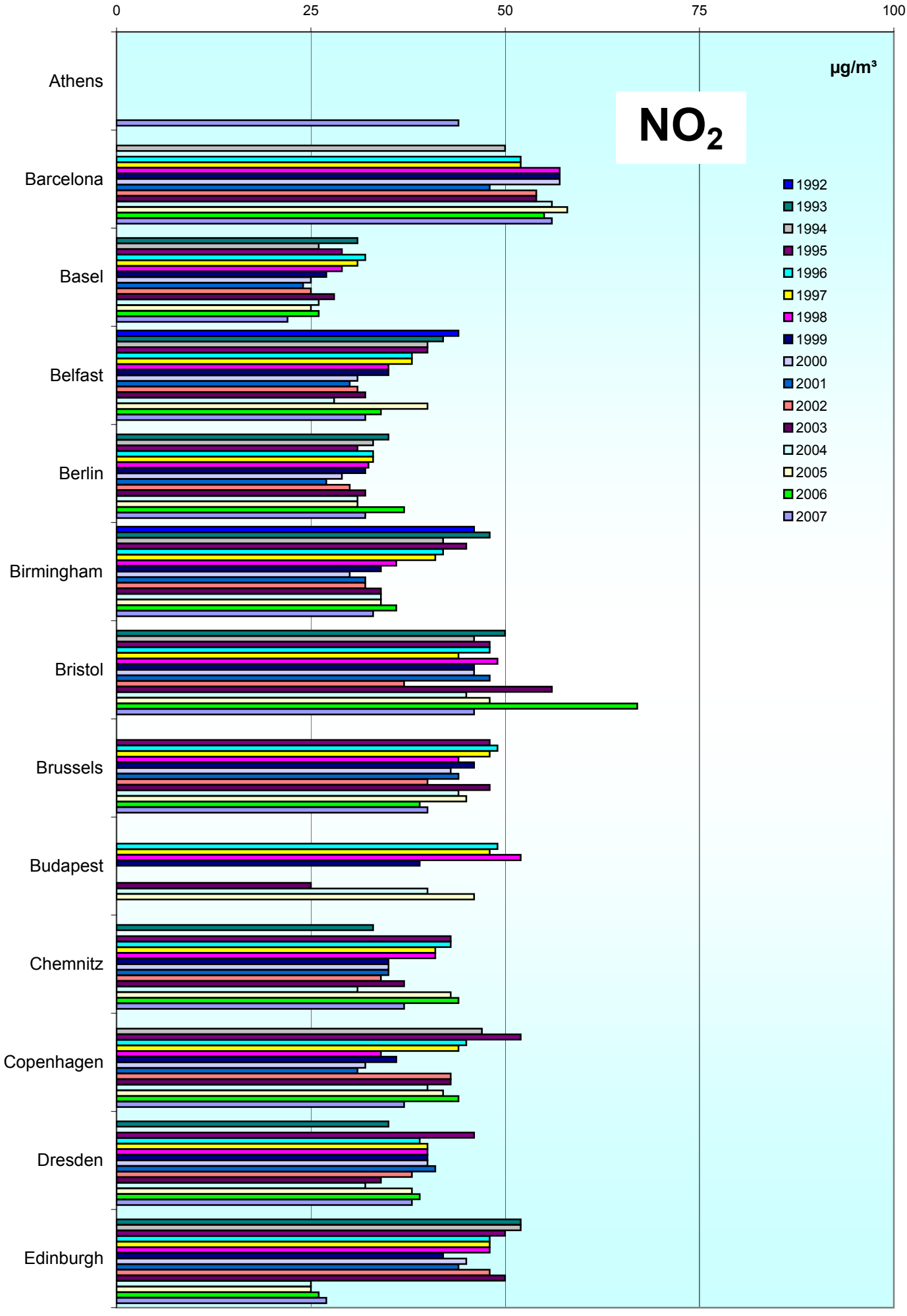
Comparison of The Air Quality 1992 - 2007

Annual mean values (mean of all monitoring stations)



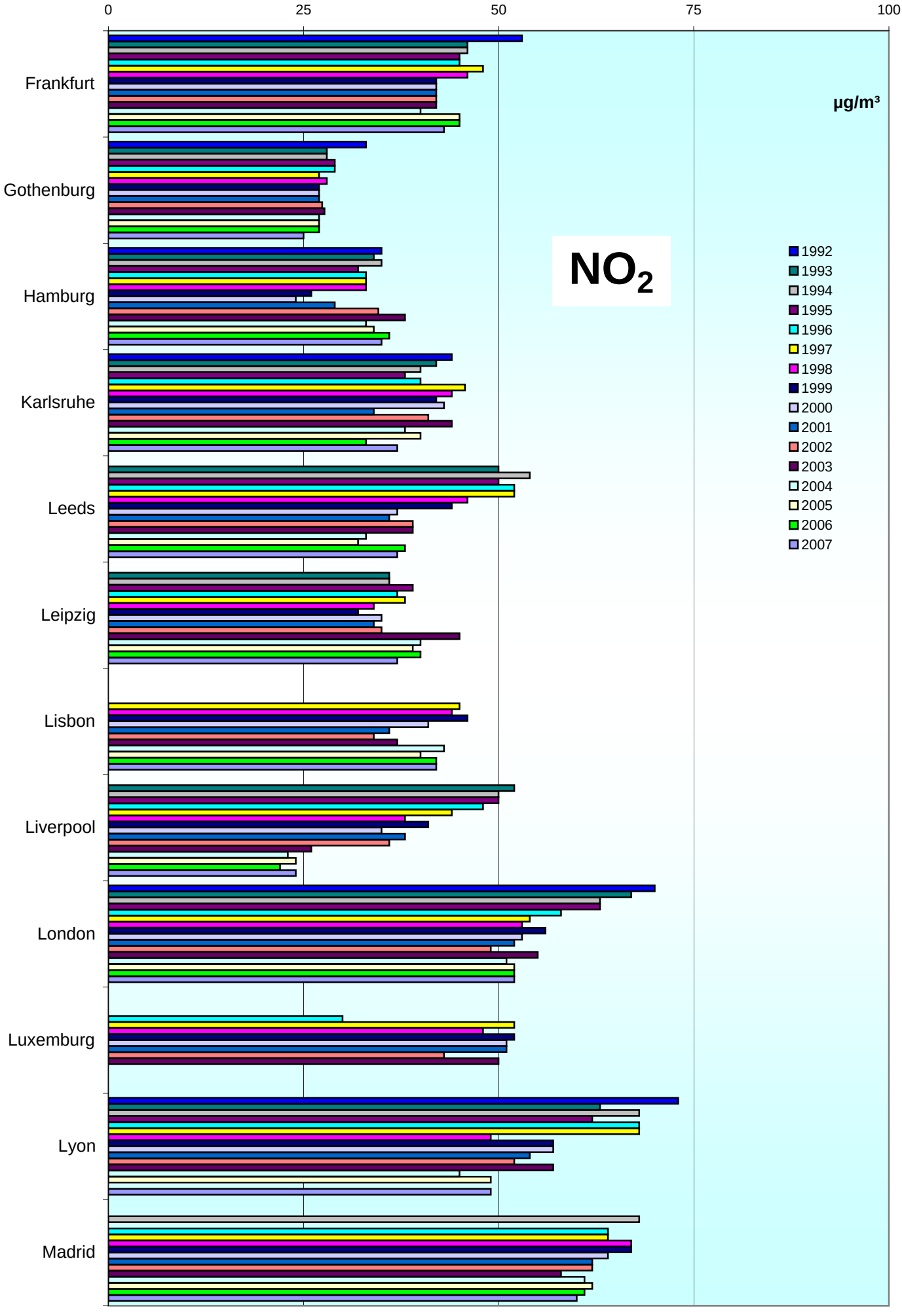
Comparison of The Air Quality 1992 - 2007

Annual mean values (mean of all monitoring stations)



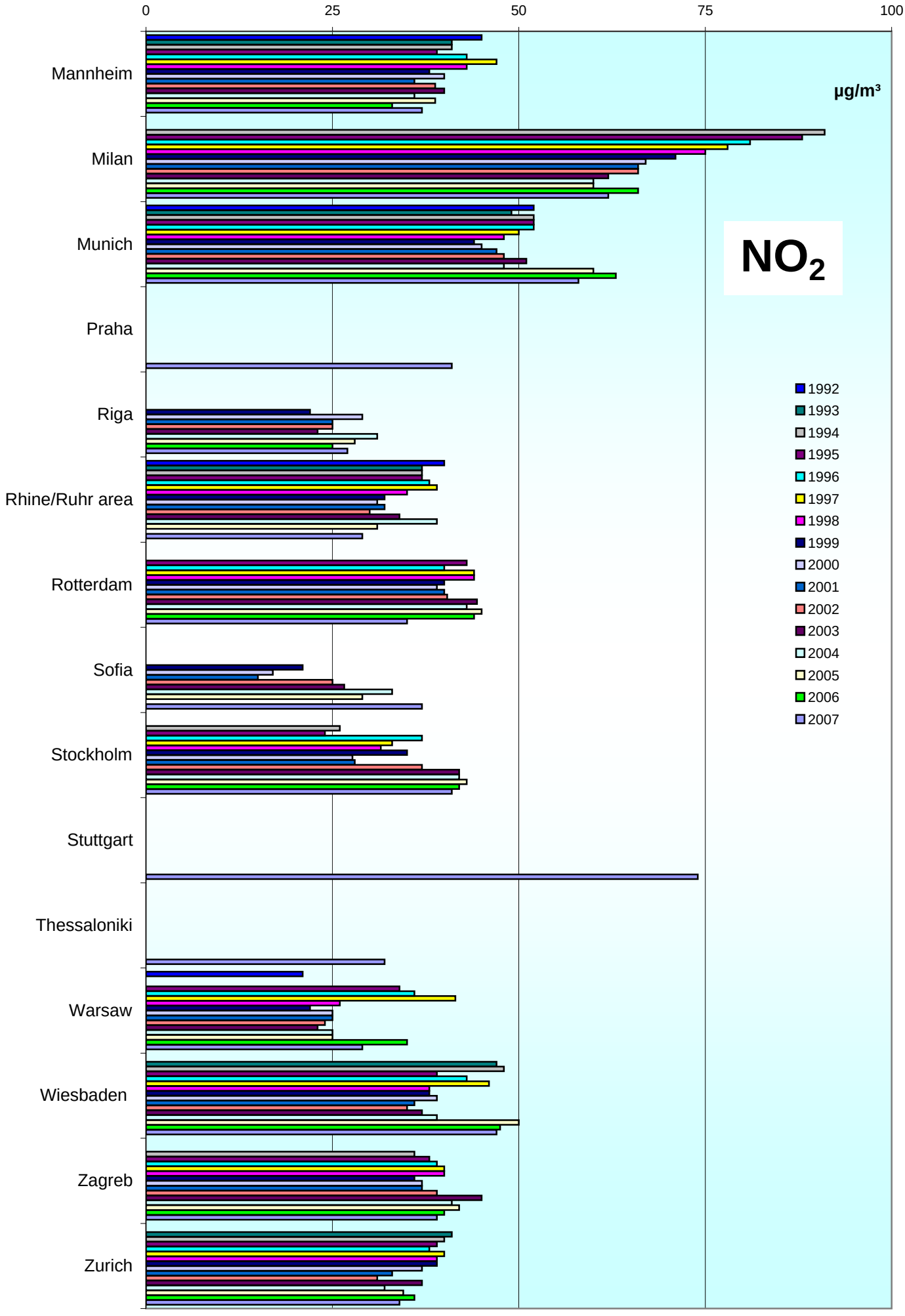
Comparison of The Air Quality 1992 - 2007

Annual mean values (mean of all monitoring stations)



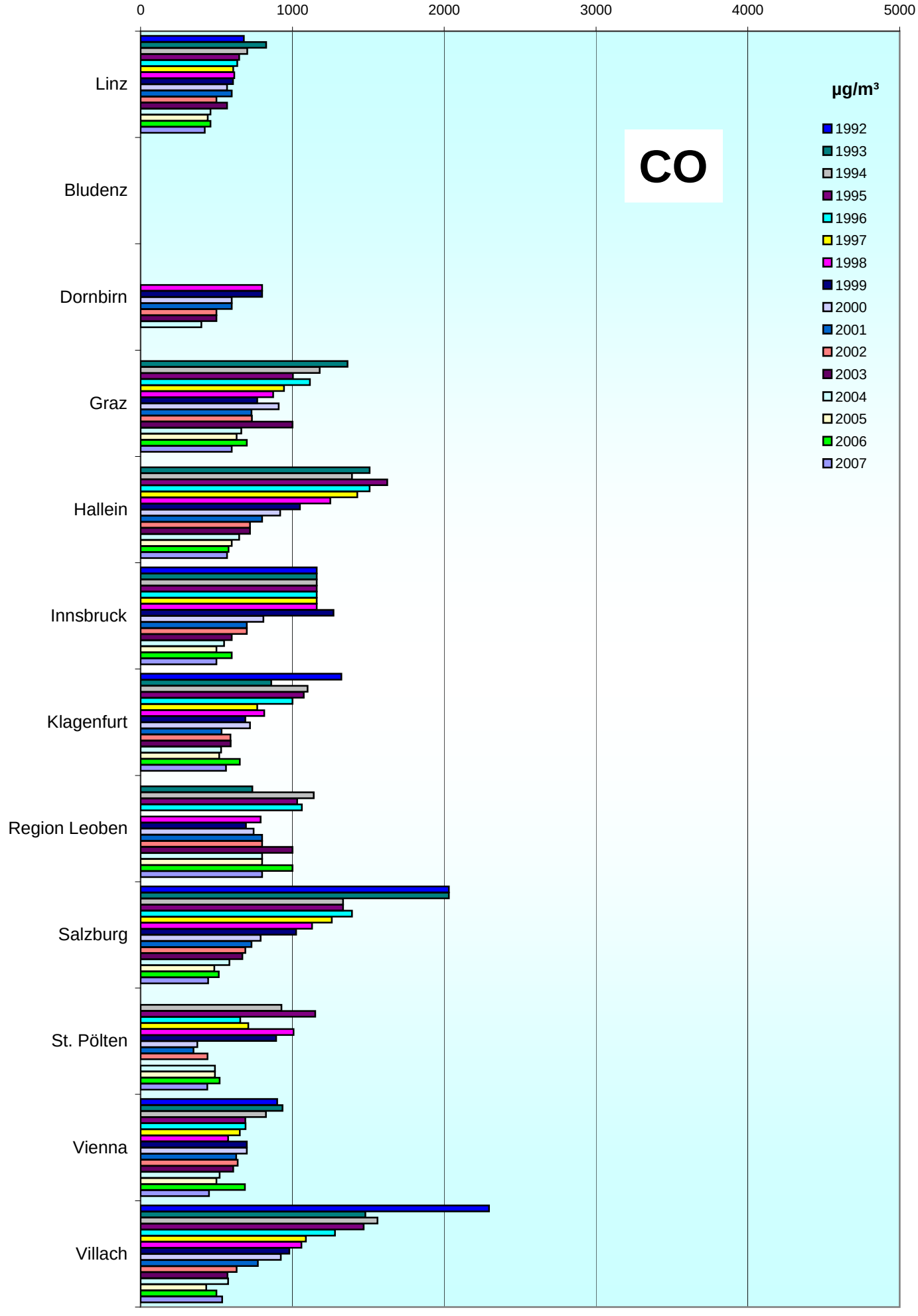
Comparison of The Air Quality 1992 - 2007

Annual mean values (mean of all monitoring stations)



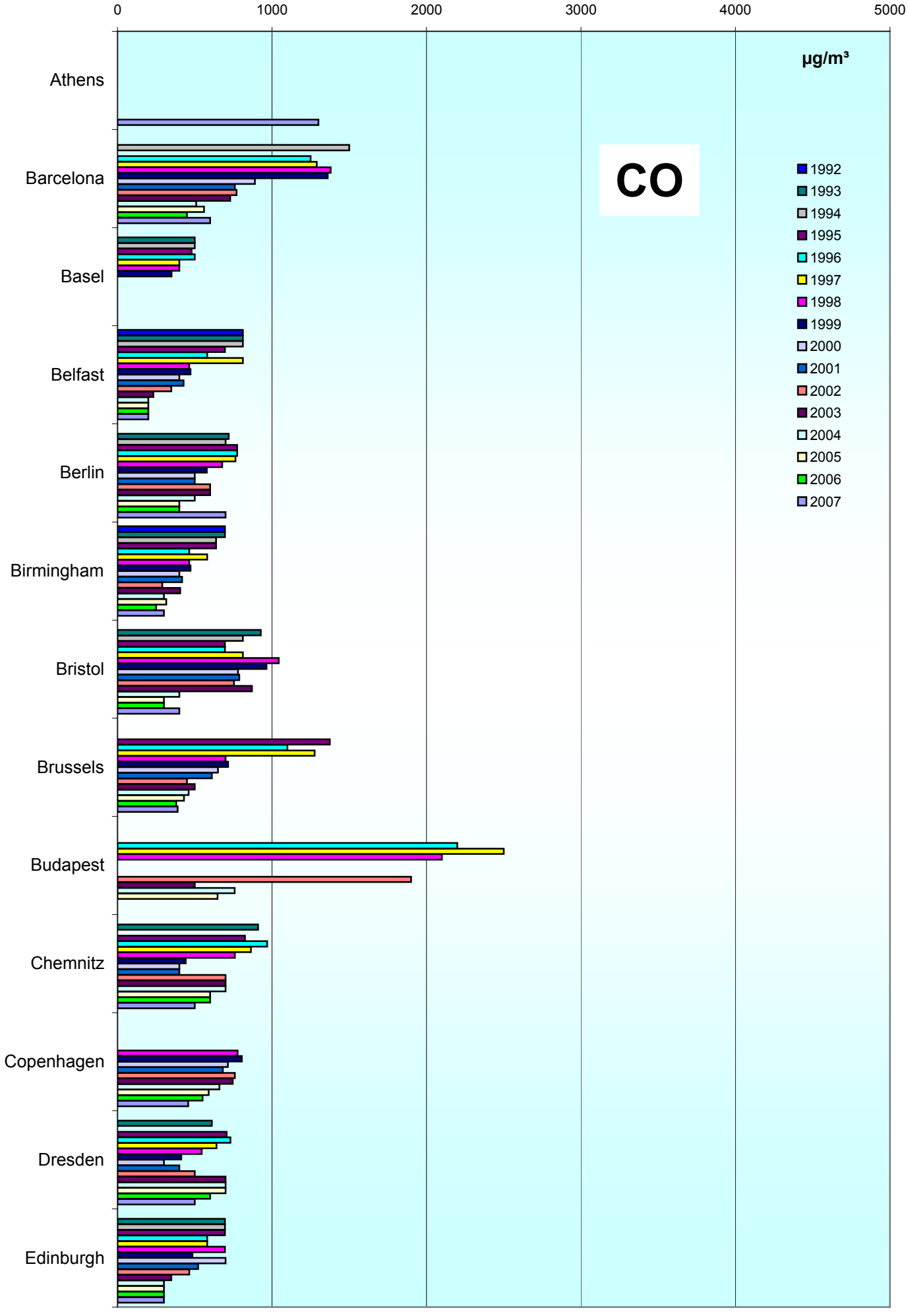
Comparison of The Air Quality 1992 - 2007

Annual mean values (mean of all monitoring stations)



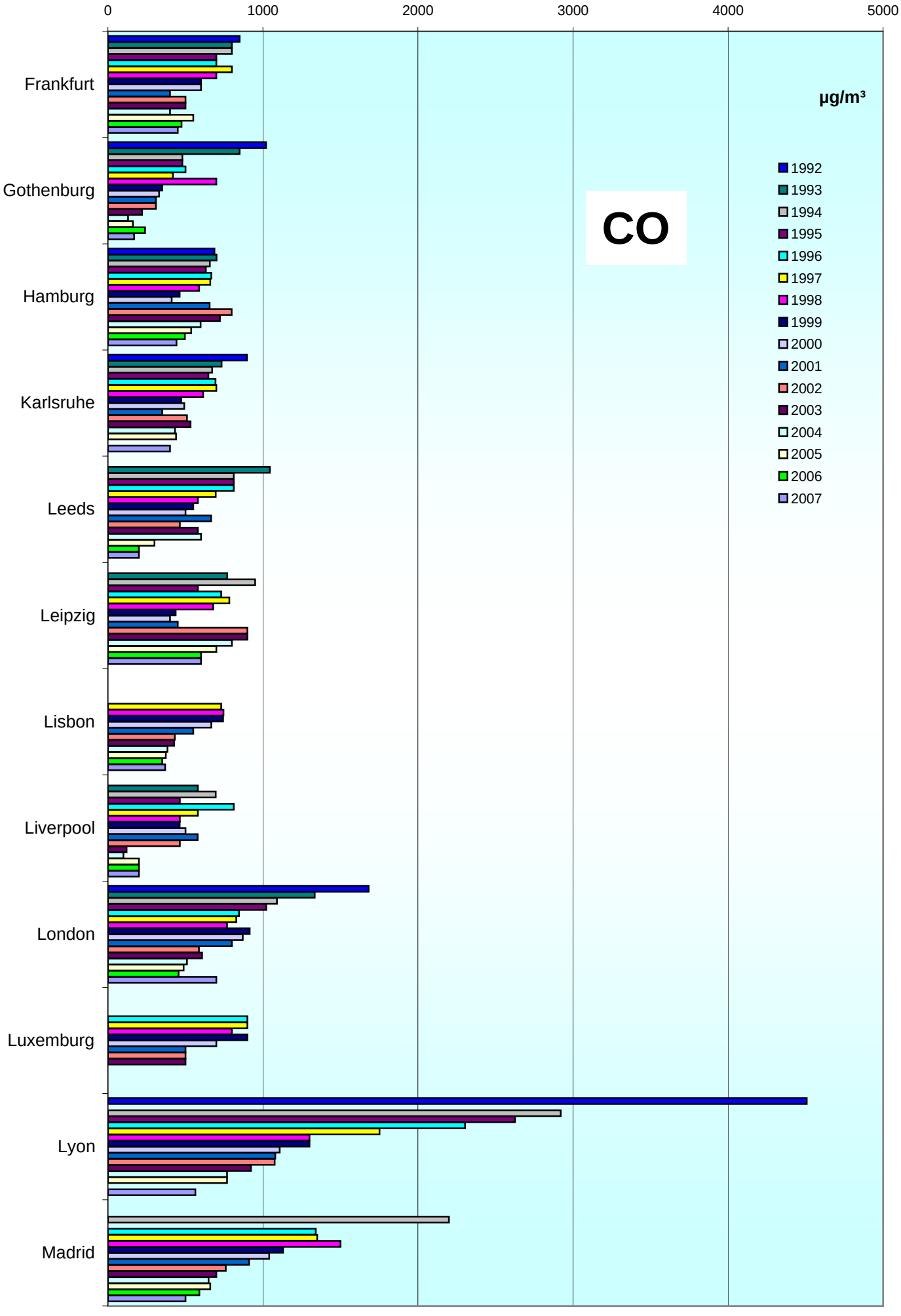
Comparison of The Air Quality 1992 - 2007

Annual mean values (mean of all monitoring stations)



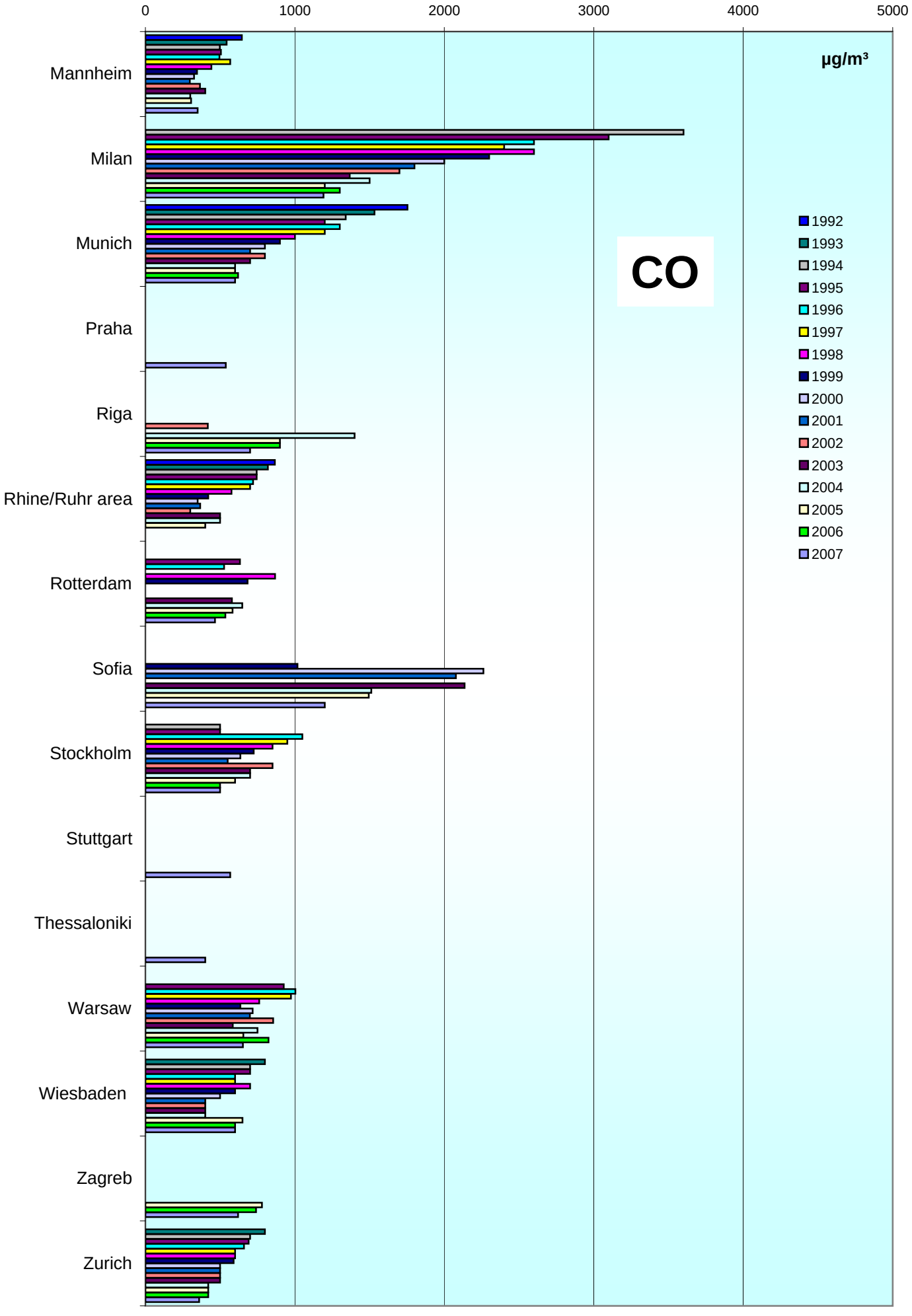
Comparison of The Air Quality 1992 - 2007

Annual mean values (mean of all monitoring stations)



Comparison of The Air Quality 1992 - 2007

Annual mean values (mean of all monitoring stations)



Jahresvergleich

1992 - 2007

max. Tagesmittelwerte

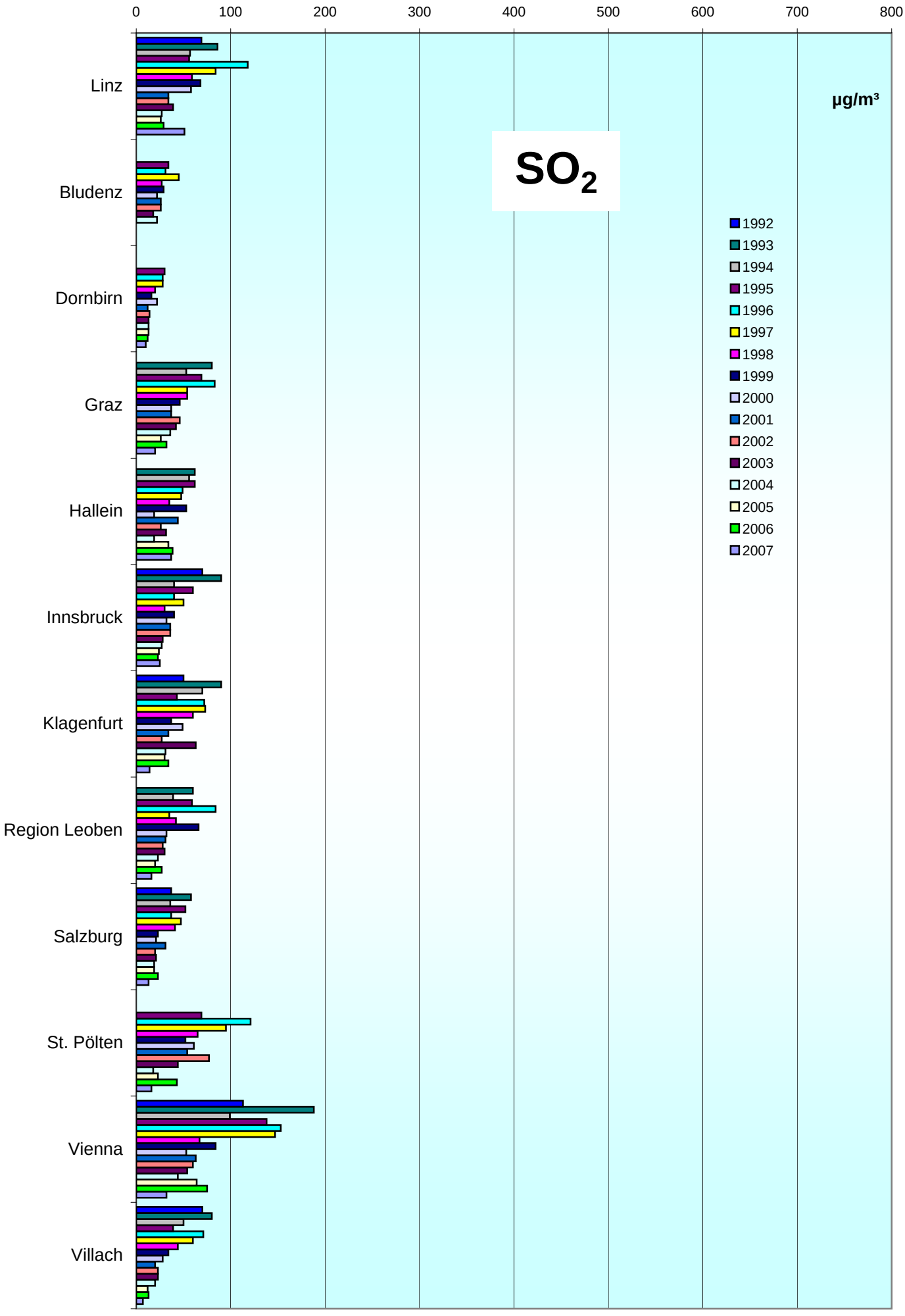
Comparison of The Air Quality Over The Years

1992 - 2007

Max. Daily Mean Values

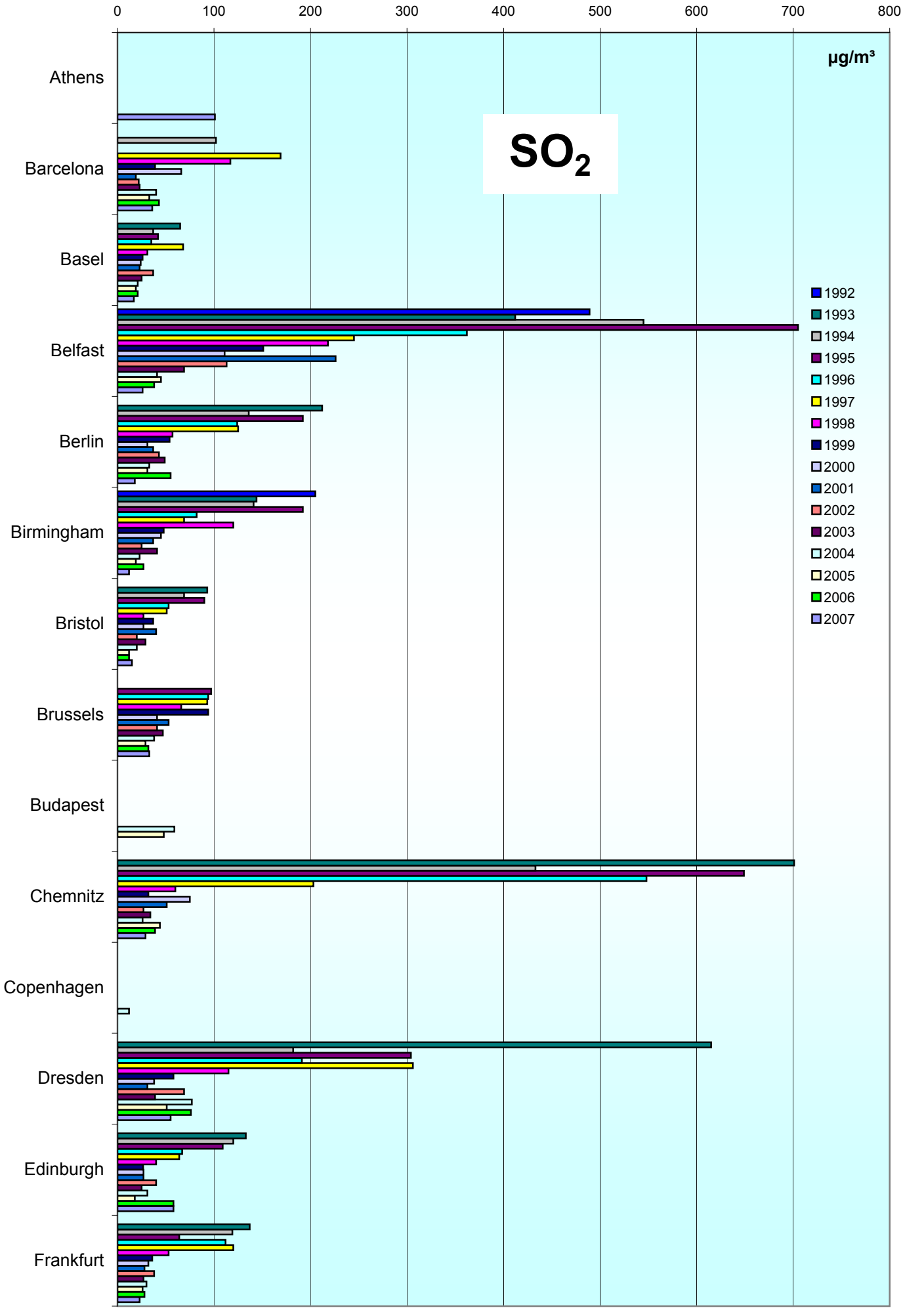
Comparison of The Air Quality 1992 - 2007

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



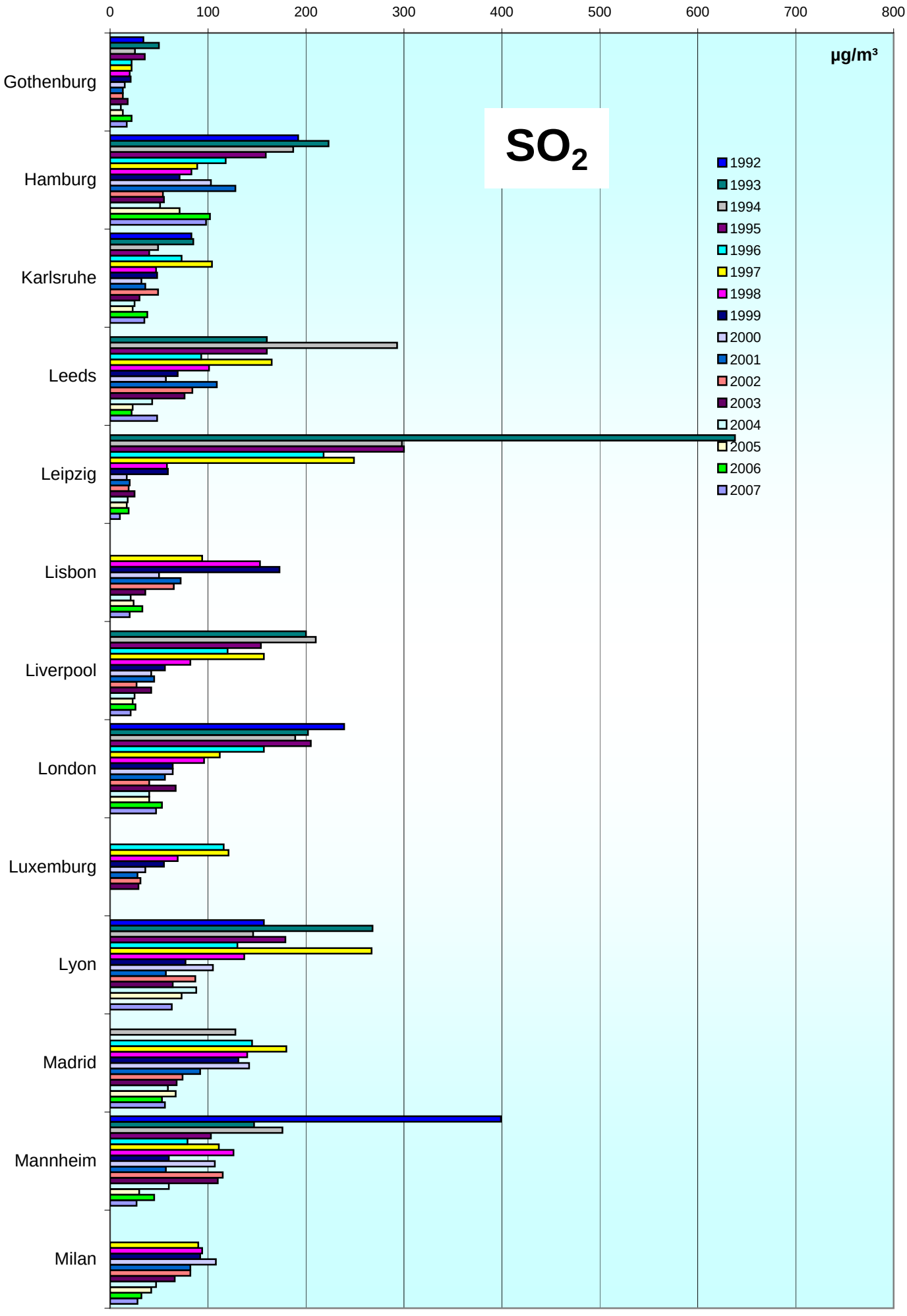
Comparison of The Air Quality 1992 - 2007

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



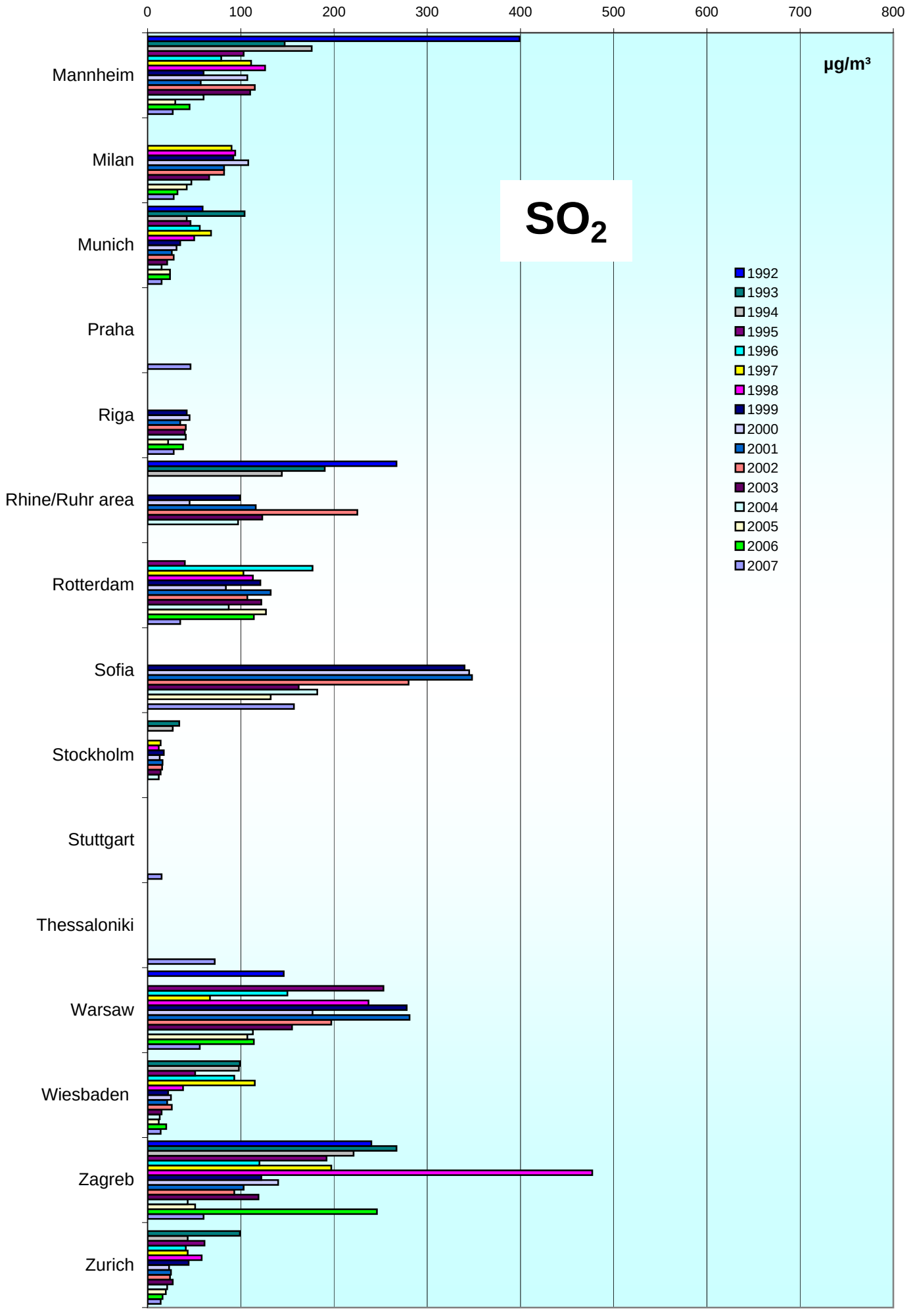
Comparison of The Air Quality 1992 - 2007

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



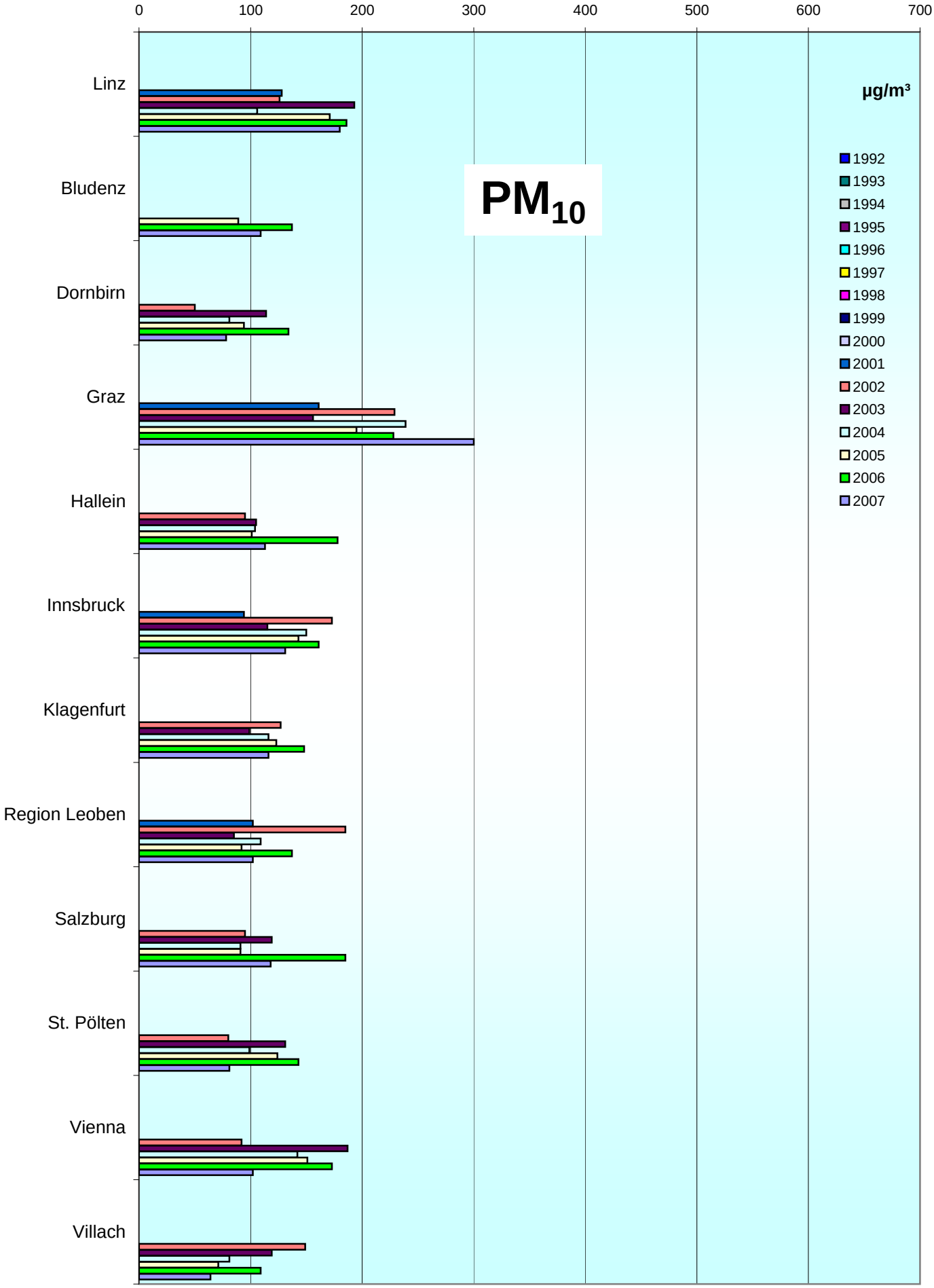
Comparison of The Air Quality 1992 - 2007

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



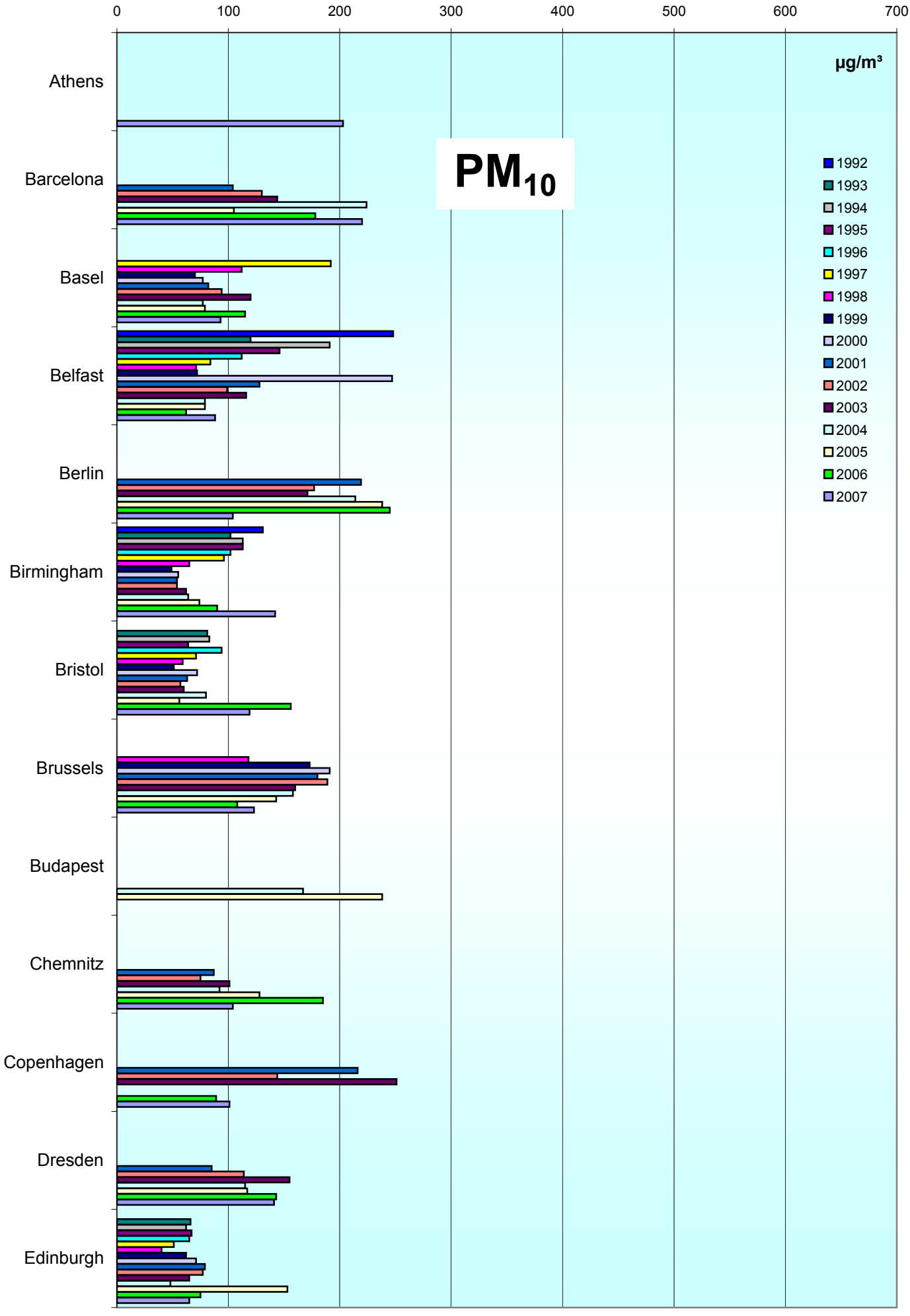
Comparison of The Air Quality 1992 - 2007

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



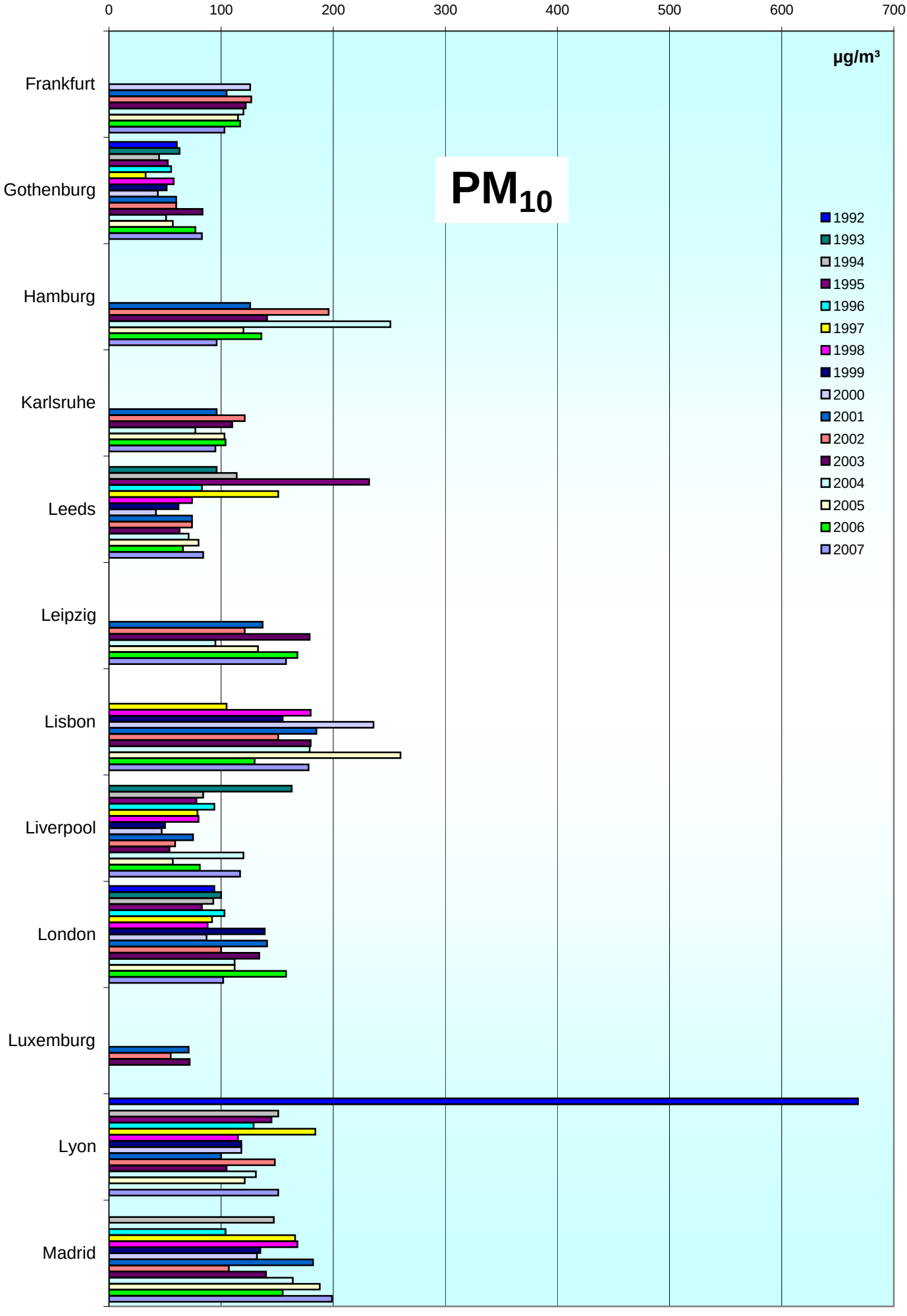
Comparison of The Air Quality 1992 - 2007

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



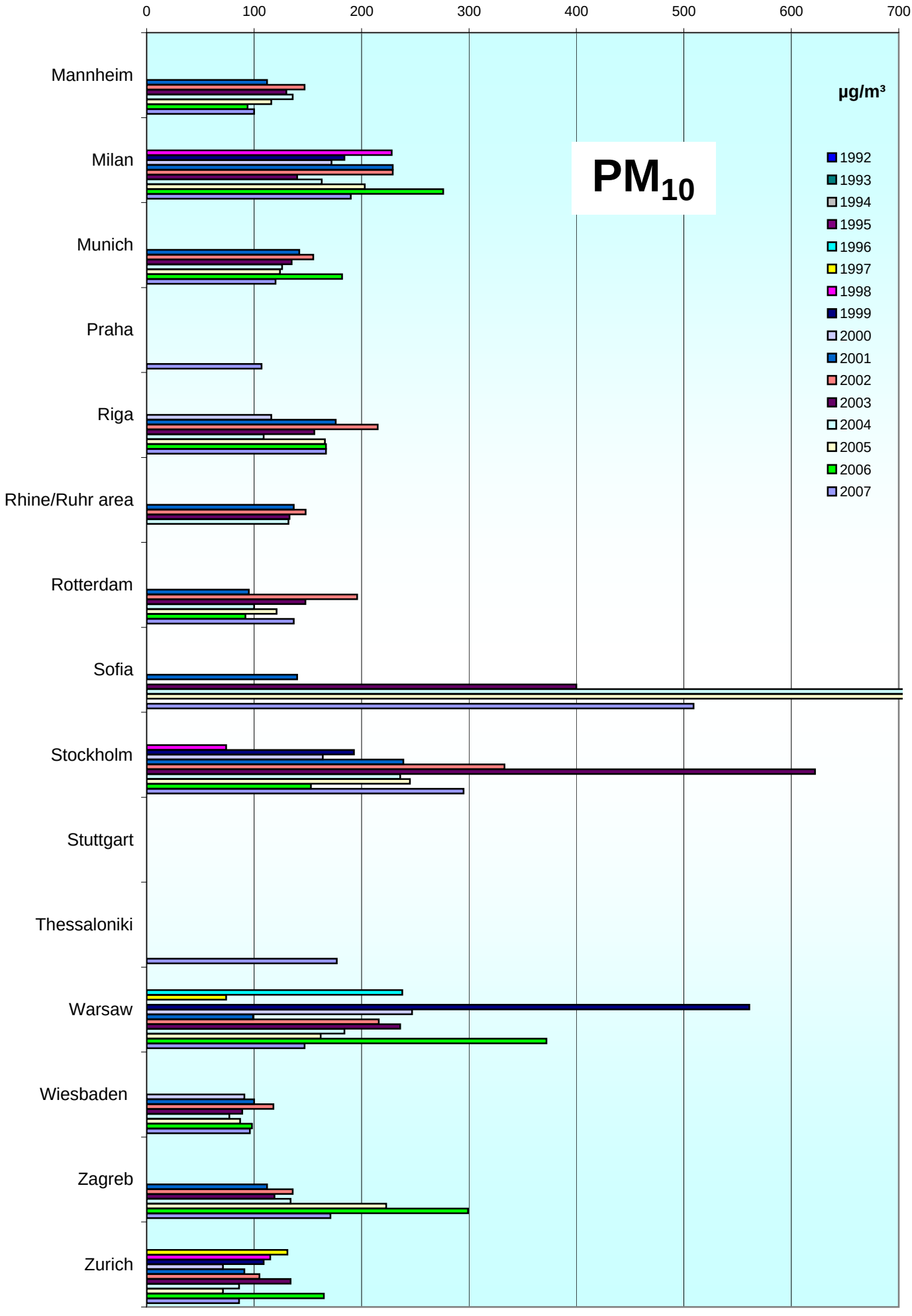
Comparison of The Air Quality 1992 - 2007

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



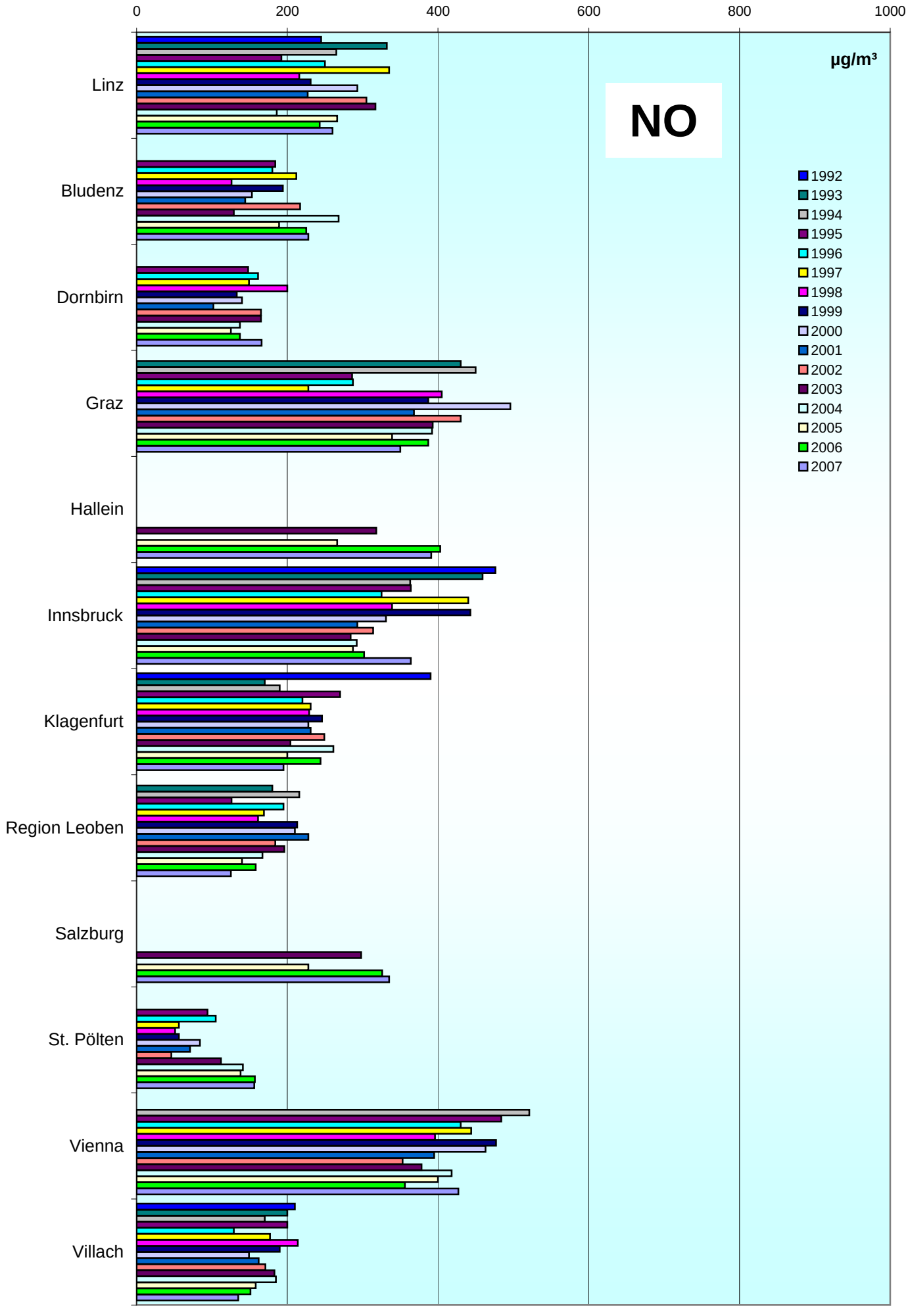
Comparison of The Air Quality 1992 - 2007

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



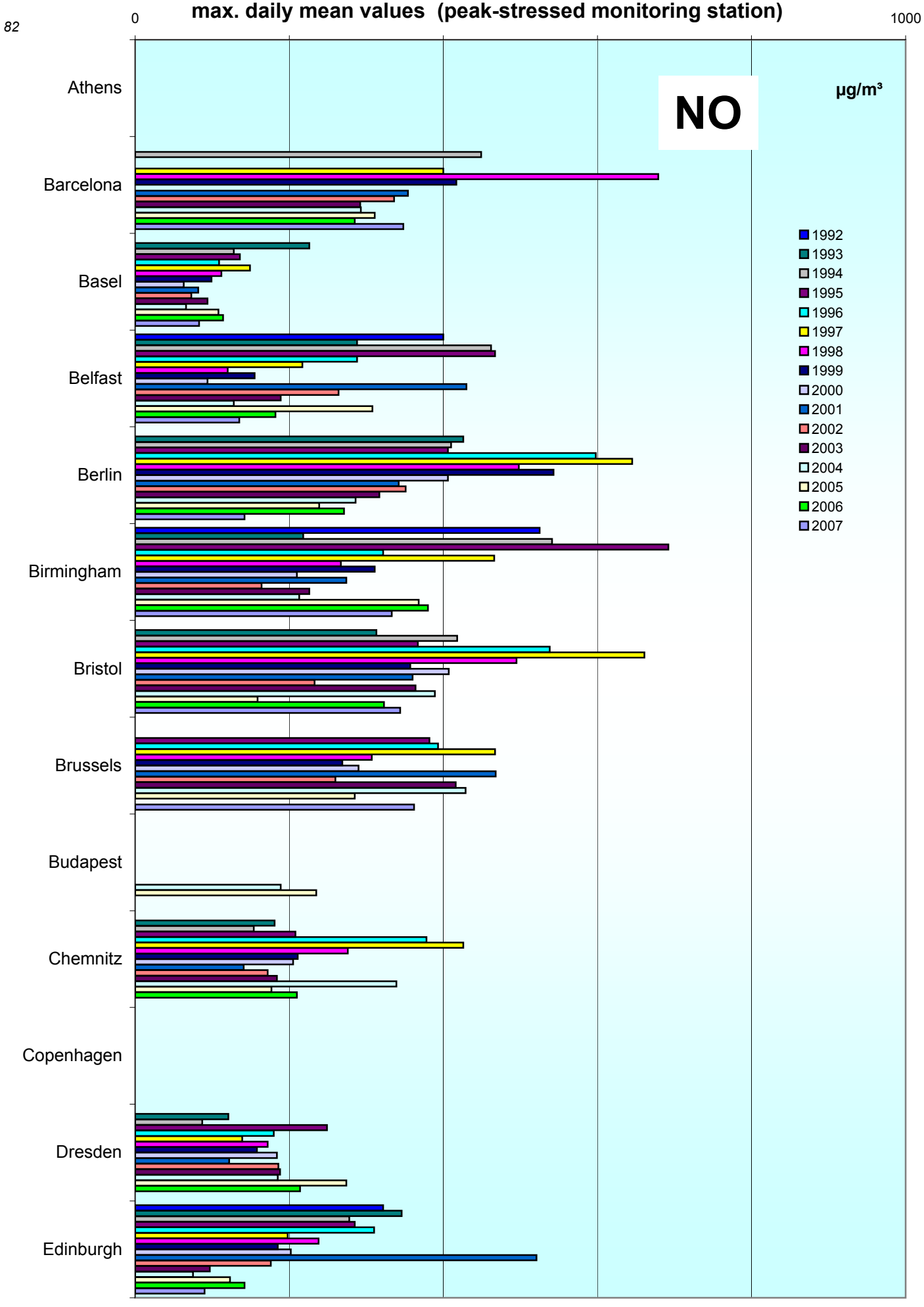
Comparison of The Air Quality 1992 - 2007

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



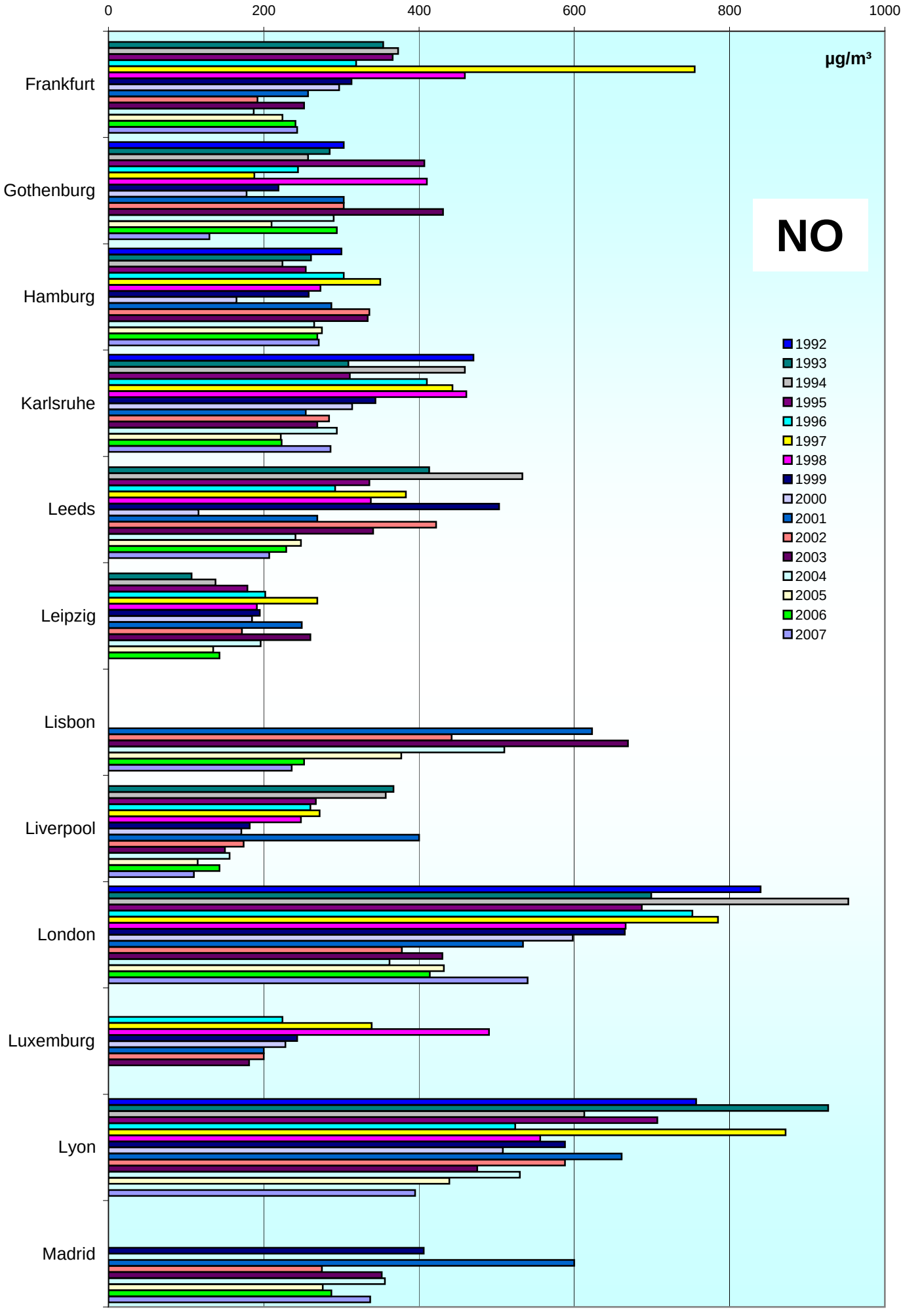
Comparison of The Air Quality 1992 - 2007

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



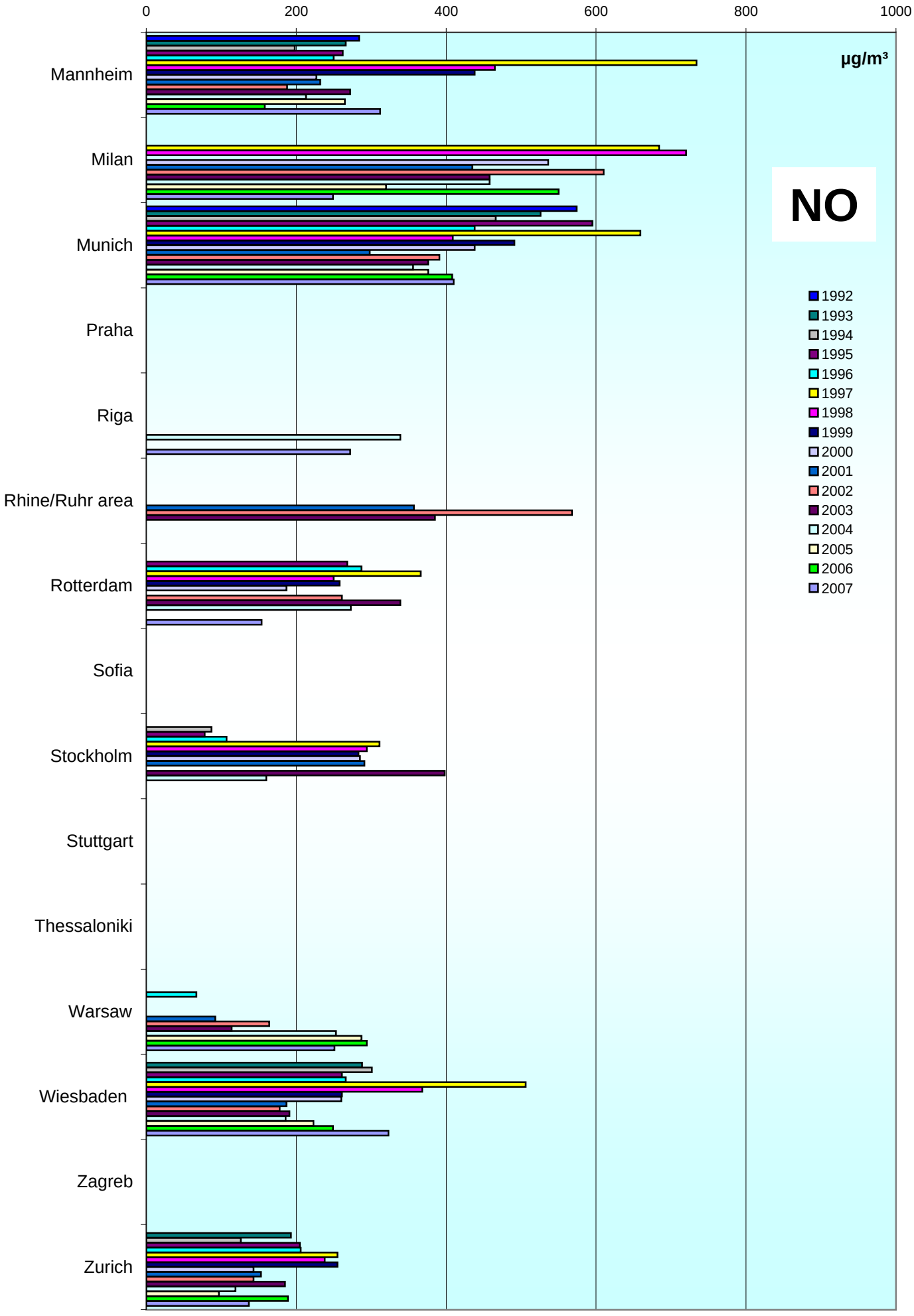
Comparison of The Air Quality 1992 - 2007

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



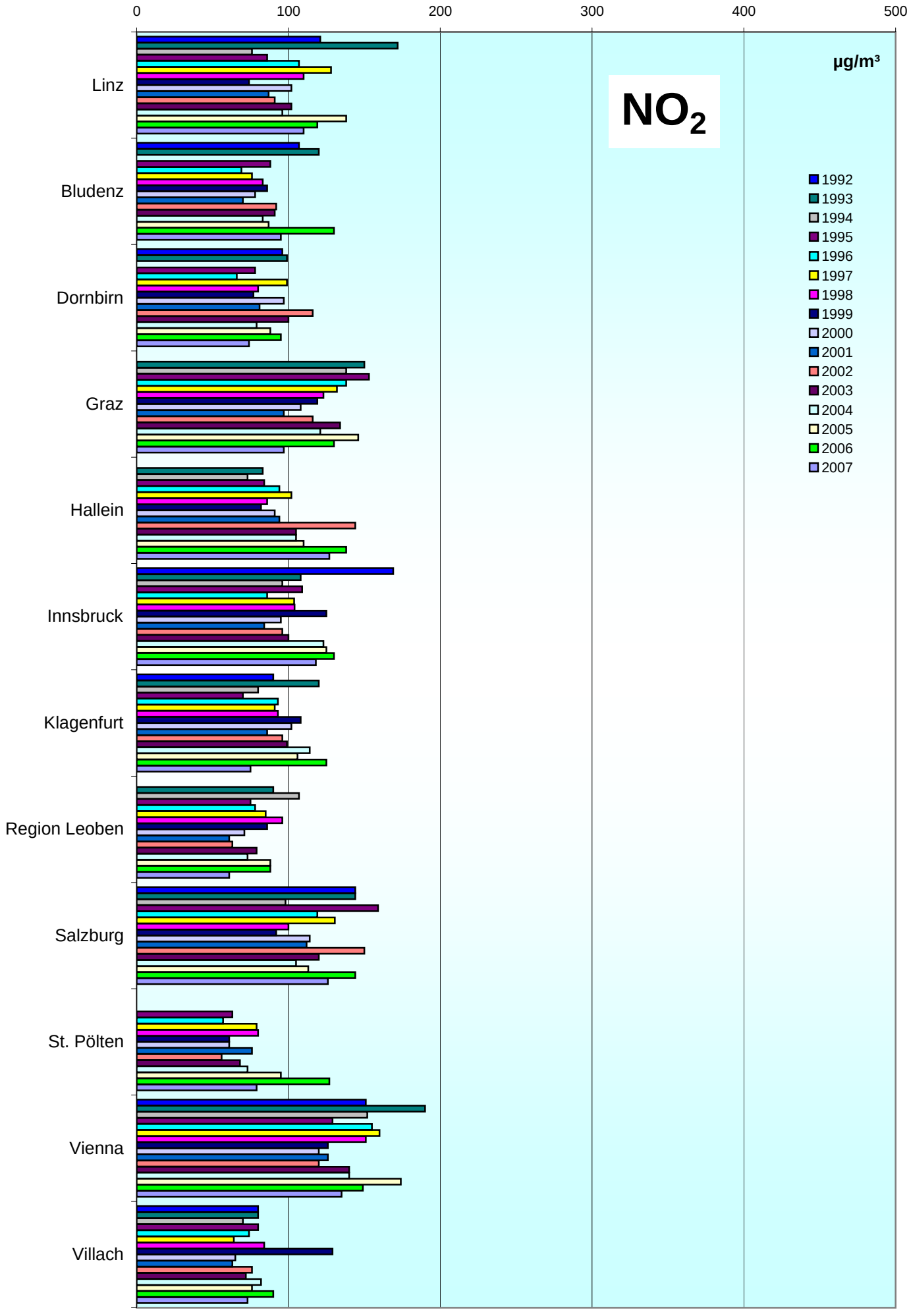
Comparison of The Air Quality 1992 - 2007

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



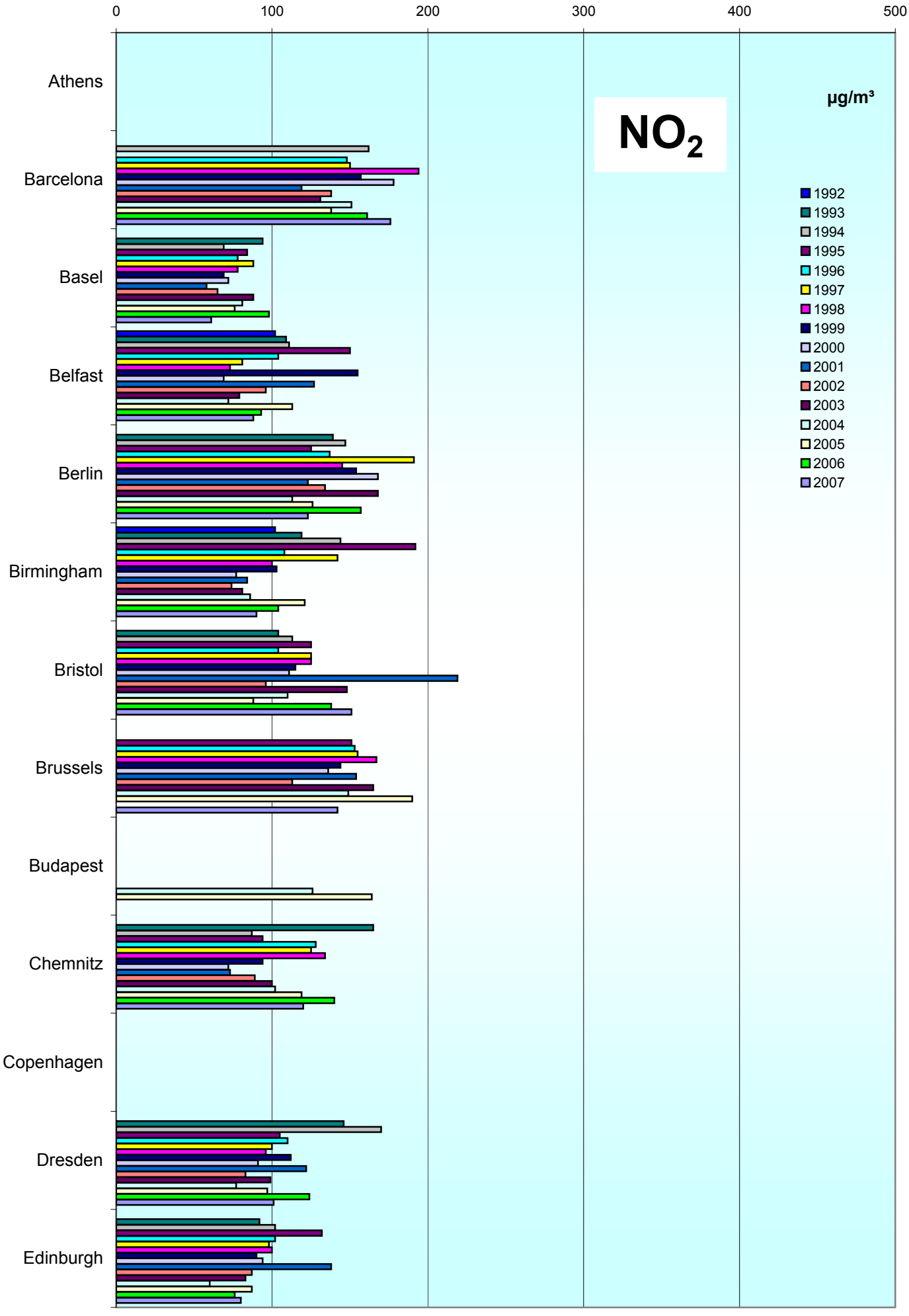
Comparison of The Air Quality 1992 - 2007

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



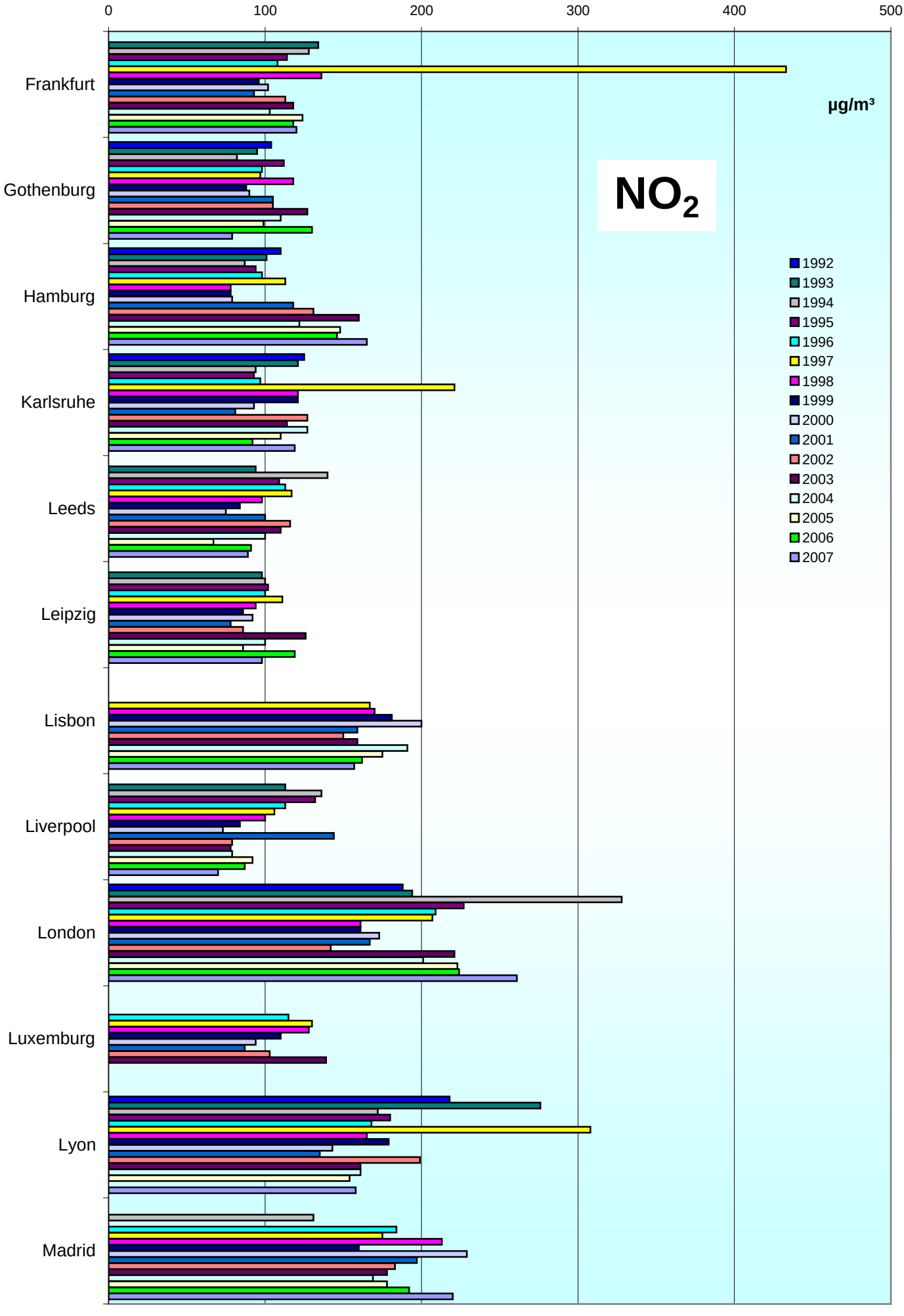
Comparison of The Air Quality 1992 - 2007

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



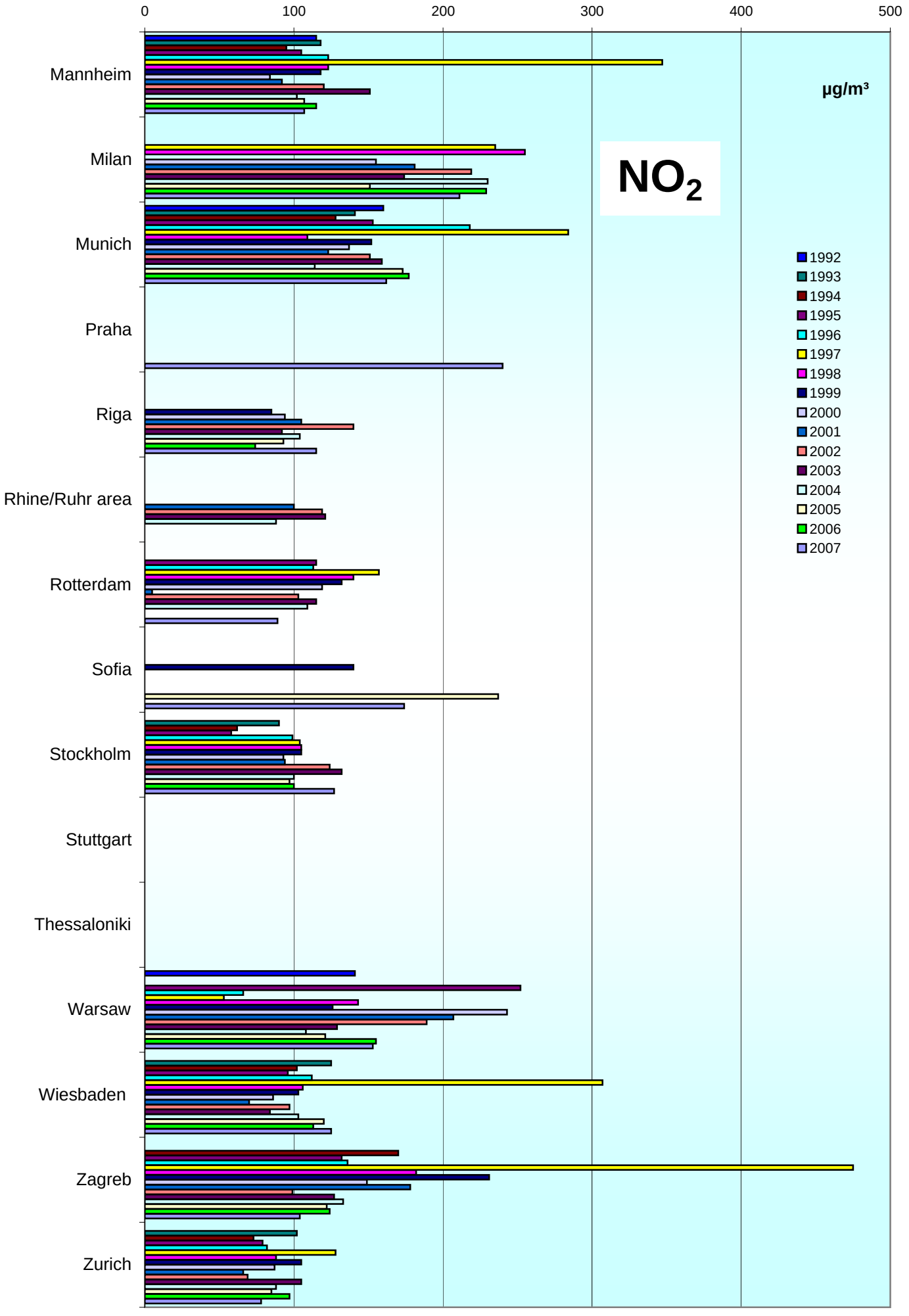
Comparison of The Air Quality 1992 - 2007

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



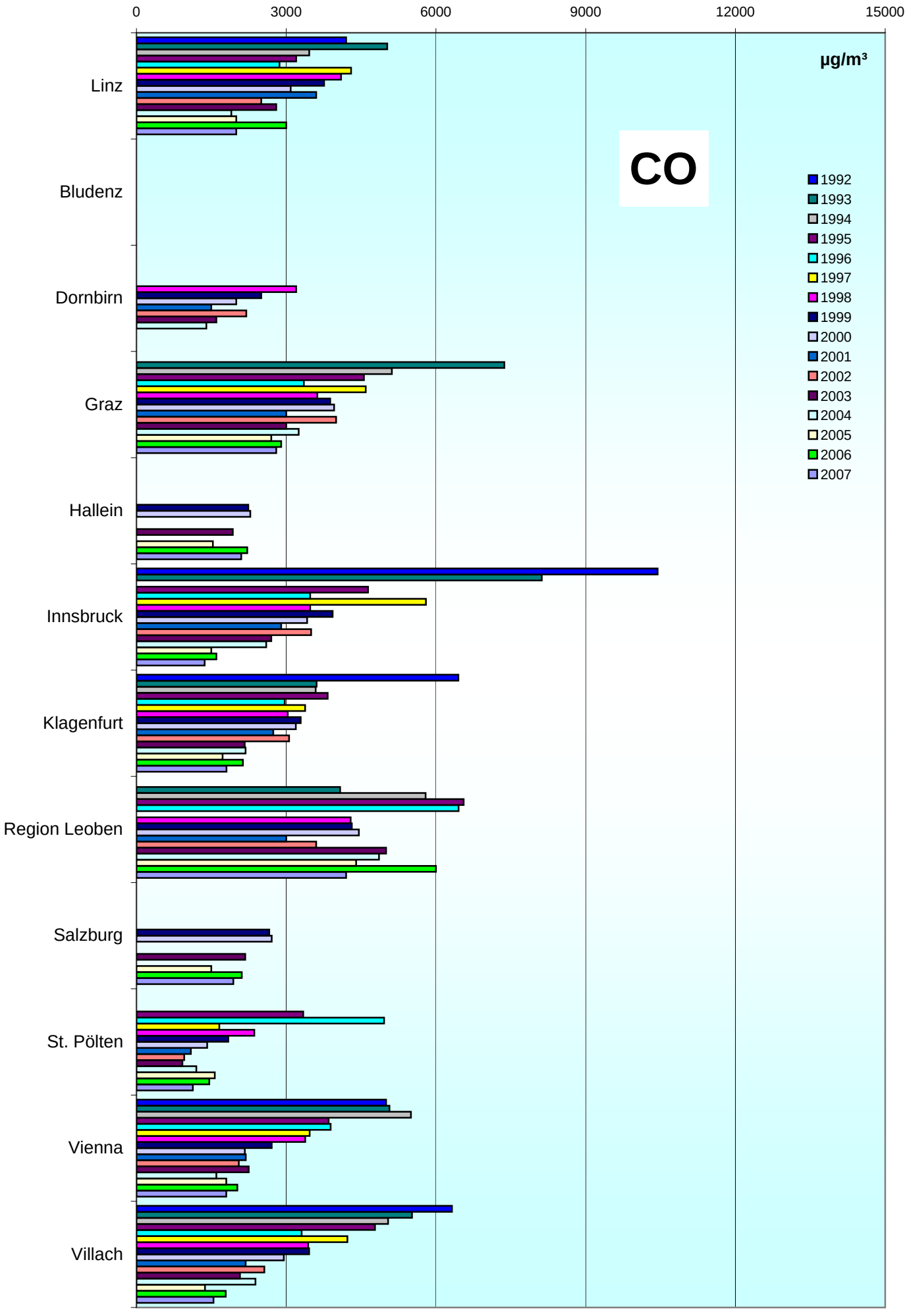
Comparison of The Air Quality 1992 - 2007

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



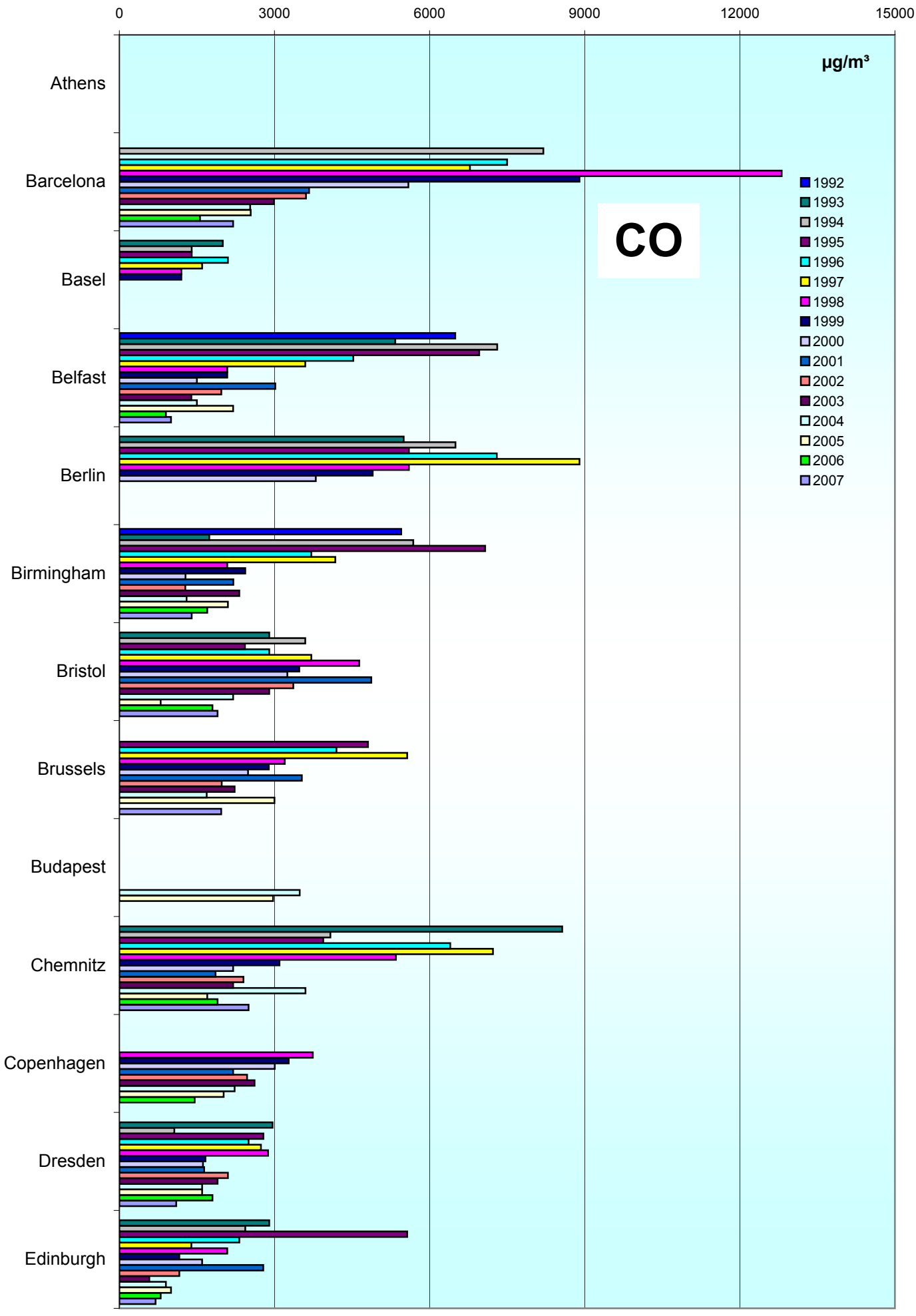
Comparison of The Air Quality 1992 - 2007

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



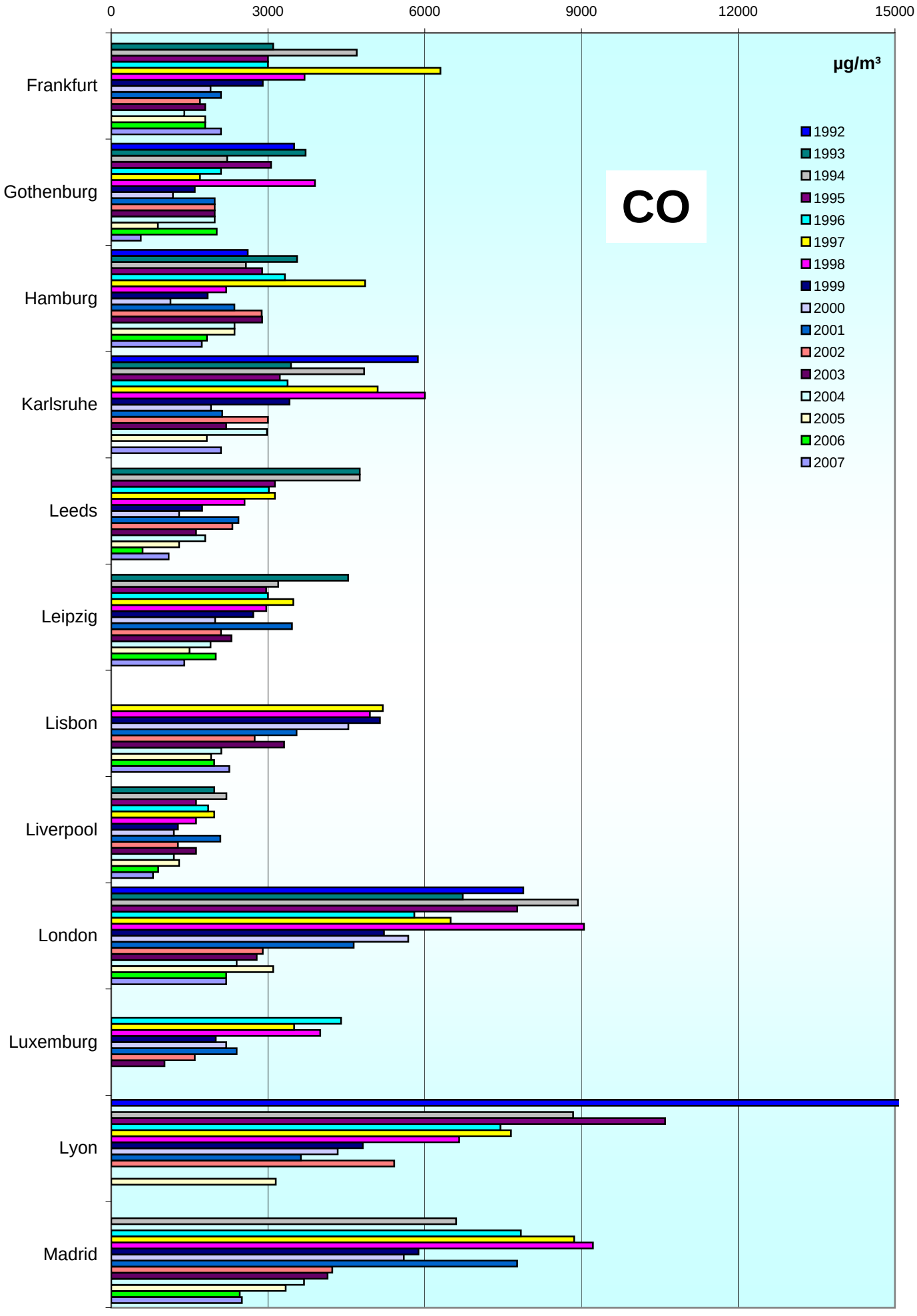
Comparison of The Air Quality 1992 - 2007

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



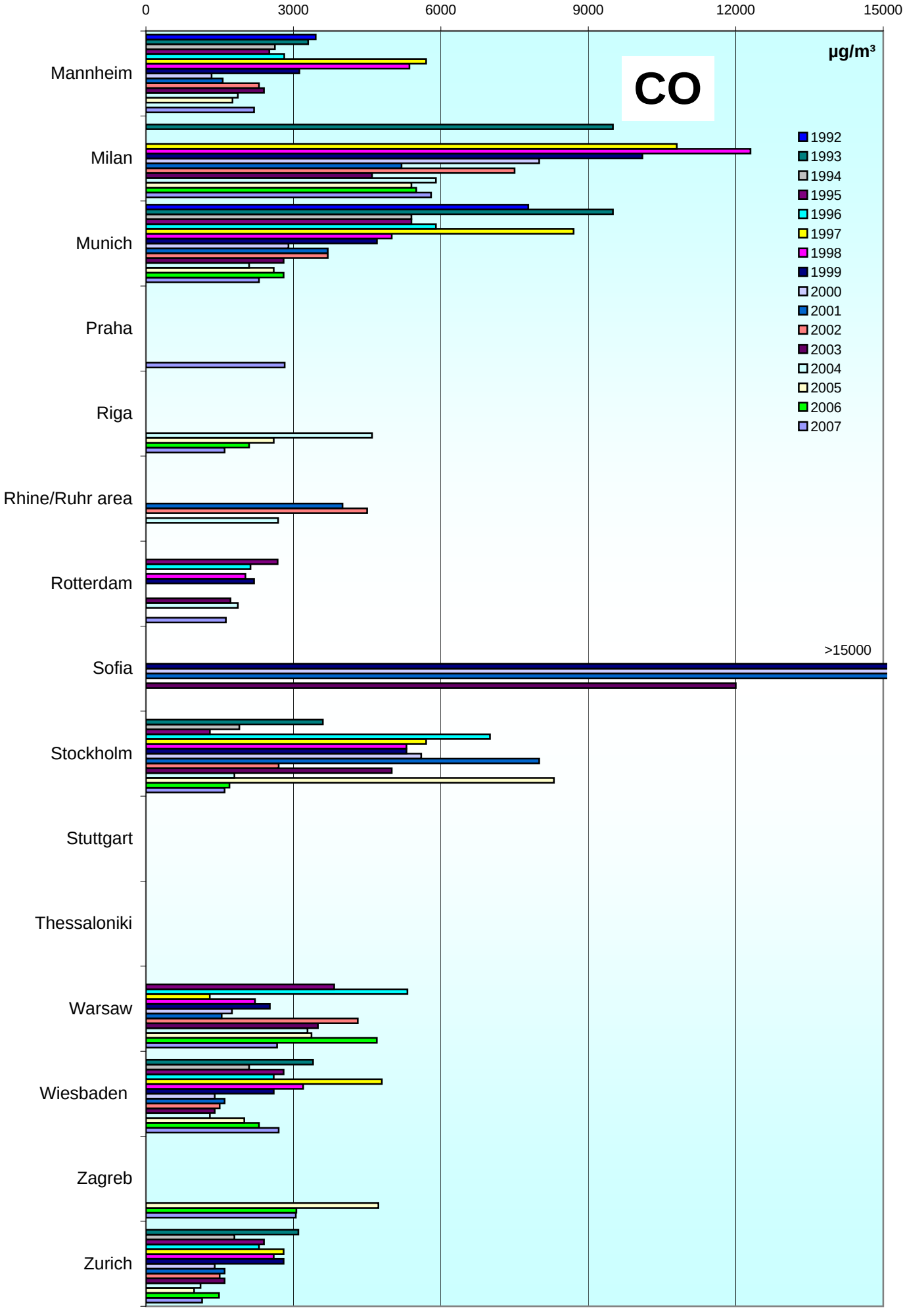
Comparison of The Air Quality 1992 - 2007

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



Comparison of The Air Quality 1992 - 2007

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



Jahresvergleich

1993 - 2007

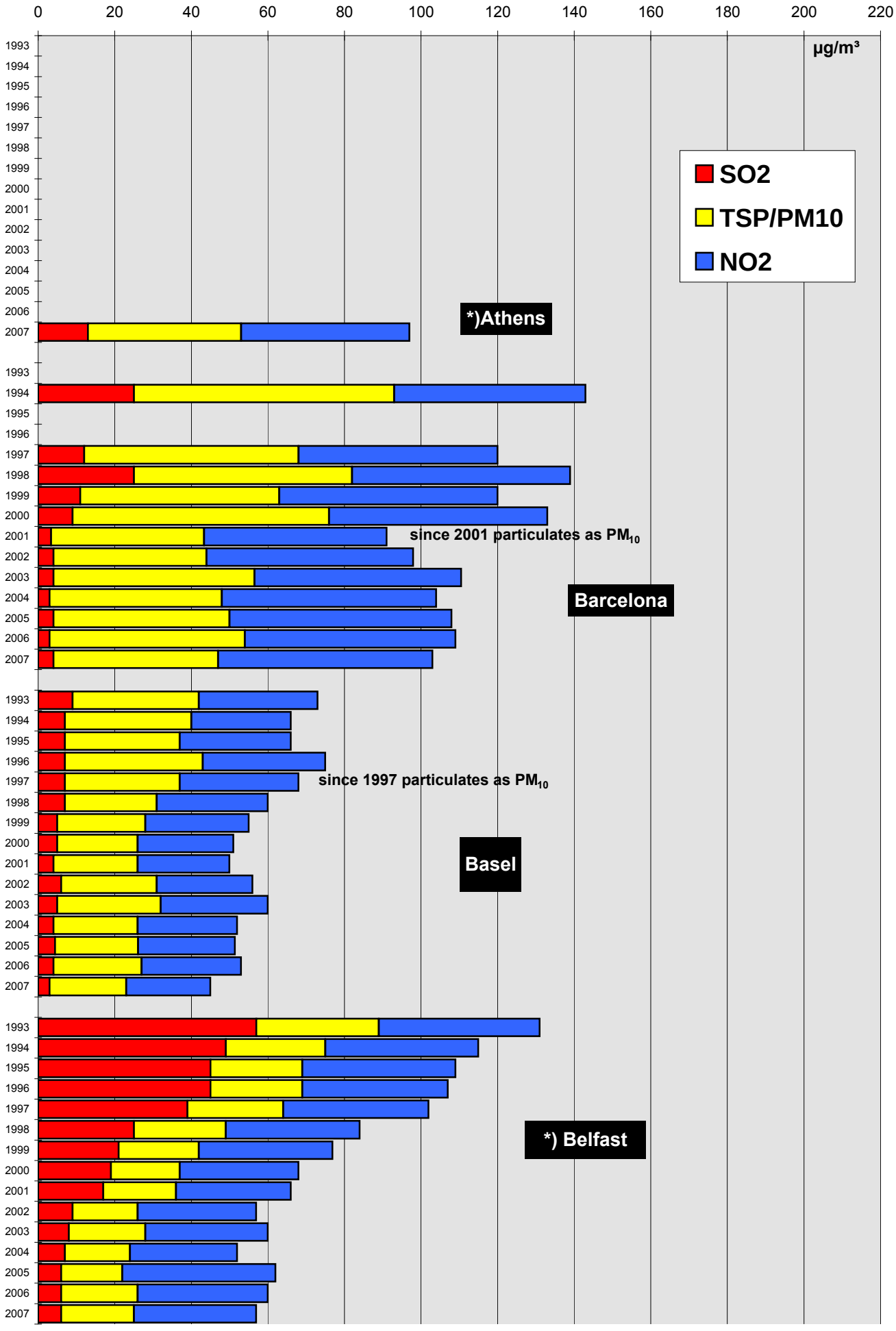
Jahresmittelwerte, Σ SO_2, TSP/PM10, NO_2

Comparison Of The Air Quality

1993 - 2007

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

Comparison Of The Air Quality 1993-2007
Development of the annual mean values, Σ SO2, TSP/PM10, NO2
(mean of all monitoring stations)

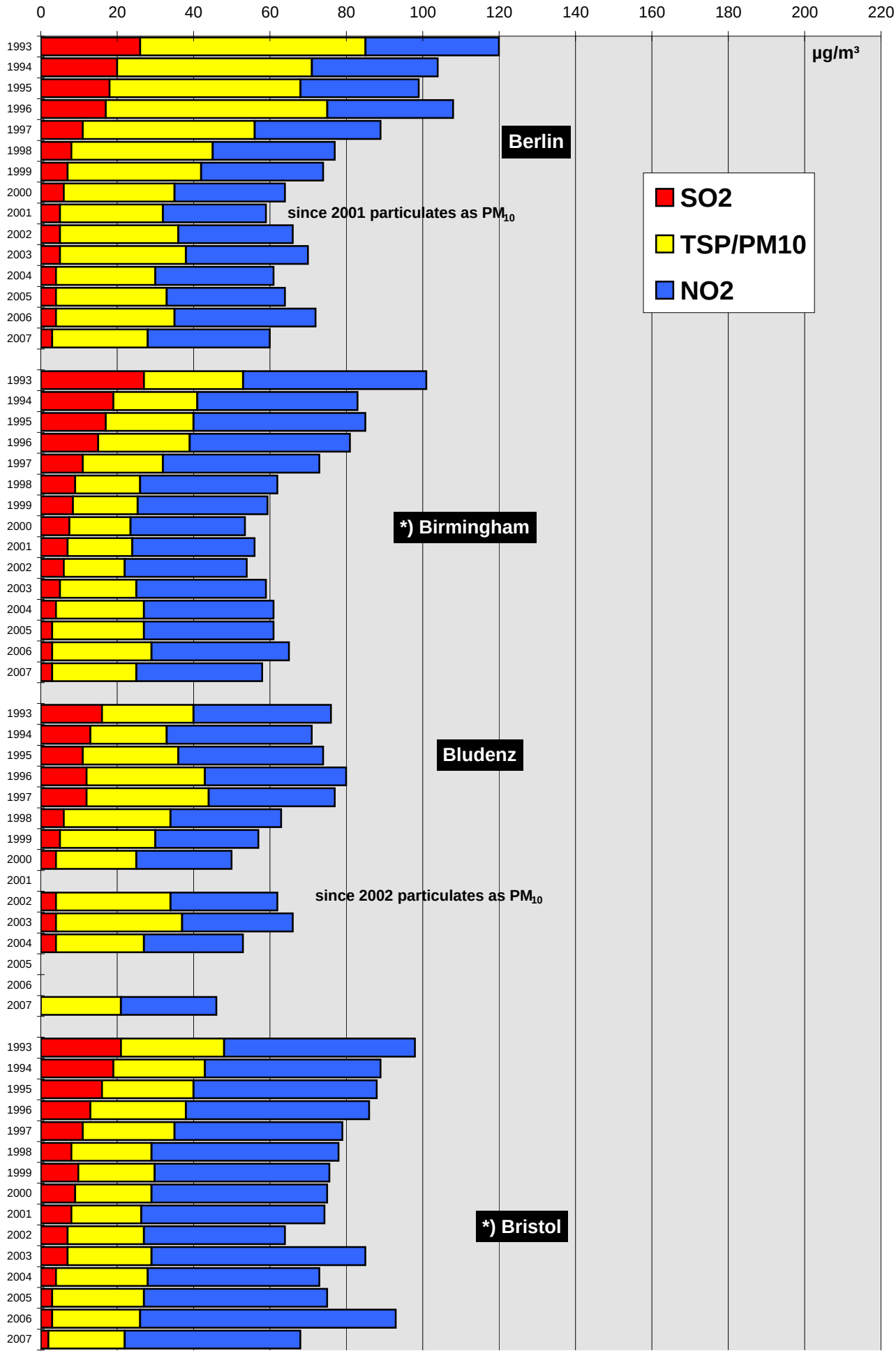


*) particulates calculated as PM 10

Comparison Of The Air Quality 1993-2007

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

(mean of all monitoring stations)

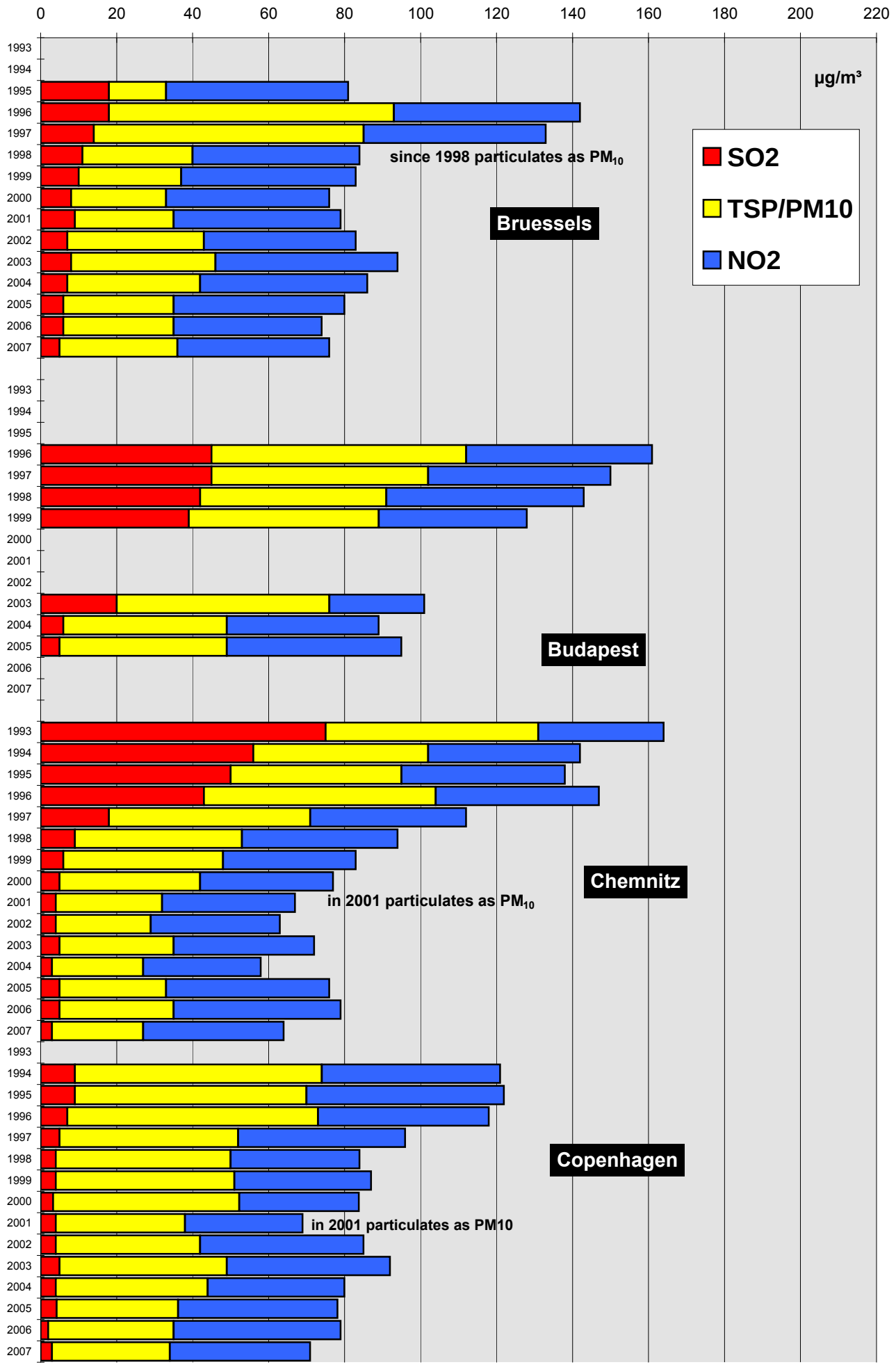


*) particulates calculated as PM 10

Comparison Of The Air Quality 1993-2007

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

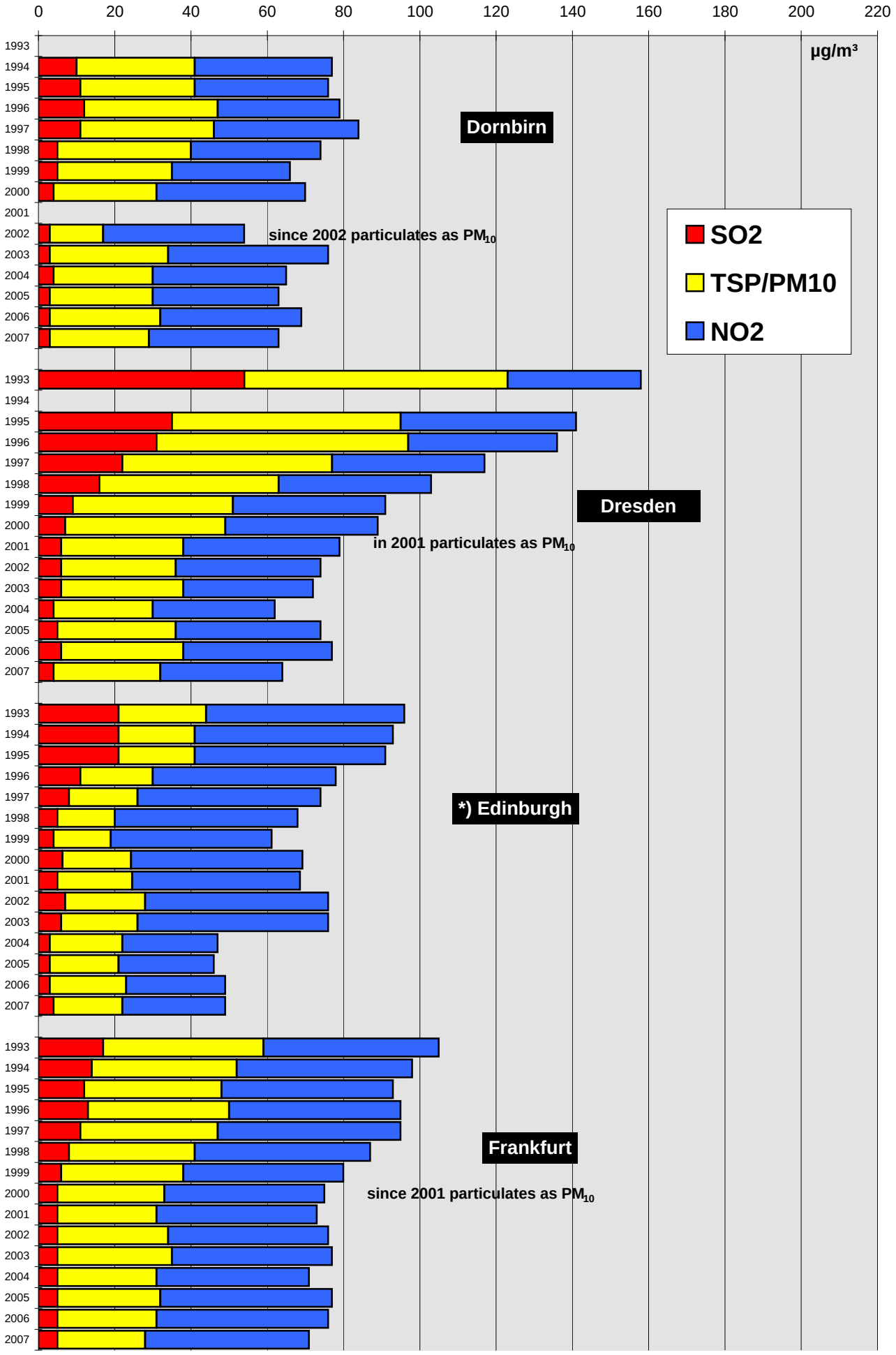
(mean of all monitoring stations)



Comparison Of The Air Quality 1993-2007

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

(mean of all monitoring stations)

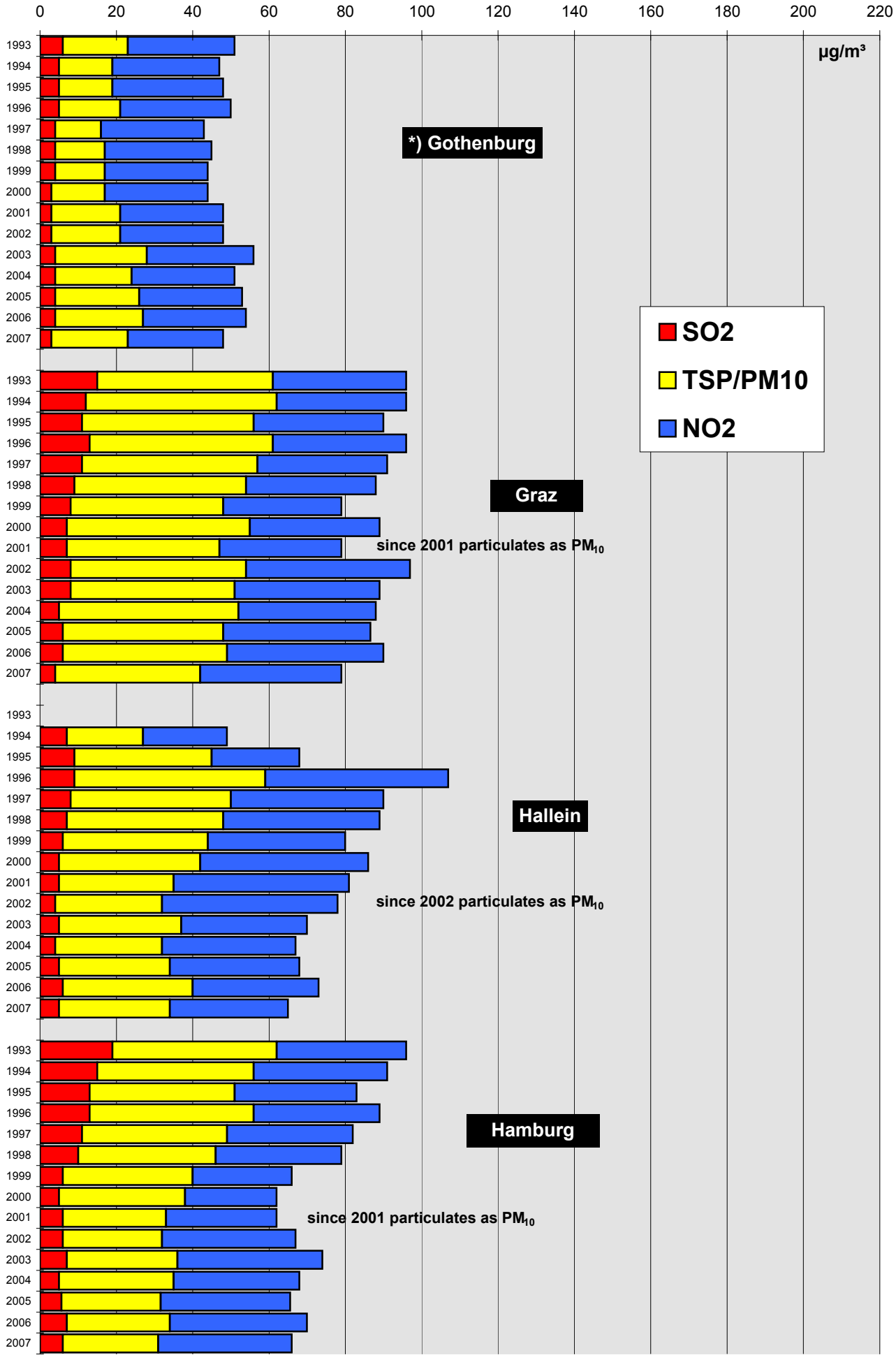


*) particulates calculated as PM_{10}

Comparison Of The Air Quality 1993-2007

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

(mean of all monitoring stations)

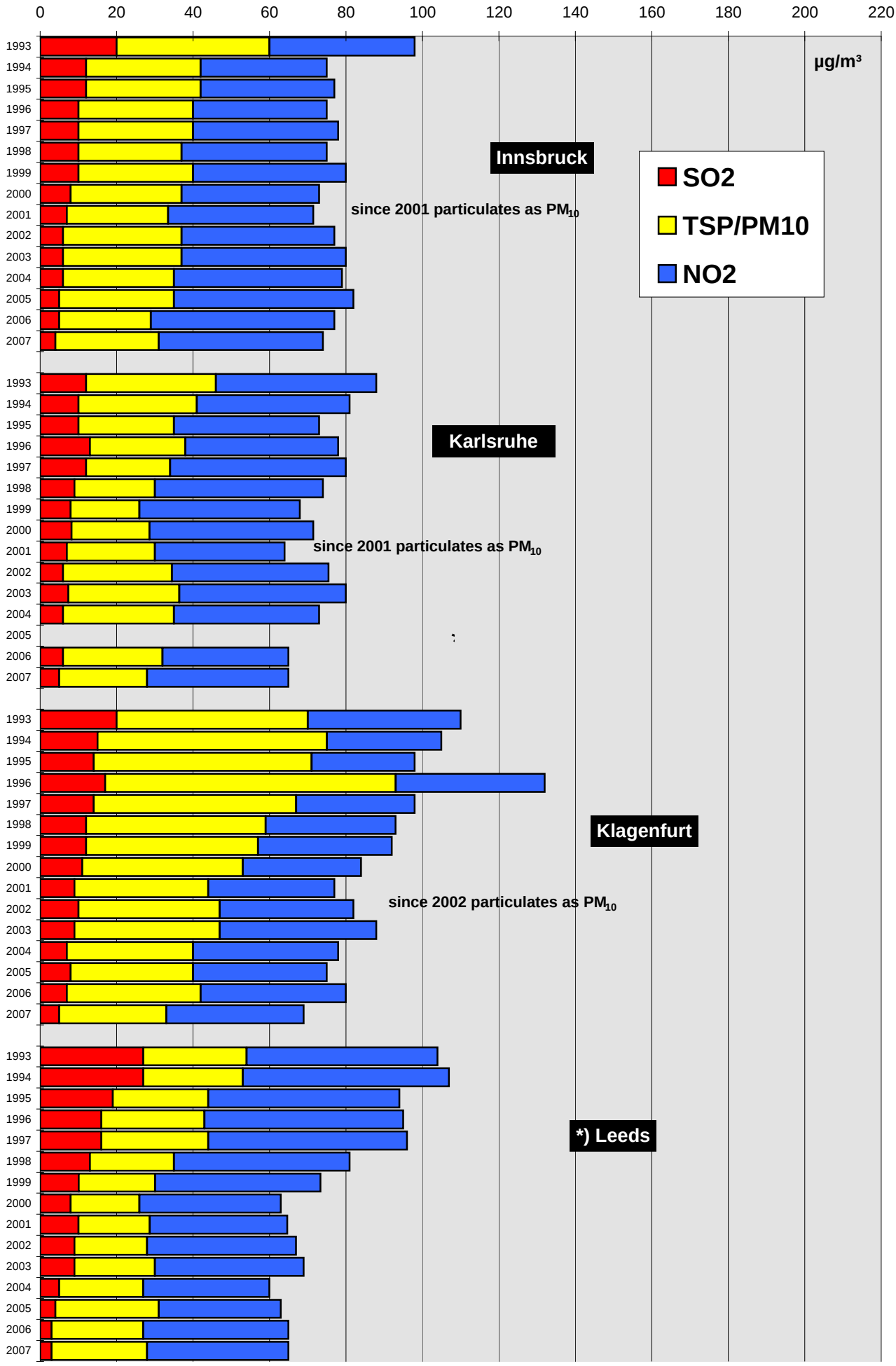


*) particulates calculated as PM_{10}

Comparison Of The Air Quality 1993-2007

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

(mean of all monitoring stations)

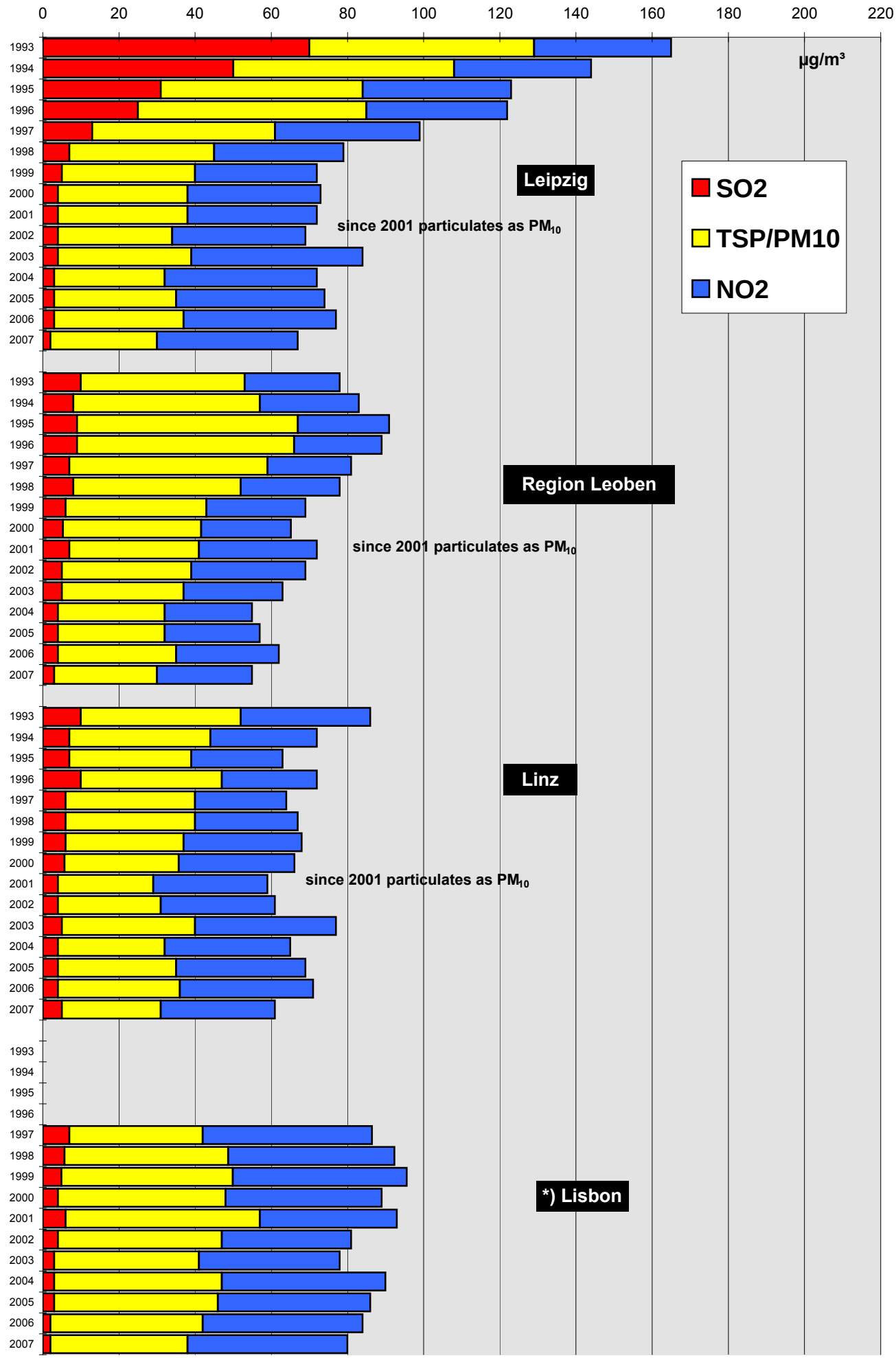


*) particulates calculated as PM_{10}

Comparison Of The Air Quality 1993-2007

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

(mean of all monitoring stations)

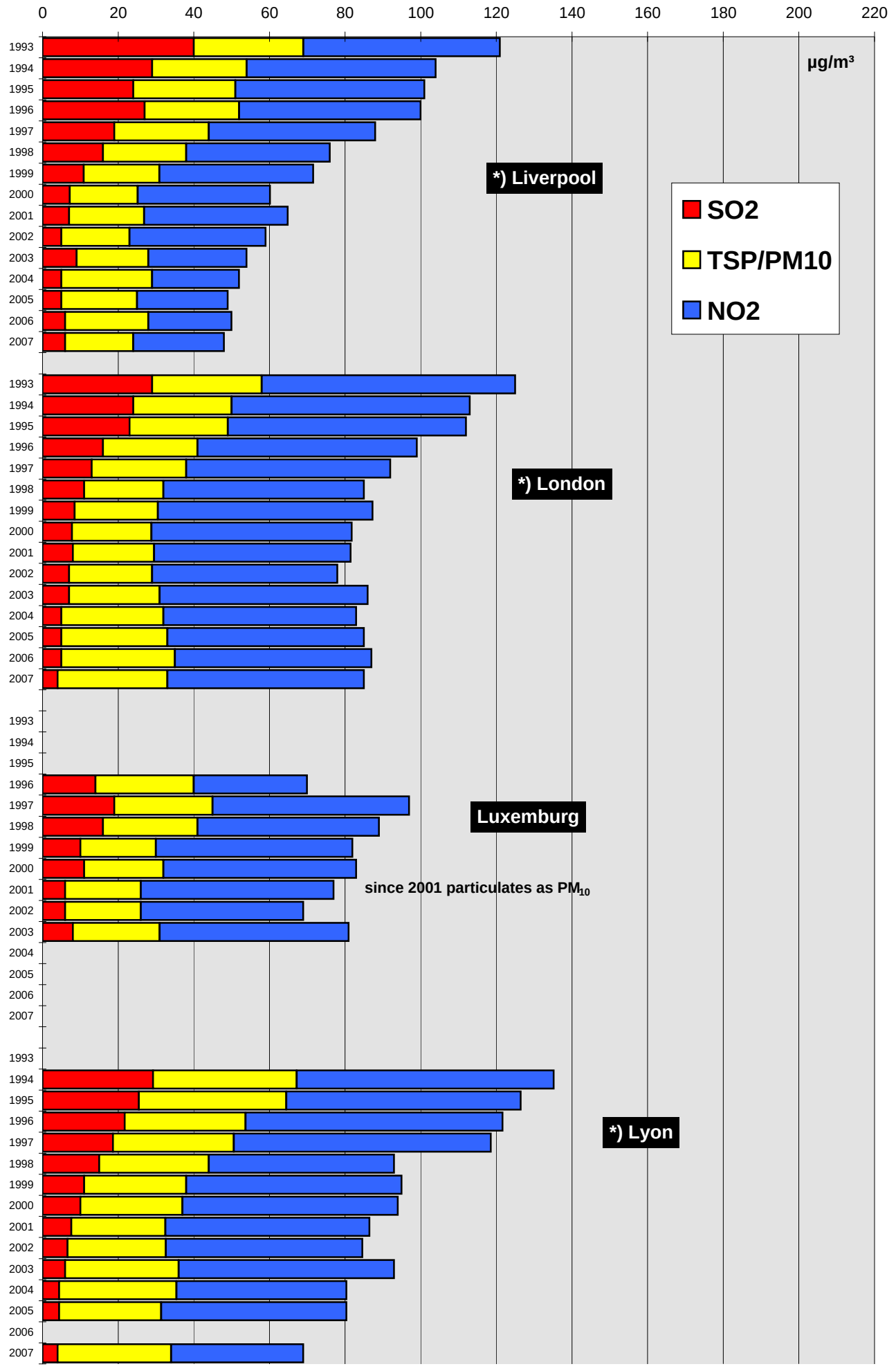


*) particulates calculated as PM_{10}

Comparison Of The Air Quality 1993-2007

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

(mean of all monitoring stations)

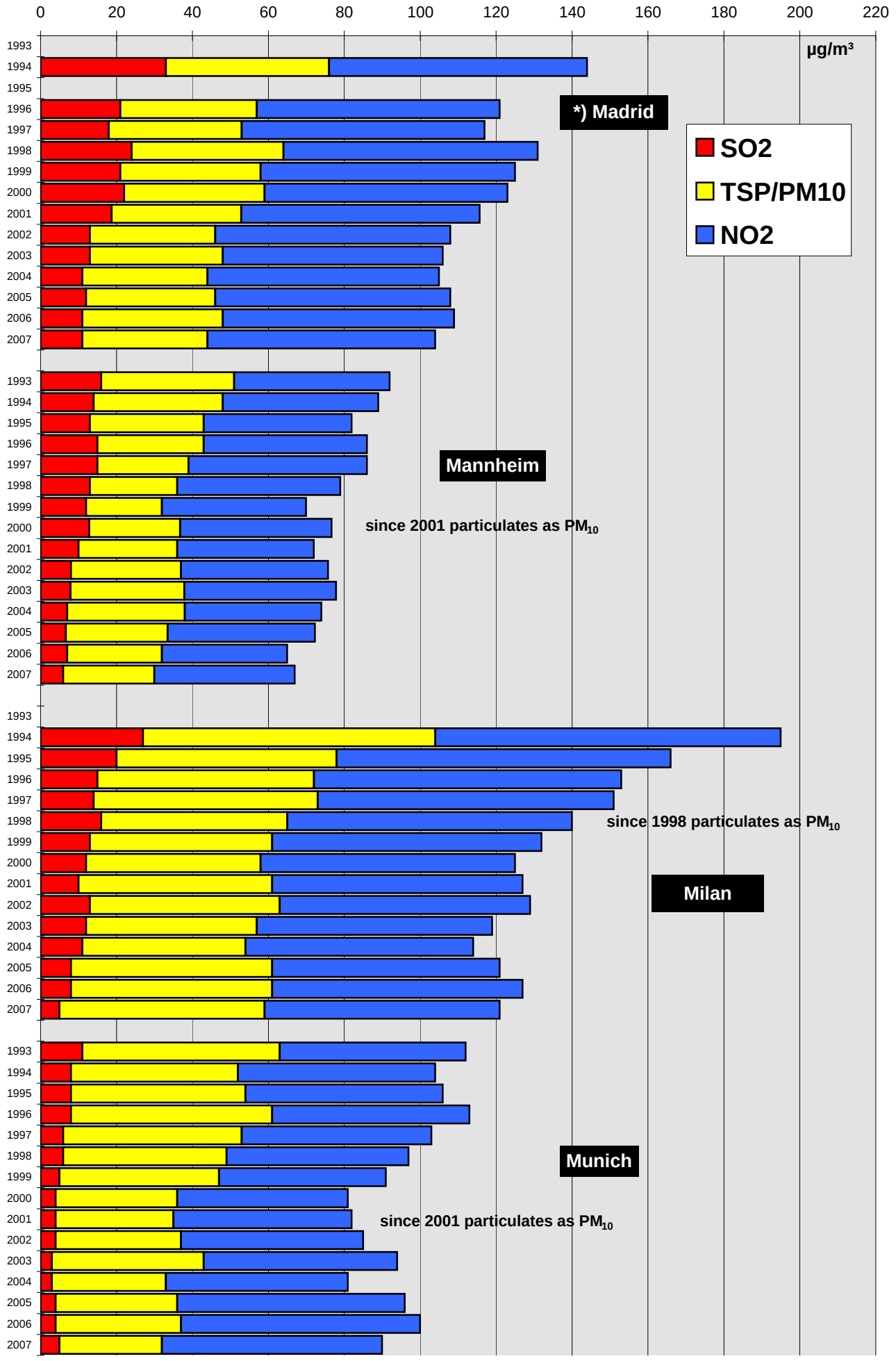


*) particulates calculated as PM_{10}

Comparison Of The Air Quality 1993-2007

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

(mean of all monitoring stations)

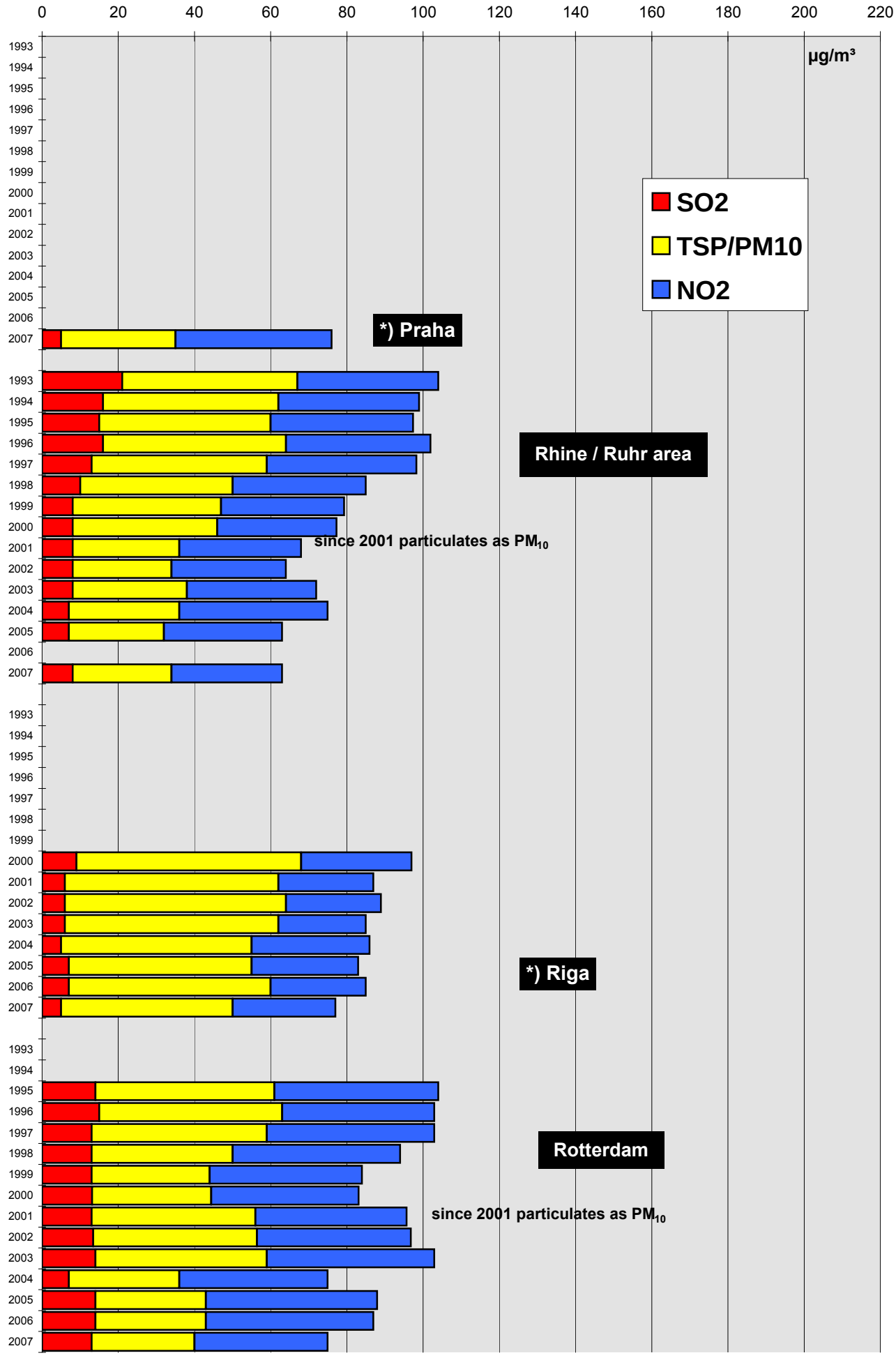


*) particulates calculated as PM_{10}

Comparison Of The Air Quality 1993-2007

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

(mean of all monitoring stations)

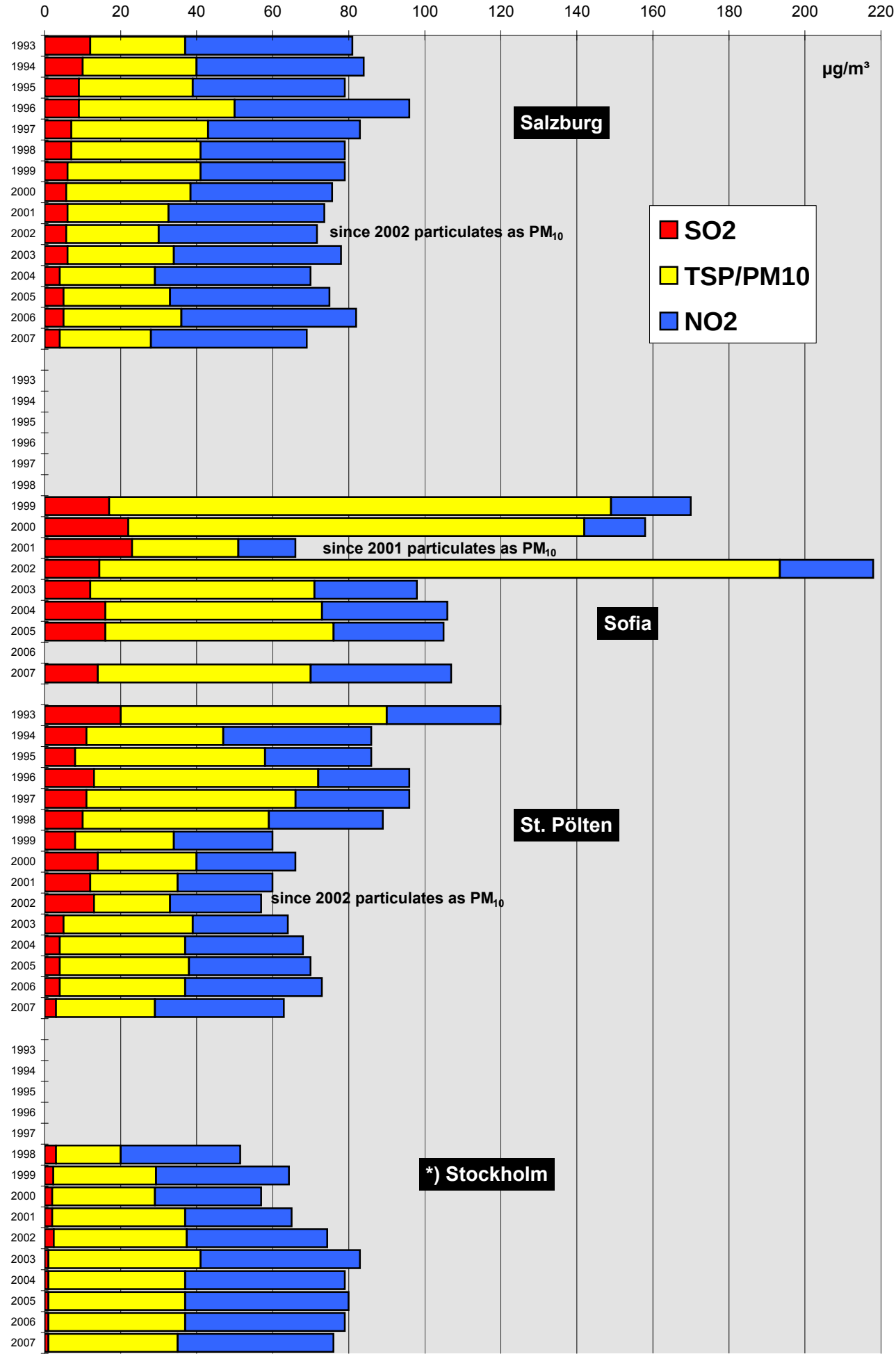


*) particulates calculated as PM_{10}

Comparison Of The Air Quality 1993-2007

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

(mean of all monitoring stations)

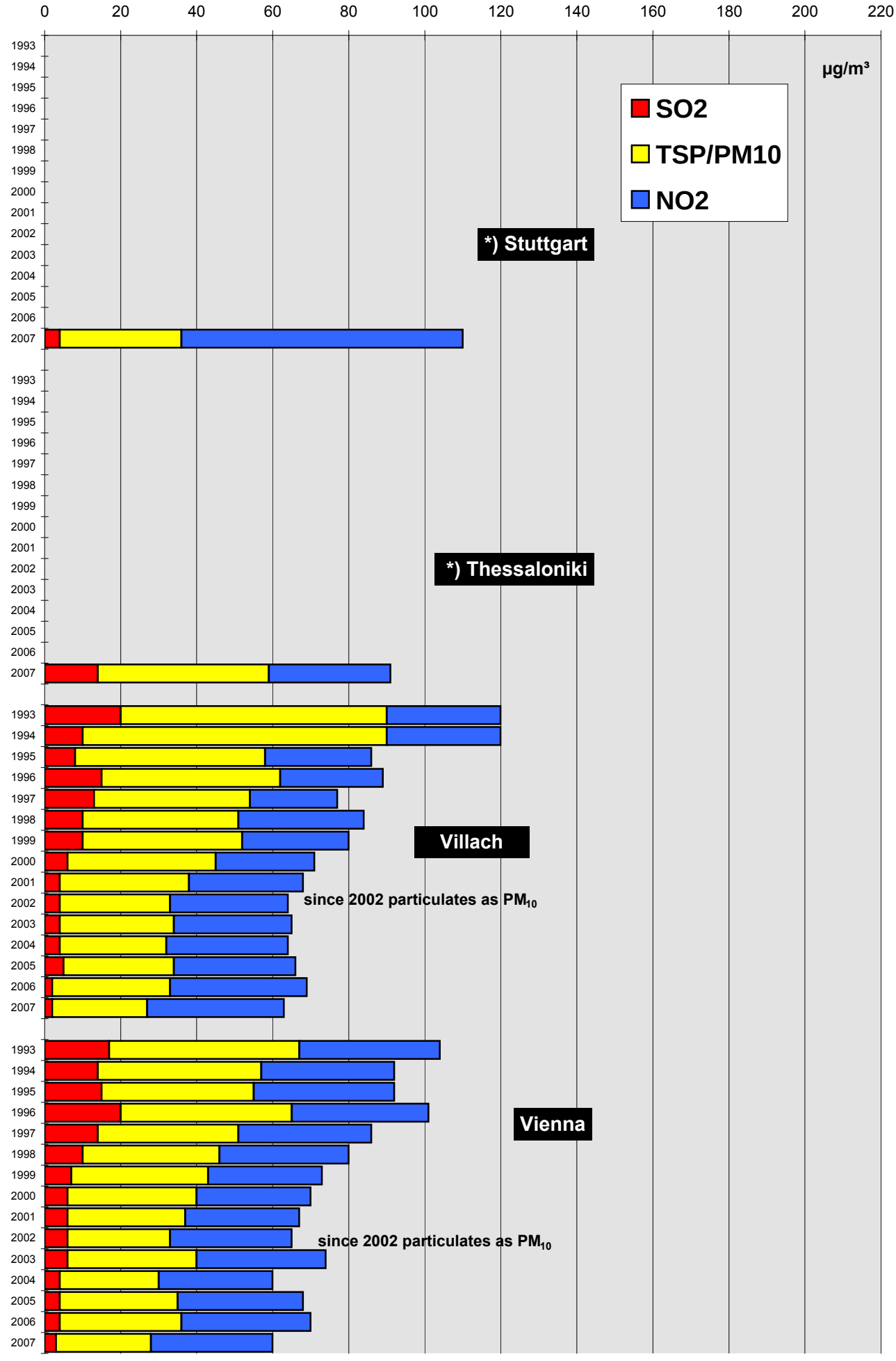


*) particulates calculated as PM_{10}

Comparison Of The Air Quality 1993-2007

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

(mean of all monitoring stations)

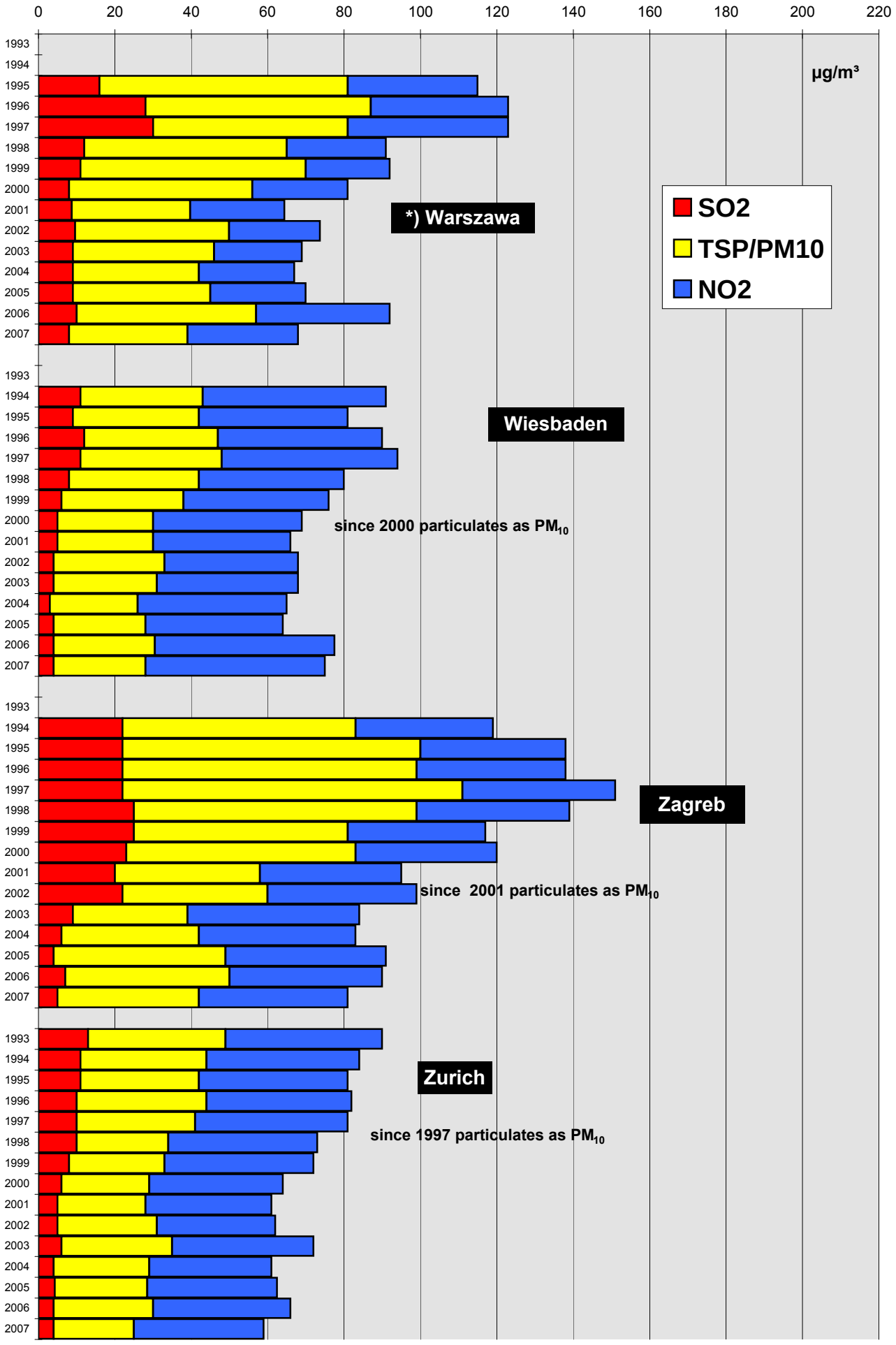


*) particulates calculated as PM_{10}

Comparison Of The Air Quality 1993-2007

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

(mean of all monitoring stations)



*) particulates calculated as PM_{10}

Luftgütekennzahlen 2007

der einzelnen

Vergleichsregionen

Immission Reference Values 2007

Of All Compared Regions

Comparison of The Air Quality in 2007

Athens

	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	13	44	101		323		96
PM_{10}	8	40	70	203				115
NO	16	30	195			950		420
NO_2	16	44	133			340		203
CO	7	1300	3100			12300		6300
O_3	14	52	107			320		159

PM_{10}:	Monitoring method(s) used:	β-attenuation
	Correction factor for this method according to EU-directive 1999/30/EC):	1
	Number of limit violations of the daily mean standard of 50 µg/m³ at the highest stressed station in 2007 (measured values **including** correction factor):	178
NO_2	Number of limit violations of the 1h mean standard of 200 µg/m³ at the highest stressed station in 2007:	192

[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 2007

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	4	13	36	94	135	-	25
PM_{10}	7	43	50	220	-	-	-	97(24h)
NO	4	34	109	348	927	1053	-	290
NO_2	4	56	94	176	323	361	-	143
CO	4	600	1100	2200	5500	7000	-	2300
O_3	4	36	78	142	167	185	-	131

PM_{10}:	Monitoring method(s) used:	Gravimetrically
	Correction factor for this method according to EU-directive 1999/30/EC):	1.00
	Number of limit violations of the daily mean standard of 50 µg/m³ at the highest stressed station in 2007 (measured values **including** correction factor):	97 *** P90.4=80
NO_2	Number of limit violations of the 1h mean standard of 200 µg/m³ at the highest stressed station in 2007:	22 **** (45 % data) P99.8=208

Comments:

* *Static average (not moving average)*
** *Maximum 98 percentile of 1-hour values, except PM_{10} 24-hour values*
*** ID_BARCELONA, ES1396A, 8019042
**** IH-BARCELONA (EXAMPLE), ES1438A, 8019043

[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 2007

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	3	5	17	43	111	191	18
PM_{10}	1	20	28	93	116	242	451	107
NO	1	7	19	83	194	231	237	119
NO_2	1	22	31	61	86	102	109	73
CO								
O_3	1	48	73	107	178	184	185	148

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):	n.a.
	Number of limit violations of the daily mean standard of 50 µg/m³ at the highest stressed station in 2007 (measured values **including** correction factor):	12
NO_2	Number of limit violations of the 1h mean standard of 200 µg/m³ at the highest stressed station in 2007:	0

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	1	6	9	26	67	77	-	21
PM_{10}	1	19	25	88	132	163	-	59
NO	1	15	26	135	492	495	-	94
NO_2	1	32	41	88	151	160	-	86
CO	1	200	500	1000	2200	2200	-	900
O_3	1	43	59	89	117	120	-	88

PM_{10}:	Monitoring method(s) used:	TEOM
	Correction factor for this method according to EU-directive 1999/30/EC):	n.a.
	Number of limit violations of the daily mean standard of 50 µg/m³ at the highest stressed station in 2007 (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 2007:	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 2007

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	2/0/1/1	3/-/3/2	-	15/-/18/11	-	29/-/34/25	-	12/-/14/10
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)	**13/4/4/5**	25/21/23/29	-	**84/72/73/104/**	-	**824/203/548/1543**	-	**59/53/58/66**
Station types	a/b/c/d	a/b/c/d	-	a/b/c/d	-	a/b/c/d	-	a/b/c/d
NO	**15/5/5/5**	**18/3/6/44**	-	75/33/50/142	-	237/122/205/384	-	77/23/43/164
NO_2	15/5/5/5	32/14/26/54	-	79/47/66/123	-	136/83/140/187	-	45/66/120/77
Station types	a/b/c/d	a/b/c/d	-	a/b/c/d	-	a/b/c/d	-	a/b/c/d
CO	**2/-/-/2**	**700/-/-/700**	-	-	2300/-/-/2300	3500/-/-/3500	-	1800/-/-/1800
Station types	a/b/c/d	a/b/c/d	-	-	a/b/c/d	a/b/c/d	-	a/b/c/d
O_3	7/2/5/-	45/42/47/-0	-	-	**149/142/155/-**	**172/165/178**	**146/170/182**	**119/123/115/-**
Station types	a/b/c	a/c/b	-	-	a/b/c	a/b/c	a/b/c	a/b/c

PM_{10}:	Monitoring method(s) used:	Absorption von Beta-Strahlung
	Correction factor for this method according to EU-directive 1999/30/EC):	1.21 / 1.26
	Number of limit violations of the daily mean standard of 50 µg/m³ at the highest stressed station in 2007 (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 2007:	6

Comments:

1) PM_{10}-particulates

Stations:
a all stations
b Outskirt station (one station is locaded in the industrial area. This station had the highest value of NO_2 and NO.
c center station
d traffic station

SO2: 98%-value of 1-hour values
PM_{10}: 98%-value of daily values
NO, NO_2: 98%-value of 1 hour values
CO: 98%-value of 1 hour value
Ozone: 98%-value 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 2007

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 year [µg/m³]
SO_2	2	3	4	12	36	53	-	13
PM_{10}	2	22	34	142	881	1934	-	70
NO	2	20	51	333	676	775	-	223
NO_2	2	33	50	90	144	174	-	86
CO	2	300	500	1400	2600	2700	-	800
O_3	2	37	51	88	142	142	-	84

PM_{10}:	Monitoring method(s) used:	TEOM
	Correction factor for this method according to EU-directive 1999/30/EC):	n.a.
	Number of limit violations of the daily mean standard of 50 µg/m³ at the highest stressed station in 2007 (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 2007:	0

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	21	40	109	-	-	-	66
NO	1	16	60	228	331	353	360	138
NO_2	1	25	48	95	129	137	142	78
CO	-	-	-	-	-	-	-	-
O_3	1	43	70	120	178	179	180	122

PM_{10}:	Monitoring method(s) used:	gravimetrically
	Correction factor for this method according to EU-directive 1999/30/EC):	1.00
	Number of limit violations of the daily mean standard of 50 µg/m³ at the highest stressed station in 2007 (measured values **including** correction factor):	16
NO_2	Number of limit violations of the 1h mean standard of 200 µg/m³ at the highest stressed station in 2007:	0

Comment:
The 3h mean values and the 1h mean value are calculated over a moving average of the 1/2h mean 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 2007

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	2	3	15	40	59	-	11
PM_{10}	1	20	31	119	380	438	-	65
NO	2	41	108	344	585	646	-	288
NO_2	2	46	76	151	227	235	-	145
CO	2	400	600	1900	5100	6300	-	1400
O_3	1	43	60	100	142	148	-	94

PM_{10}:	Monitoring method(s) used:	TEOM
	Correction factor for this method according to EU-directive 1999/30/EC):	n.a.
	Number of limit violations of the daily mean standard of 50 µg/m³ at the highest stressed station in 2007 (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 2007:	8

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 day, hour [µg/m³]
SO_2	7	5		33		55	64	20 (daily)
PM_{10}	6	31		123		613	631	87 (daily)
NO	10	21		362		718	787	209 (1h)
NO_2	10	40		142		283	286	114 (1h)
CO	7	390		1970		3750	4280	1050 (1h)
O_3	6	35		108		199	199	117 (1h)

PM_{10}:	Monitoring method(s) used:	TEOM-FDMS for PM_{10}
	Correction factor for this method according to EU-directive 1999/30/EC):	1
	Number of limit violations of the daily mean standard of 50 µg/m³ at the highest stressed station in 2007 (measured values **including** correction factor):	56
NO_2	Number of limit violations of the 1h mean standard of 200 µg/m³ at the highest stressed station in 2007:	2

[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 2007

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								
TSP								
PM_{10}								
NO								
NO_2								
CO								
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 2007 (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 2007:	

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. 99,18-Percentile per day, hour [µg/m³]
SO_2	1	3	5	29		138		19 (day)
PM_{10}	3	24	40	104				49* (day)
NO	3	28	73					
NO_2	3	37	61	120		244		158** (hour)
CO	1	500	740	2500		4000		
O_3	1	45	70					

PM_{10}:	Monitoring method(s) used:	gravimetrically (High-Volume-Sampler)
	Correction factor for this method according to EU-directive 1999/30/EC):	1
	Number of limit violations of the daily mean standard of 50 µg/m³ at the highest stressed station in 2007 (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 2007:	1

Comments: * 99,41 percentile
** 99,79 percentile

[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 2007

Copenhagen

	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				75		12
PM_{10}	3	31		101				71*
NO	-							
NO_2	3	37			193	206		116
CO	3	458				3226		1514
O_3	3	42				141		

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 2007 (measured values **including** correction factor):	n.a.
NO_2	Number of limit violations of the 1h mean standard of 200 µg/m³ at the highest stressed station in 2007:	n.a.

Comments: * 95 Percentile

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	5	10	16	29	54	10
PM_{10}	1	26	35	78	-	-	-	59
NO	1	27	56	166	266	330	348	141
NO_2	1	34	48	74	140	212	279	86
CO	-	-	-	-	-	-	-	-
O_3	-	-	-	-	-	-	-	-

PM_{10}:	Monitoring method(s) used:	Gravimetrically
	Correction factor for this method according to EU-directive 1999/30/EC):	1.00
	Number of limit violations of the daily mean standard of 50 µg/m³ at the highest stressed station in 2007 (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 2007:	0

Comment:
3h mean value, 1h mean value: moving average

[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 2007

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. 99.18-Percentile day, hour [µg/m³]
SO_2	1	4	12	55		96		29(day)
PM_{10}	3	28	40	141				48*(day)
NO	3	32	94					
NO_2	3	38	59	101		195		142**(hour)
CO	1	500	670	1100		3100		
O_3	2	41	70					

PM_{10}:	Monitoring method(s) used:	Gravimetrically (High-Volume-Sampler)
	Correction factor for this method according to EU-directive 1999/30/EC):	1
	Number of limit violations of the daily mean standard of 50 µg/m³ at the highest stressed station in 2007 (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 2007:	0

Comments: * 99.41 percentile
** 99.79 percentile

Edinburgh (St. Leonhards)

	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	6	58	181	229	-	21
PM_{10}	1	18	27	65	85	95	-	55
NO	1	9	16	90	181	219	-	58
NO_2	1	27	41	80	110	120	-	78
CO	1	300	400	700	1400	1500	-	600
O_3	1	48	65	102	115	116	-	92

PM_{10}:	Monitoring method(s) used:	TEOM
	Correction factor for this method according to EU-directive 1999/30/EC):	n.a.
	Number of limit violations of the daily mean standard of 50 µg/m³ at the highest stressed station in 2007 (measured values **including** correction factor):	6
NO_2	Number of limit violations of the 1h mean standard of 200 µg/m³ at the highest stressed station in 2007:	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 2007

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	8	23	41	64	69	20
PM_{10}	4	22	34	96	199	368	521	75
NO	4	28	54	243	341	405	448	158
NO_2	4	39	56	94	136	150	153	101
CO	3	400	600	1500	2400	2500	3300	1200
O_3	4	35	65	118	175	179	182	120

PM_{10}:	Monitoring method(s) used:	ß-absorption
	Correction factor for this method according to EU-directive 1999/30/EC):	1
	Number of limit violations of the daily mean standard of 50 µg/m³ at the highest stressed station in 2007 (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 2007:	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	28	40	103	177	341	493	80
NO	1	52	90	297	429	522	538	230
NO_2	1	61	76	120	194	211	253	143
CO	1	600	900	2100	3400	4200	4200	1900
O_3	-	-	-	-	-	-	-	-

PM_{10}:	Monitoring method(s) used:	ß-absorption
	Correction factor for this method according to EU-directive 1999/30/EC):	1
	Number of limit violations of the daily mean standard of 50 µg/m³ at the highest stressed station in 2007 (measured values **including** correction factor):	33
NO_2	Number of limit violations of the 1h mean standard of 200 µg/m³ at the highest stressed station in 2007:	6

[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 2007

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 year [µg/m³]
SO_2	2	3	5	17	52	121	135	13
PM_{10}	1	20	34	83	138	230	288	56
NO	1	11	28	130	413	562	579	95
NO_2	3	25	36	79	165	226	231	88
CO	1	169	319	565	1638	1648	1668	460
O_3	3	49	71	97	122	124	124	96

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 2007 (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 2007:	1

Comment:
Only rooftop stations are included.
Where more than one station is indicated the others are DOAS-stations with 2 respectively 3 separate measuring light beams. All stations are at rooftop level at approx. 25 meters height.

[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 2007

Graz (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	3	4	9	17	36	56	97	15
PM_{10} cont.	6	31	69	268	628	681	863	119
PM_{10} g.	1	36	72	300				
NO	4	27	119	347	542	592	631	210
NO_2	5	34	60	96	140	147	159	99
CO	2	600	1200	2500	4200	4300	4500	2200
O_3	4	51	105	163	198	205	206	143

PM_{10}:	Monitoring method(s) used:	continuous / gravimetrically
	Correction factor for this method according to EU-directive 1999/30/EC):	1.3 / 1
	Number of limit violations of the daily mean standard of 50 µg/m³ at the highest stressed station in 2007 (measured values **including** correction factor):	74
NO_2	Number of limit violations of the 1h mean standard of 200 µg/m³ at the highest stressed station in 2007:	-

Comment:
Max 3h-mean value = moving average, Max 1h-mean value = static average

Comparison of The Air Quality in 2007

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	5	11	20	30	33	35	19
PM_{10} cont.	1	39	70	266	629	652	665	117
PM_{10} g.	1	40	69	209				
NO	1	61	153	350	646	673	737	304
NO_2	1	51	67	97	155	168	186	108
CO	1	600	1400	2800	4600	4800	5000	2400
O_3	-	-	-	-	-	-	-	-

PM_{10}:	Monitoring method(s) used:	continuous / gravimetrically
	Correction factor for this method according to EU-directive 1999/30/EC):	1.3 / 1
	Number of limit violations of the daily mean standard of 50 µg/m³ at the highest stressed station in 2007 (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 2007:	

*reference method (gravimetric analysis of dust)
Max 3h-mean value = moving average, Max 1h-mean value = static average

[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 2007

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	5	8	37	152	174	213	16
PM_{10}	1	29	40	113				64
NO	2	31	118	391	733	864	874	247
NO_2	2	301	68	127	212	245	250	106
CO	1	570	1080	2100	3620	4220	4310	1650
O_3	1	65	92	133	181	184	185	130

PM_{10}:	Monitoring method(s) used:	gravimetrically
	Correction factor for this method according to EU-directive 1999/30/EC):	1
	Number of limit violations of the daily mean standard of 50 µg/m³ at the highest stressed station in 2007 (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 2007:	3

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	7	6	19	98	204	317	379	45
PM_{10}	8	23	40	96	397	520	593	71
NO	12	10	42	195	643	880	1084	131
NO_2	12	25	48	94	169	213	238	87
CO	3	247	413	970	1580	2048	2252	833
O_3	6	43	71	106	169	177	177	110

PM_{10}:	Monitoring method(s) used:	TEOM (6 stations), β-absorption (2 stations)
	Correction factor for this method according to EU-directive 1999/30/EC):	TEOM: 1, Beta-Absorption: 1.20/ 1.32
	Number of limit violations of the daily mean standard of 50 µg/m³ at the highest stressed station in 2007 (measured values **including** correction factor):	23
NO_2	Number of limit violations of the 1h mean standard of 200 µg/m³ at the highest stressed station in 2007:	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 2007

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	1	7	10	41	77	132	146	29
PM_{10}	3	29	35	83	328	743	927	70
NO	4	68	104	271	578	654	760	314
NO_2	4	64	82	165	233	256	274	162
CO	4	590	877	1734	3278	3575	4885	1946
O_3	-	-	-	-	-	-	-	-

PM_{10}:	Monitoring method(s) used:	Teom (2 Stationen) ß-Adsorption (1 station)
	Correction factor for this method according to EU-directive 1999/30/EC):	TEOM:1; Beta-Absorption: 1.26
	Number of limit violations of the daily mean standard of 50 µg/m³ at the highest stressed station in 2007 (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 2007:	19

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	4	12	25	39	49	53	20
PM_{10}	2	27	59	131				87
NO	2	40	119	346			655	254
NO_2	2	43	70	118	184		198	104
CO	1	500	824	1366	2057	2508	3208	1345
O_3	2	39	85	136	165	168	169	121

PM_{10}:	Monitoring method(s) used:	gravimetrically
	Correction factor for this method according to EU-directive 1999/30/EC):	1.00
	Number of limit violations of the daily mean standard of 50 µg/m³ at the highest stressed station in 2007 (measured values **including** correction factor):	46
NO_2	Number of limit violations of the 1h mean standard of 200 µg/m³ at the highest stressed station in 2007:	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 2007

Karlsruhe (urban 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	5	8	35		102		
PM_{10}	2	21	34	95				
NO	2	19	52	244		451		
NO_2	2	30	48	92		151		
CO	1	200	400	1300		1900		
O_3	2	39	68	128		223		

PM_{10}:	Monitoring method(s) used:	gravimetrically
	Correction factor for this method according to EU-directive 1999/30/EC):	1
	Number of limit violations of the daily mean standard of 50 µg/m³ at the highest stressed station in 2007 (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 2007:	0

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	26	36	97				
NO	1	45	68	286		973		
NO_2	1	52	64	119		188		
CO	1	600	900	2100		4600		
O_3								

PM_{10}:	Monitoring method(s) used:	gravimetrically
	Correction factor for this method according to EU-directive 1999/30/EC):	1
	Number of limit violations of the daily mean standard of 50 µg/m³ at the highest stressed station in 2007 (measured values **including** correction factor):	16
NO_2	Number of limit violations of the 1h mean standard of 200 µg/m³ at the highest stressed station in 2007:	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 2007

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	*5*	*8*	*14*	*60*	*79*	92	*18*
PM_{10}	2	28	62	116	-	-	-	-
NO	2	31	97	195	450	481	492	228
NO_2	2	35	56	75	146	231	368 (*1	101
CO	2	562	1090	1803	3479	3790	3882	1901
O_3	2	42	80	130	174	179	180	128

PM_{10}:	Monitoring method(s) used:	Gravimetrically (Digitel HVS)
	Correction factor for this method according to EU-directive 1999/30/EC):	1
	Number of limit violations of the daily mean standard of 50 µg/m³ at the highest stressed station in 2007 (measured values **including** correction factor):	42
NO_2	Number of limit violations of the 1h mean standard of 200 µg/m³ at the highest stressed station in 2007:	1

Comment: (*1 … Categorisation as singular event under this §7 Z 2 IG-L (caused by LKW dismounting work from a circus [Österr. Nationalzirkus Louis Knie] next a measurement station. (1 HMW >200µg/m³)

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	3	5	48	190	215	-	13
PM_{10}	1	25	32	84	193	213	-	74
NO	1	23	42	207	380	436	-	124
NO_2	1	37	49	89	134	136	-	82
CO	1	200	300	1100	2600	2800	-	700
O_3	1	37	55	86	124	128	-	86

PM_{10}:	Monitoring method(s) used:	no information
	Correction factor for this method according to EU-directive 1999/30/EC):	n.a.
	Number of limit violations of the daily mean standard of 50 µg/m³ at the highest stressed station in 2007 (measured values **including** correction factor):	11
NO_2	Number of limit violations of the 1h mean standard of 200 µg/m³ at the highest stressed station in 2007:	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 2007

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. 99,14-Percentile per day, hour [µg/m³]
SO_2	1	2	3	10		50		9(day)
PM_{10}	3	28	43	158				54*(day)
NO	3	26	61					
NO_2	3	37	57	98		189		128**(hour)
CO	1	600	780	1400		3400		
O_3	2	44	66					

PM_{10}:	Monitoring method(s) used:	Gravimetrically (High-Volume-Sampler)
	Correction factor for this method according to EU-directive 1999/30/EC):	1
	Number of limit violations of the daily mean standard of 50 µg/m³ at the highest stressed station in 2007 (measured values **including** correction factor):	40
NO_2	Number of limit violations of the 1h mean standard of 200 µg/m³ at the highest stressed station in 2007:	0

Comments: * 99.41 percentile
** 99.79 percentile

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	3	7	16	69	107	132	22
PM_{10}	3 / 1*	27 / 24*	42 / 35*	102 / 98*	428	750	1074**	83
NO	3	16	48	125	232	255	305	120
NO_2	3	25	41	61	89	105	123	70
CO	1	800	1600	4200	11800	14100	15400	4200
O_3	1	38	60	106	162	161	178	121

PM_{10}:	Monitoring method(s) used:	Continuous / gravimetrically*
	Correction factor for this method according to EU-directive 1999/30/EC):	1.3 / 1
	Number of limit violations of the daily mean standard of 50 µg/m³ at the highest stressed station in 2007 (measured values **including** correction factor):	36 / 15*
NO_2	Number of limit violations of the 1h mean standard of 200 µg/m³ at the highest stressed station in 2007:	0

Comment:
*reference method (gravimetric analysis of dust); ** measured value: 01.01.2007 - 01:00 (New Year's Eve)
Max 3h-mean value = moving average, Max 1h-mean value = static average

[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 2007

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	7	5	22	51	101	137	179	52
PM_{10}	7	26	43	180	372	459	500	86
NO	8	20	77	260	445	565	610	222
NO_2	8	30,4	55	110	260	292	297	122
CO	7	423	900	2000	5000	6000	6100	2151
O_3	4	44	84	127	185	190	191	130

PM_{10}:	Monitoring method(s) used:	continuously and gravimetrically
	Correction factor for this method according to EU-directive 1999/30/EC):	1.00 - 1.20
	Number of limit violations of the daily mean standard of 50 µg/m³ at the highest stressed station in 2007 (measured values **including** correction factor):	41
NO_2	Number of limit violations of the 1h mean standard of 200 µg/m³ at the highest stressed station in 2007:	4

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	2	7	20	44	74		17
PM_{10}	4	36	112	178	189	217		112
NO	7	27	126	236	642	823		294
NO_2	7	42	93	157	280	305		165
CO	7	369	932	2261	5206	5940		2124
O_3	4	49	79	110	178	187		111

PM_{10}:	Monitoring method(s) used:	ß-absorption
	Correction factor for this method according to EU-directive 1999/30/EC):	1.18-traffic station 1.11-background
	Number of limit violations of the daily mean standard of 50 µg/m³ at the highest stressed station in 2007 (measured values **including** correction factor):	154
NO_2	Number of limit violations of the 1h mean standard of 200 µg/m³ at the highest stressed station in 2007:	39

[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 2007

Liverpool (Speke)

	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	8	21	84	138	-	27
PM_{10}	1	18	29	117	205	230	-	69
NO	1	9	21	110	325	360	-	83
NO_2	1	24	33	70	106	122	-	73
CO	1	200	300	800	1300	1600	-	500
O_3	1	44	56	85	135	140	-	86

PM_{10}:	Monitoring method(s) used:	no information
	Correction factor for this method according to EU-directive 1999/30/EC):	n.a.
	Number of limit violations of the daily mean standard of 50 µg/m³ at the highest stressed station in 2007 (measured values **including** correction factor):	11
NO_2	Number of limit violations of the 1h mean standard of 200 µg/m³ at the highest stressed station in 2007:	0

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	9	4	9	47	97	144	-	21
PM_{10}	9	29	59	102	228	481	-	98
NO	14	40	166	540	873	971	-	394
NO_2	13	52	122	261	369	401	-	229
CO	9	700	1200	2200	3900	4400	-	1900
O_3	10	34	60	106	143	148	-	102

PM_{10}:	Monitoring method(s) used:	no information
	Correction factor for this method according to EU-directive 1999/30/EC):	n.a.
	Number of limit violations of the daily mean standard of 50 µg/m³ at the highest stressed station in 2007 (measured values **including** correction factor):	124
NO_2	Number of limit violations of the 1h mean standard of 200 µg/m³ at the highest stressed station in 2007:	458

[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 2007

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,hour [µg/m³]
SO_2	5	4	-	63	-	179	-	20(year)
PM_{10}	4	30	-	134	-	354	-	98(year)
NO	4	18	-	195	-	478	-	158
NO_2	4	35	-	112	-	187	-	101
CO	-	-	-	-	-	-	-	-
O_3	4	41	-	115	-	156	-	116

PM_{10}:	Monitoring method(s) used:	no information
	Correction factor for this method according to EU-directive 1999/30/EC):	n.a.
	Number of limit violations of the daily mean standard of 50 µg/m³ at the highest stressed station in 2007 (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 2007:	0

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, hour [µg/m³]
SO_2	-	-	-	-	-	-	-	-
PM_{10}	4	39	-	151	-	253	-	115(year)
NO	6	65	-	395	-	738	-	424
NO_2	6	59	-	158	-	326	-	196
CO	4	564	-	-	-	11883	-	1981
O_3	-	-	-	-	-	-	-	-

PM_{10}:	Monitoring method(s) used:	no information
	Correction factor for this method according to EU-directive 1999/30/EC):	n.a.
	Number of limit violations of the daily mean standard of 50 µg/m³ at the highest stressed station in 2007 (measured values **including** correction factor):	142
NO_2	Number of limit violations of the 1h mean standard of 200 µg/m³ at the highest stressed station in 2007:	139

[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 2007

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	25	11	33	56	128	148	-	56
PM_{10}	25	33	73	199	419	572	-	146
NO	25	33	134	337	1034	1234	-	361
NO_2	25	60	127	220	550	629	-	232
CO	23	500	1200	2500	7800	9700	-	2400
O_3	23	34	71	94	144	159	-	115

PM_{10}:	Monitoring method(s) used:	Oscillating microbalance
	Correction factor for this method according to EU-directive 1999/30/EC):	1
	Number of limit violations of the daily mean standard of 50 µg/m³ at the highest stressed station in 2007 (measured values **including** correction factor):	123
NO_2	Number of limit violations of the 1h mean standard of 200 µg/m³ at the highest stressed station in 2007:	267

Comments:

* *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 2007

Mannheim (urban 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	5	9,6	21		95		
PM_{10}	3	23	34	100				
NO	3	17	48	312		510		
NO_2	3	32	46	98		190		
CO	1	200	430	2000		3900		
O_3	3	40	66	130		219		

PM_{10}:	Monitoring method(s) used:	Gravimetrically
	Correction factor for this method according to EU-directive 1999/30/EC):	1
	Number of limit violations of the daily mean standard of 50 µg/m³ at the highest stressed station in 2007 (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 2007:	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	1*	*7**	6,7*	*27**		*219**		
PM_{10}	1	28	36	96				
NO	1	38	72	296		483		
NO_2	1	53	57	107		178		
CO	1	500	1030	2200		3600		
O_3								

PM_{10}:	Monitoring method(s) used:	Gravimetrically
	Correction factor for this method according to EU-directive 1999/30/EC):	1
	Number of limit violations of the daily mean standard of 50 µg/m³ at the highest stressed station in 2007 (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 2007:	0

*SO_2 emitter is near the measurement station MA-Nord

[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 2007

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	5	13	28	-	58	-	17*
TSP	1	45	59	111	-	267	-	87*
PM_{10}	3	54	99	190	-	-	-	132*
NO	8	51	181	249	-	918	-	332**
NO_2	8	62	110	211	-	403	-	177**
CO	5	1192	2800	5800	-	8000	-	-
O_3	3	40	82	134	-	229	-	143**

PM_{10}:	Monitoring method(s) used:	TEOM (3 stations), gravimetrically (1 station)
	Correction factor for this method according to EU-directive 1999/30/EC):	n.a. / 1
	Number of limit violations of the daily mean standard of 50 µg/m³ at the highest stressed station in 2007 (measured values **including** correction factor):	132
NO_2	Number of limit violations of the 1h mean standard of 200 µg/m³ at the highest stressed station in 2007:	n.a.

	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	52	90	182	-	-	-	142*
$PM_{2.5}$ TEOM	1	35	71	139	-	-	-	104*
$PM_{2.5}$ grav.	1	35	74	135	-	-	-	107*
Benzene	2	3	7	18,8		33		-

* percentile of the average 24 hour concentrations levels

** percentile of the average 1 hour concentrations levels

[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 2007

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	2	5	7	15	23	29	29	12
PM_{10}	6	27	42	120	243	276	320	92
NO	7	49	145	410	557	778	805	379
NO_2	7	58	100	162	249	328	342	185
CO	5	600	1000	2300	3600	4900	5300	2000
O_3	3	38	68	100	155	159	160	115

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 2007 (measured values **including** correction factor):	53
NO_2	Number of limit violations of the 1h mean standard of 200 µg/m³ at the highest stressed station in 2007:	69

Comment:
PM_{10}: The value form 01.01.2007 is not in the analysis, because fireworks in the New Year's Eve cause very high single data.

Praha

	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	14	5	12	46		108		19
PM_{10}	20	30	75	107		484		132
NO	14	20	115			268		189
NO_2	22	41	107	240		304		145
CO	13	538	2399	2823				2573
O_3	7	43	76	134				105

PM_{10}:	Monitoring method(s) used:	RADIO, gravimetrically
	Correction factor for this method according to EU-directive 1999/30/EC):	1
	Number of limit violations of the daily mean standard of 50 µg/m³ at the highest stressed station in 2007 (measured values **including** correction factor):	132
NO_2	Number of limit violations of the 1h mean standard of 200 µg/m³ at the highest stressed station in 2007:	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 2007

Riga (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}	2	50	71	167	347	384	431	143
NO	1	105	133	272	587	733	793	320
NO_2	1	49	62	115	156	187	317	106
CO	1	700	1000	1600	3300	4100	4600	2000
O_3	1	20	27	47	74	77	80	48

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 2007 (measured values **including** correction factor):	148
NO_2	Number of limit violations of the 1h mean standard of 200 µg/m³ at the highest stressed station in 2007:	0

Comments:
98-percentiles: SO_2, NO_2, PM_{10}, CO, Ozone: 98%-value of the 1h mean values

Riga (urban 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	3	5	12	28	25	41	41	13
PM_{10}	1	34	48	125				106
NO								
NO_2	3	20	35	77	175	175	175	77
CO								
O_3	3	44	65	84	102	107	108	85

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 2007 (measured values **including** correction factor):	0
NO_2	Number of limit violations of the 1h mean standard of 200 µg/m³ at the highest stressed station in 2007:	0

Comment:
98-percentiles: SO_2, NO_2, PM_{10}, CO, Ozone: 98%-value of the 1h mean 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 2007

Rhine / Rhur 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	12	8				493		103
PM_{10}	22	26						
NO	22	14				681		148
NO_2	22	29				197		91
CO	-							
O_3	16	36				203		118

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):	1.0
	Number of limit violations of the daily mean standard of 50 µg/m³ at the highest stressed station in 2007 (measured values **including** correction factor):	71
NO_2	Number of limit violations of the 1h mean standard of 200 µg/m³ at the highest stressed station in 2007:	0

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	8	123	17	35	N/A	63	N/A	34
PM_{10}	3	27	38	137	N/A	226	N/A	68
NO	3	16	35	154	N/A	423	N/A	91
NO_2	3	35	43	89	N/A	145	N/A	80
CO	2	466	604	1626	N/A	4921	N/A	1185
O_3	3	38	59	91	N/A	152	N/A	96

PM_{10}:	Monitoring method(s) used:	TEOM SES
	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 2007 (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 2007:	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 2007

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	2	4	5	13	25	51	96	10
PM_{10}	3	24	47	118				70
NO	3	31	117	335	472	619	702	239
NO_2	3	41	80	126	183	216	242	133
CO	2	445	880	1940	2800	2980	3110	1420
O_3	2	44	72	113	169	173	175	121

PM_{10}:	Monitoring method(s) used:	gravimetrically
	Correction factor for this method according to EU-directive 1999/30/EC):	1
	Number of limit violations of the daily mean standard of 50 µg/m³ at the highest stressed station in 2007 (measured values **including** correction factor):	25
NO_2	Number of limit violations of the 1h mean standard of 200 µg/m³ at the highest stressed station in 2007:	1

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	14		157		319		83
PM_{10}	5	56		509				298
NO								
NO_2	5	37		1734		275		130
CO	4	1200						
O_3	3	38		111		188		111

PM_{10}:	Monitoring method(s) used:	EN12341 and ß-ray 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 2007 (measured values **including** correction factor):	195
NO_2	Number of limit violations of the 1h mean standard of 200 µg/m³ at the highest stressed station in 2007:	24

[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 2007

St. Pölten, urban station (Eybnerstrasse)

	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 mouth [µg/m³]
SO_2	1	3	4	16	30	31	33	15
PM_{10}	1	26	34	81	233	607	638	97
NO	1	8	17	57	212	324	327	101
NO_2	1	25	35	55	92	105	115	69
CO	/	/	/	/	/	/	/	/
O_3	1	47	76	132	202	213	215	184

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 2007 (measured values **including** correction factor):	23
NO_2	Number of limit violations of the 1h mean standard of 200 µg/m³ at the highest stressed station in 2007:	0

St. Pölten, traffically influenced (Europaplatz)

	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	25	37	80	121	128	130	98
NO	1	37	64	156	448	554	615	264
NO_2	1	42	49	79	168	194	197	107
CO	1	440	670	1130	1970	2910	2560	1620
O_3	/	/	/	/	/	/	/	/

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 2007 (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 2007:	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 2007

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 hour [µg/m³]
SO_2	2	1	2					
PM_{10}	4	34	90	295		666		
NO								
NO_2	4	41	54	127		291		110
CO	1	500	600	1600		5400		
O_3	1	51	67	93		130		

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 2007 (measured values **including** correction factor):	75
NO_2	Number of limit violations of the 1h mean standard of 200 µg/m³ at the highest stressed station in 2007:	3

Comment:
All stations are situated in the inner city of Stockholm
SO_2: roof level, Diffusive samplers -only per month
PM_{10}, NO_2, CO: street level, O_3: roof level

Stuttgart

	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		15		30		
PM_{10}	7	32						
NO								
NO_2	6	74				309		226
CO	3	567				6700		
O_3	3	33				182		

PM_{10}:	Monitoring method(s) used:	gravimetrically
	Correction factor for this method according to EU-directive 1999/30/EC):	1
	Number of limit violations of the daily mean standard of 50 µg/m³ at the highest stressed station in 2007 (measured values **including** correction factor):	110
NO_2	Number of limit violations of the 1h mean standard of 200 µg/m³ at the highest stressed station in 2007:	450

[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 2007

Thessaloniki

	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 hour [µg/m³]
SO_2	2	14		72		288		68
PM_{10}	5	45		177				148
NO	7	23				792		463
NO_2	7	32				206		101
CO	1	400				4800		900
O_3	5	43				185		132

PM_{10}:	Monitoring method(s) used:	β-attenuation
	Correction factor for this method according to EU-directive 1999/30/EC):	1
	Number of limit violations of the daily mean standard of 50 µg/m³ at the highest stressed station in 2007 (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 2007:	3

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	3	7	32	65	73	84	24
PM_{10}	13	25	52	102	135	135	138	88
NO	17	17	125	427	555	589	607	376
NO_2	17	32	80	135	190	203	207	165
CO	4	450	780	1800	2110	2270	2350	1460
O_3	5	53	97	166	196	198	198	141

PM_{10}:	Monitoring method(s) used:	6 Stations gravimetric, 7 Stations continuous (including correction factor)
	Correction factor for this method according to EU-directive 1999/30/EC):	depending on station and quarter
	Number of limit violations of the daily mean standard of 50 µg/m³ at the highest stressed station in 2007 (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 2007:	11

Comments:
PM_{10}: The used station factors k * x + d vary depending on station and quarter:
k [0.90 … 1.56], d [-3.30 … 4.97] for 2007 for the no-gravimetric-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 2007

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	2	5	*7*	*15*	*17*	*26*	*8*
PM_{10}	1	25	40	64	-	-	-	-
NO	1	29	68	135	275	312	364	145
NO_2	1	36	52	73	122	137	145	83
CO	1	537	1017	1543	2658	2966	3314	1689
O_3	1	32	60	101	152	157	157	113

PM_{10}:	Monitoring method(s) used:	Gravimetrically (Digitel HVS)
	Correction factor for this method according to EU-directive 1999/30/EC):	1
	Number of limit violations of the daily mean standard of 50 µg/m³ at the highest stressed station in 2007 (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 2007:	0

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 day [µg/m³]
SO_2	9	7,7	16,1	56,4	-	125,2	-	35
PM_{10}	11	30,7	55,8	147,0	-	309,3	-	106
NO	9	20,4	111,0	250,5	-	620,5	-	189
NO_2	9	28,5	76,0	152,5	-	245,5	-	124
CO	5	651,8	1353,0	2669,0	-	6919,0	-	2131
O_3	4	38,1	61,9	86,6	-	148,3	-	82

[1]

PM_{10}:	Monitoring method(s) used:	automatic TEOM, manual gravimetric method
	Correction factor for this method according to EU-directive 1999/30/EC):	automatic TEOM – factor 1,15
	Number of limit violations of the daily mean standard of 50 µg/m³ at the highest stressed station in 2007 (measured values **including** correction factor):	136
NO_2	Number of limit violations of the 1h mean standard of 200 µg/m³ at the highest stressed station in 2007:	17

Comments:

*: traffic station, TEOM automatic

**: traffic 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 2007

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	14	22	28	36	13
PM_{10}	1	22	31	77	285	395	530	72
NO	1	19	41	244	441	498	529	148
NO_2	1	33	42	70	119	149	153	84
CO	1	400	500	1600	3000	3500	3700	1000
O_3	1	36	63	107	181	183	183	116

PM_{10}:	Monitoring method(s) used:	ß-absorption
	Correction factor for this method according to EU-directive 1999/30/EC):	1
	Number of limit violations of the daily mean standard of 50 µg/m³ at the highest stressed station in 2007 (measured values **including** correction factor):	16
NO_2	Number of limit violations of the 1h mean standard of 200 µg/m³ at the highest stressed station in 2007:	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	36	96	435	563	772	79
NO	1	64	99	323	652	720	801	269
NO_2	1	61	68	125	218	241	255	130
CO	1	800	1000	2700	5000	6000	6900	2400
O_3	-	-	-	-	-	-	-	-

[1]

PM_{10}:	Monitoring method(s) used:	ß-absorption
	Correction factor for this method according to EU-directive 1999/30/EC):	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):	20
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 2007

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	9	4,5	23	60		347		43
PM_{10}	9	37	59	171		2173		94
NO	-							
NO_2	8	39	54	104		167		81
CO	3	620		3050				1850
O_3	6	29	53	127				88

[1]

PM_{10}:	Monitoring method(s) used:	no information
	Correction factor for this method according to EU-directive 1999/30/EC):	n.a.
	Number of limit violations of the daily mean standard of 50 µg/m³ at the highest stressed station in 2007 (measured values **including** correction factor):	108
NO_2	Number of limit violations of the 1h mean standard of 200 µg/m³ at the highest stressed station in 2007:	0

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	6	14	29	37	41	20
PM_{10}	1	21	30	86	208	529	1003	94
NO	1	12	28	137	246	292	292	163
NO_2	1	34	44	78	105	121	126	100
CO	1	360	475	1142	1572	1775	1805	1316
O_3	1	45	70	119	165	169	174	148

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):	1
	Number of limit violations of the daily mean standard of 50 µg/m³ at the highest stressed station in 2007 (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 2007:	0

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

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