

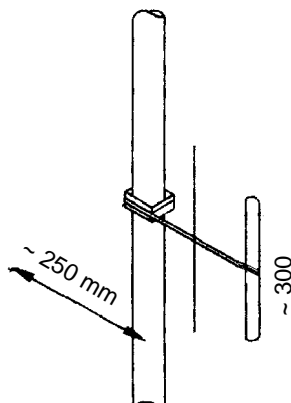
ORDER NUMBER	TYPE
WS 402 02 .18	2 element yagi
WS 402 03 .18	2 element yagi, heavy duty with radome
WS 403 02 .1.	3 element yagi
WS 403 03 .1.	3 element yagi, heavy duty with radome
WS 404 02 .1 .	4 element yagi
WS 404 03 .1 .	4 element yagi, heavy duty with radome
WS 406 02 .1 .	6 element yagi
WS 406 03 .1 .	6 element yagi, heavy duty with radome
WS 409 02 .1 .	9 element yagi
WS 409 03 .1 .	9 element yagi, heavy duty with radome
WS 412 02 .1 .	12 element yagi
WS 412 03 .1 .	12 element yagi, heavy duty with radome
WS 419 03 .1 9	19 element yagi, heavy duty with radome
WS 419 03 .1 . duo, quadro	combined 19 element yagi, heavy duty with radome
WS 421 02 22 .	21 element yagi
WS 421 03 22 .	21 element yagi, heavy duty with radome
WS 441 03 12 9	bidirectional antenna, 4 dB , heavy duty with radome
WS 442 02 12 9	bidirectional antenna, 5 dB
WS 442 03 12 .	bidirectional antenna, 5 dB , heavy duty with radome
WS 442 02 19 9	bidirectional antenna for wall mounting
WS 442 03 19 .	bidirectional antenna for wall, heavy duty with radome
WS 443/4 02/3 12 .	bidirectional antennas, stacked
WS 445/6 02/3 12 .	bidirectional antennas, duo, quadro
WS 448 02 12 9	bidirectional antenna 7 dB
WS 448 03 12 9	bidirectional antenna 7 dB , heavy duty with radome
WS 451 02 11	directional antenna kleewi
WS 451/2 03 11	directional antenna kleewi, heavy duty with radome
WS 471 02 .1 9	corner reflector
WS 471 03 .1 9	corner reflector, heavy duty
WS 472 03 11 .	2 stacked corner reflector, heavy duty
WS 473 03 11 .	4 stacked corner reflector, heavy duty
WS .80 22 31 1	log periodic antennas
WS 380 22 31 2 sp	log periodic 200 - 500 MHz
WS 480 22 31 1 sp	log periodic 500 - 1000 MHz
WS 780 22 31 3	log periodic 800 - 3000 MHz

2-ELEMENT YAGI ANTENNA

WS 402 02 .1 8

390 - 470 MHz

WS 402 02 11 .



TYPE NO.

vertical polarization

WS 402 02 11 8: 390 - 470 MHz

horizontal polarization

WS 402 02 21 8: 390 - 470 MHz

further frequencies on request

IMPEDANCE

50 Ω

GAIN

3.5 dB (ref. λ/2 dipole)

VSWR

< 1.3, at the limits of the band < 1.4

POWER

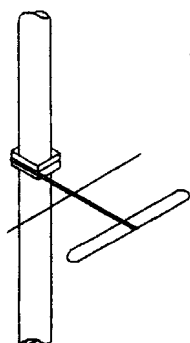
max. 150 watts

3 dB BEAMWIDTH

in polarization, E-plane: 74°

in H-plane: 130°

WS 402 02 21 .



TERMINATION

2 m cable RG 213/U ending with N male

other termination on request

GROUNDING

all metal parts are DC grounded

MOUNTING

mast-ø *clamp*

30 - 80 mm WG 11 (standard)

50 - 104 mm WG 12 (option)

clamp for other mast-ø on request

MATERIAL

aluminium, bolts of stainless steel, weather-resistant plastics

WEIGHT

1.2 kg

WIND AREA

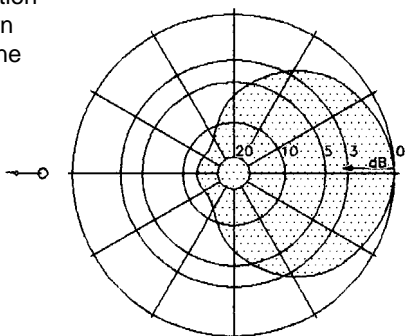
0.024 m²

WIND LOAD

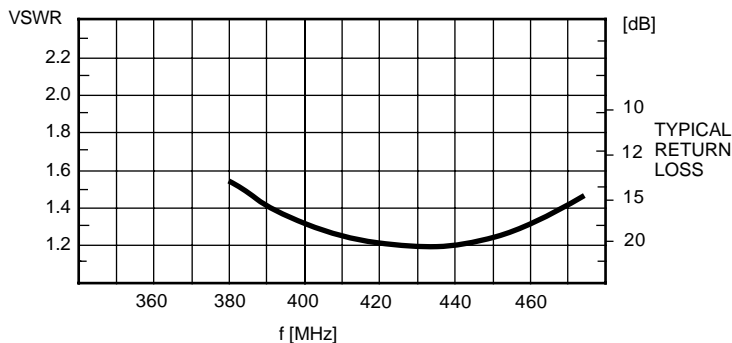
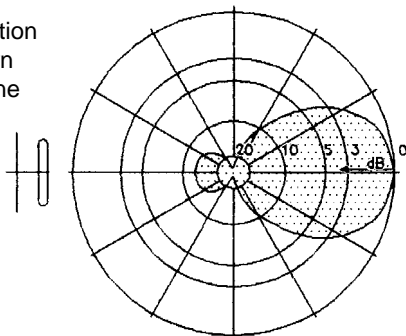
31 N (150 km/h)

23 N (130 km/h)

Radiation
Pattern
H Plane



Radiation
Pattern
E Plane

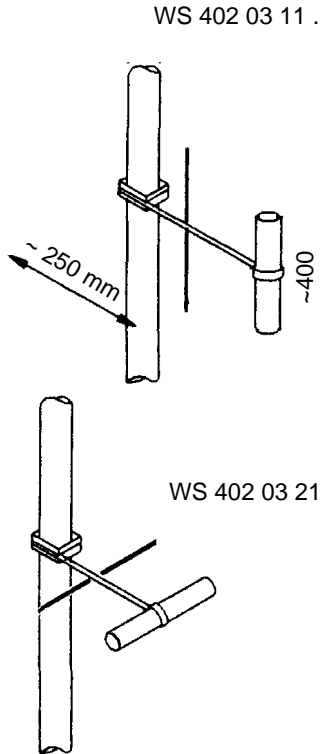


KW 1-08

WIPIC reserves the right to amend specifications in the light of continuing development.

LETRONA AG

Schulstrasse 22, CH-9504 Frittschen
Tel.: +41 071 654 64 64, Fax: +41 071 654 64 65
E-Mail: info@letrona.ch



TYPE NO. vertical polarization
WS 402 03 11 8: 390 - 470 MHz
 horizontal polarization
WS 402 03 21 8: 390 - 470 MHz

DESCRIPTION heavy duty, with radome
 The radome protects the antenna dipole from environmental influences, icing, and increases the lightning protection.

IMPEDANCE 50 Ω

GAIN 3.5 dB (ref. $\lambda/2$ dipole)

VSWR < 1.3, at the limits of the band < 1.4

POWER max. 150 watts

3 dB BEAMWIDTH in polarization, E-plane: 74°
 vertical to pol., H-plane: 130°

TERMINATION 2 m cable RG 213/U ending with N male
 other termination on request

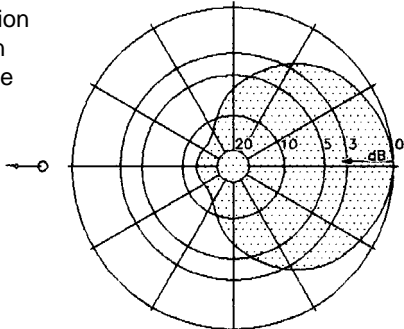
GROUNDING all metal parts are DC grounded

MOUNTING mast- \emptyset clamp
 30 - 80 mm WG 13 (standard)
 50 - 104 mm WG 14 (option)
 clamp for other mast- \emptyset on request

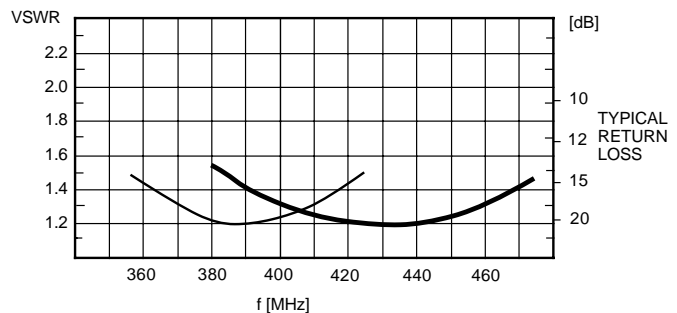
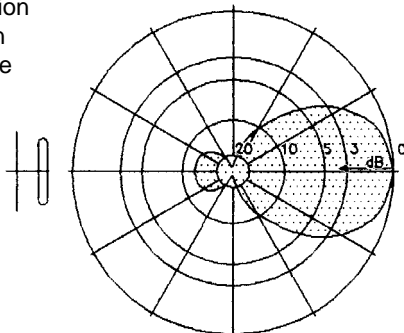
MATERIAL aluminium, bolts of stainless steel, weather-resistant
 plastics, radome of UV-stabilized polyethylene

WEIGHT 3.3 kg
WIND AREA 0.07 m²
WIND LOAD 90 N (150 km/h)
 70 N (130 km/h)

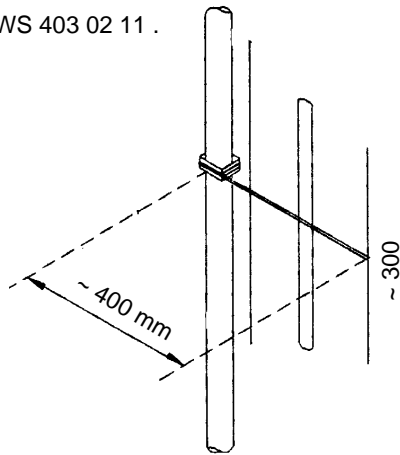
Radiation
 Pattern
 H Plane



Radiation
 Pattern
 E Plane



WS 403 02 11 .



TYPE NO.

vertical polarization

WS 403 02 11 5: 225 - 270 MHz

WS 403 02 11 6: 260 - 310 MHz

WS 403 02 11 7: 310 - 370 MHz

WS 403 02 11 8: 350 - 400 MHz

WS 403 02 11 9: 400 - 470 MHz

horizontal polarization

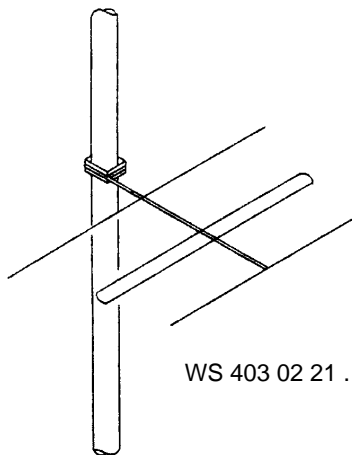
WS 403 02 21 5: 225 - 270 MHz

WS 403 02 21 6: 260 - 310 MHz

WS 403 02 21 7: 310 - 370 MHz

WS 403 02 21 8: 350 - 400 MHz

WS 403 02 21 9: 400 - 470 MHz



WS 403 02 21 .

IMPEDANCE

50 Ω

GAIN

5 dB (ref. λ/2 dipole)

VSWR

< 1.3, at the limits of the band < 1.4

POWER

max. 150 watts

3 dB BEAMWIDTH

in polarization, E-plane: 66°

vertical to pol., H-plane: 110°

TERMINATION

2 m cable RG 213/U ending with N male
other termination on request

GROUNDING

all metal parts are DC grounded

MOUNTING

mast-ø

clamp

30 - 80 mm

WG 11 (standard)

50 - 104 mm

WG 12 (option)

clamp for other mast-ø on request

MATERIAL

aluminium, bolts of stainless steel, weather-resistant
plastics

WEIGHT

~2 kg

WIND AREA

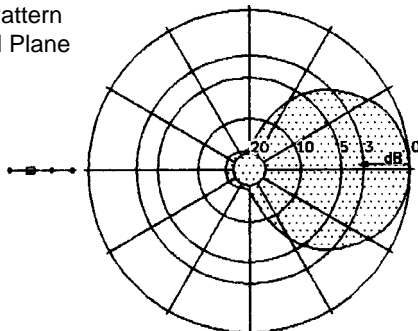
0.04 m²

WIND LOAD

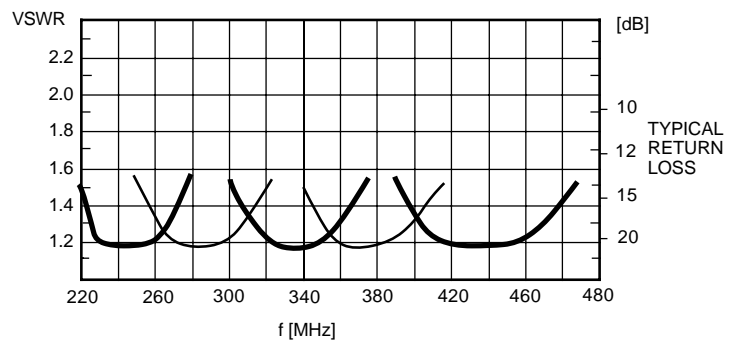
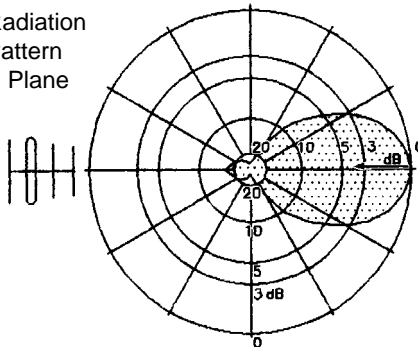
51 N (150 km/h)

38 N (130 km/h)

Radiation
Pattern
H Plane



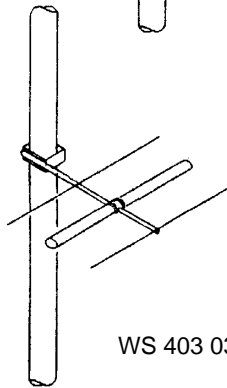
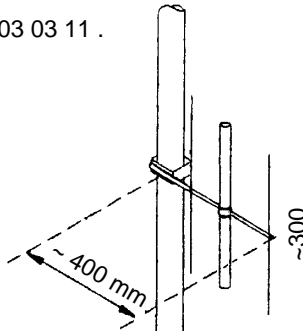
Radiation
Pattern
E Plane



KW 1-08

WIPIC reserves the right to amend specifications in the light of continuing development.

WS 403 03 11 .



WS 403 03 21 .

TYPE NO.

vertical polarization
WS 403 03 11 5: 225 - 270 MHz
WS 403 03 11 6: 260 - 310 MHz
WS 403 03 11 7: 310 - 370 MHz
WS 403 03 11 8: 350 - 400 MHz
WS 403 03 11 9: 400 - 470 MHz
 horizontal polarization
WS 403 03 21 5: 225 - 270 MHz
WS 403 03 21 6: 260 - 310 MHz
WS 403 03 21 7: 310 - 370 MHz
WS 403 03 21 8: 350 - 400 MHz
WS 403 03 21 9: 400 - 470 MHz

DESCRIPTION

heavy duty, with radome
 The radome protects the antenna dipole from environmental influences, icing, and increases the lightning protection.

IMPEDANCE

50 Ω

GAIN

5 dB (ref. λ/2 dipole)

VSWR

< 1.3, at the limits of the band < 1.4

POWER

max. 150 watts

3 dB BEAMWIDTH

in polarization, E-plane: 66°
 vertical to pol., H-plane: 110°

TERMINATION

2 m cable RG 213/U ending with N male
 other termination on request

GROUNDING

all metal parts are DC grounded

MOUNTING

<i>mast-ø</i>	<i>clamp</i>
30 - 80 mm	WG 13 (standard)
50 - 104 mm	WG 14 (option)
clamp for other mast-ø on request	

MATERIAL

aluminium, bolts of stainless steel, weather-resistant plastics, radome of UV-stabilized polyethylene

WEIGHT

~3.5 kg

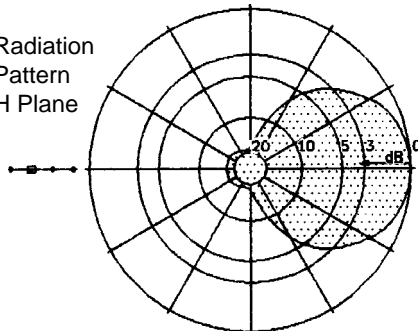
WIND AREA

~.07 m²

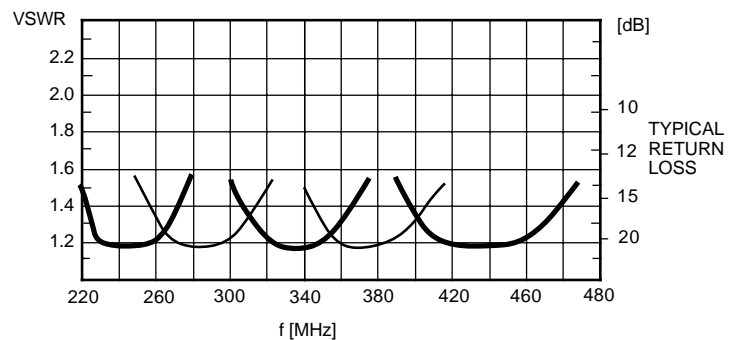
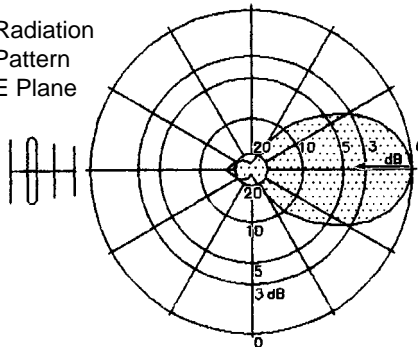
WIND LOAD

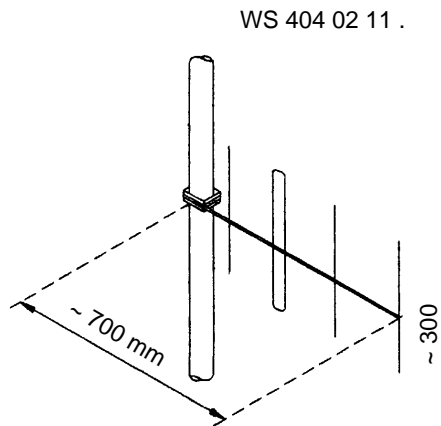
90 N (150 km/h)
 70 N (130 km/h)

Radiation Pattern
H Plane



Radiation Pattern
E Plane

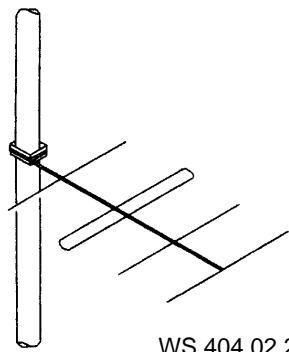




WS 404 02 11 .

TYPE NO.

vertical polarization
WS 404 02 11 5: 225 - 270 MHz
WS 404 02 11 6: 260 - 310 MHz
WS 404 02 11 7: 310 - 370 MHz
WS 404 02 11 8: 350 - 400 MHz
WS 404 02 11 9: 400 - 470 MHz
horizontal polarization
WS 404 02 21 5: 225 - 270 MHz
WS 404 02 21 6: 260 - 310 MHz
WS 404 02 21 7: 310 - 370 MHz
WS 404 02 21 8: 350 - 400 MHz
WS 404 02 21 9: 400 - 470 MHz



WS 404 02 21 .

IMPEDANCE

50 Ω

GAIN

6.5 dB (ref. λ/2 dipole)

VSWR

< 1.3, at the limits of the band < 1.4

POWER

max. 150 watts

3 dB BEAMWIDTH

in polarization, E-plane: 58°
vertical to pol., H-plane: 90°

TERMINATION

2 m cable RG 213/U ending with N male
other termination on request

GROUNDING

all metal parts are DC grounded

MOUNTING

<i>mast-ø</i>	<i>clamp</i>
30 - 80 mm	WG 11 (standard)
50 - 104 mm	WG 12 (option)
clamp for other mast-ø on request	

MATERIAL

aluminium, bolts of stainless steel, weather-resistant plastics

WEIGHT

1.5 kg

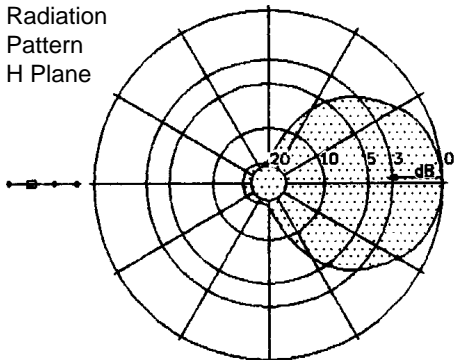
WIND AREA

0.04 m²

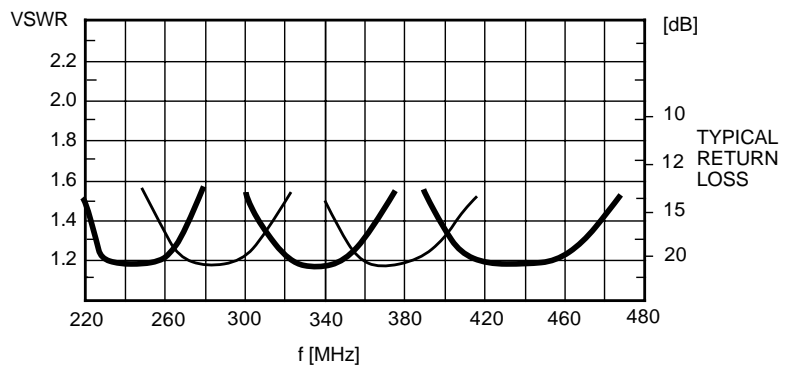
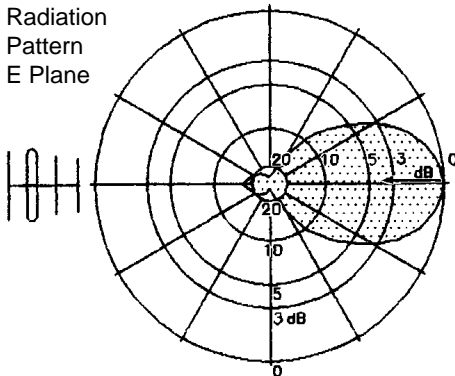
WIND LOAD

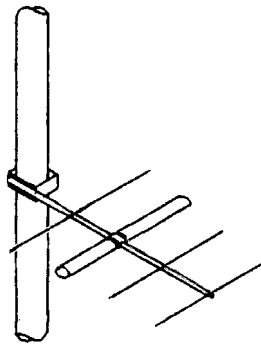
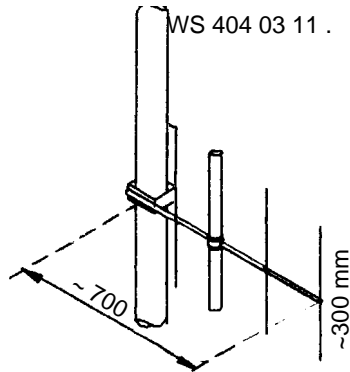
51 N (150 km/h)
38 N (130 km/h)

Radiation
Pattern
H Plane



Radiation
Pattern
E Plane





TYPE NO.	vertical polarization
	WS 404 03 11 5: 225 - 270 MHz
	WS 404 03 11 6: 260 - 310 MHz
	WS 404 03 11 7: 310 - 370 MHz
	WS 404 03 11 8: 350 - 400 MHz
	WS 404 03 11 9: 400 - 470 MHz
	horizontal polarization
	WS 404 03 21 5: 225 - 270 MHz
	WS 404 03 21 6: 260 - 310 MHz
	WS 404 03 21 9: 400 - 470 MHz

DESCRIPTION heavy duty, with radome
The radome protects the antenna dipole from environmental influences, icing, and increases the lightning protection.

IMPEDANCE 50 Ω

GAIN 6.5 dB (ref. λ/2 dipole)

VSWR < 1.3, at the limits of the band <1.4

POWER max. 150 watts

3 dB BEAMWIDTH in polarization, E-plane: 58°
vertical to pol., H-plane: 90°

TERMINATION 2 m cable RG 213/U ending with N male
other termination on request

GROUNDING all metal parts are DC grounded

MOUNTING

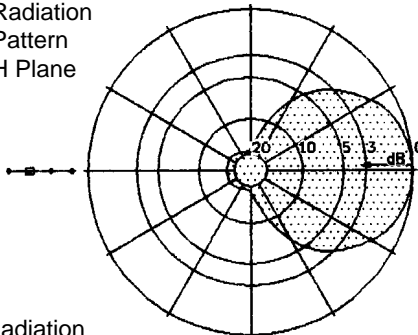
<i>mast-ø</i>	<i>clamp</i>
30 - 80 mm	WG 15 (standard)
50 - 104 mm	WG 16 (option)

clamp for other mast-ø on request

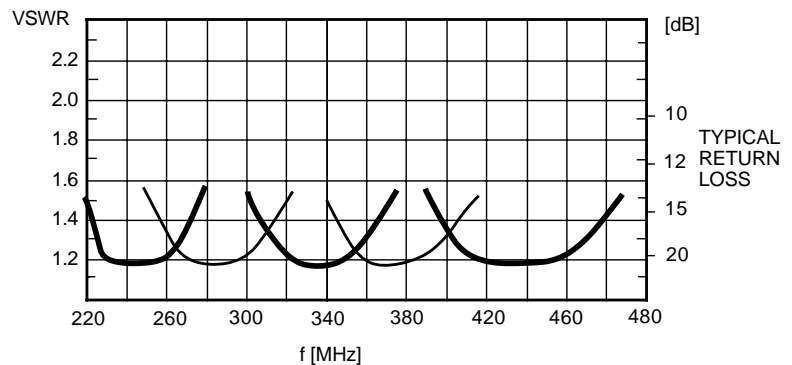
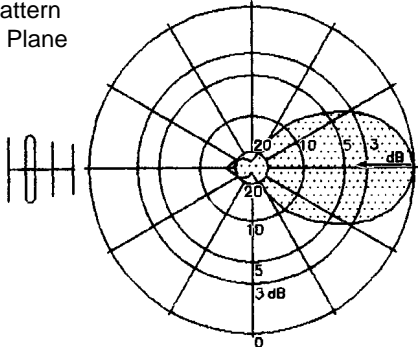
MATERIAL aluminium, bolts of stainless steel, weather-resistant plastics, radome of UV-stabilized polyethylene

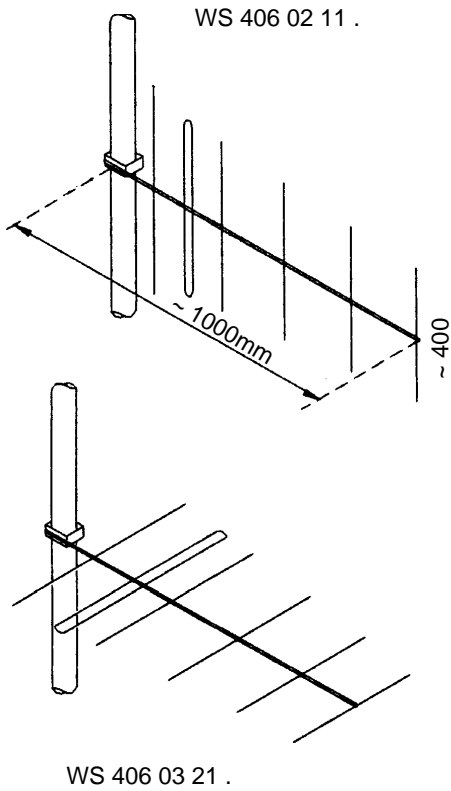
WEIGHT 4 kg
WIND AREA 0.1 m²
WIND LOAD 128 N (150 km/h)
96 N (130 km/h)

Radiation Pattern H Plane



Radiation Pattern E Plane





TYPE NO. WS 406 02 11 6: 220 - 290 MHz vertical polarization
 WS 406 02 11 7: 270 - 350 MHz vertical polarization
 WS 406 02 11 8: 320 - 390 MHz vertical polarization
 WS 406 02 11 9: 380 - 470 MHz vertical polarization

WS 406 02 21 6: 220 - 290 MHz horizontal polarization
 WS 406 02 21 7: 270 - 350 MHz horizontal polarization
 WS 406 02 21 8: 320 - 390 MHz horizontal polarization
 WS 406 02 21 9: 380 - 470 MHz horizontal polarization
 further frequencies on request

IMPEDANCE 50 Ω

GAIN 8.5 dB (ref. to λ/2 dipole)
 F/B: ~ 20 dB

VSWR < 1.3, at the limits of the band < 1.4

POWER max. 150 watts, higher power on request

3 dB BEAMWIDTH in polarization, E-plane: 48°
 vertical to pol. H-plane: 70°

TERMINATION 2 m cable RG 213/U ending with N male
 other termination on request

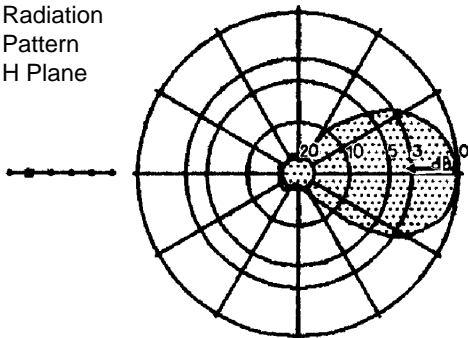
GROUNDING all metal parts are DC grounded

MOUNTING mast ø clamp (see chapt. 10)
 30 - 80 mm WG 11 (standard)
 50 - 104 mm WG 12 (option)
 clamp for other mast ø on request

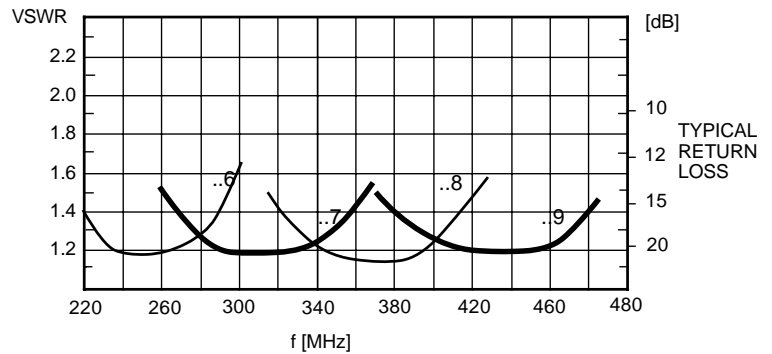
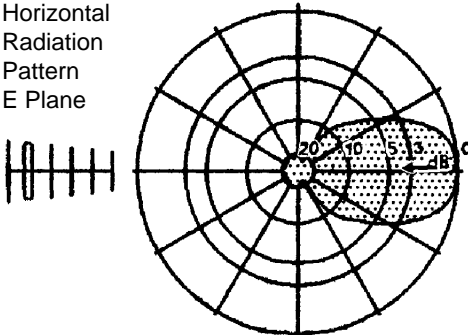
MATERIAL aluminium, bolts of stainless steel, weather-resistant plastics

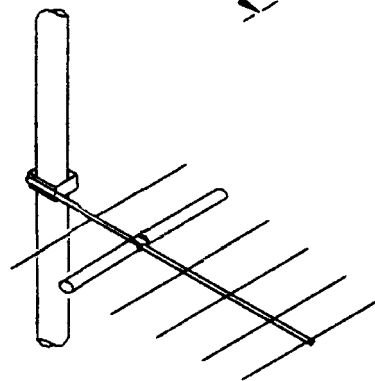
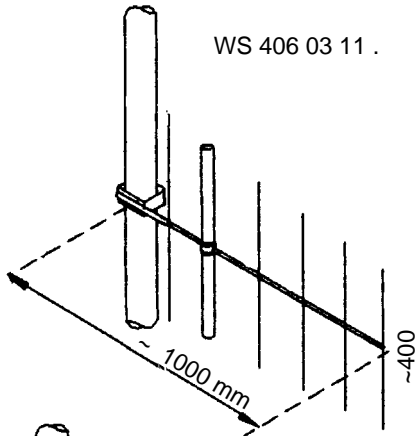
WEIGHT 1.6 kg
WIND AREA 0.05 m²
WIND LOAD 65 N 150 km/h
 47 N 130 km/h

Vertical Radiation Pattern H Plane



Horizontal Radiation Pattern E Plane





TYPE NO.

WS 406 03 11 6: 220 - 290 MHz vertical polarization
WS 406 03 11 7: 270 - 350 MHz vertical polarization
WS 406 03 11 8: 320 - 390 MHz vertical polarization
WS 406 03 11 9: 380 - 470 MHz vertical polarization

WS 406 03 21 6: 220 - 290 MHz horizontal polarization
WS 406 03 21 7: 270 - 350 MHz horizontal polarization
WS 406 03 21 8: 320 - 390 MHz horizontal polarization
WS 406 03 21 9: 380 - 470 MHz horizontal polarization
 further frequencies on request

DESCRIPTION heavy duty, with radome
 The radome protects the antenna dipole from environmental influences, icing, and increases the lightning protection

IMPEDANCE 50 Ω

GAIN 8.5 dB (ref. to λ/2 dipol)
 F/B: ~ 20 dB

VSWR < 1.3, at the limits of the band < 1.4

POWER max. 150 watts, higher power on request

3 dB BEAMWIDTH in polarization, E-plane: 48°
 vertical to pol. H-plane: 70°

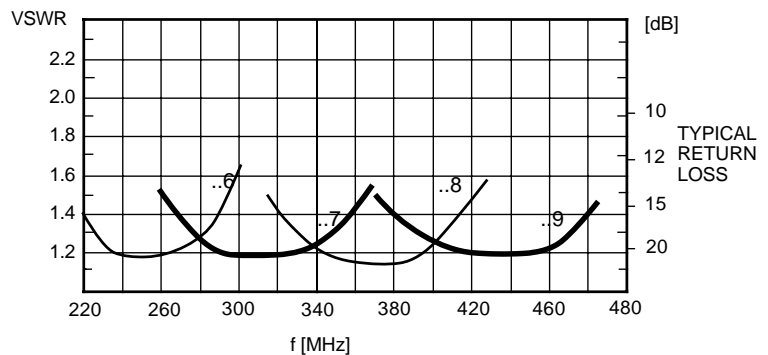
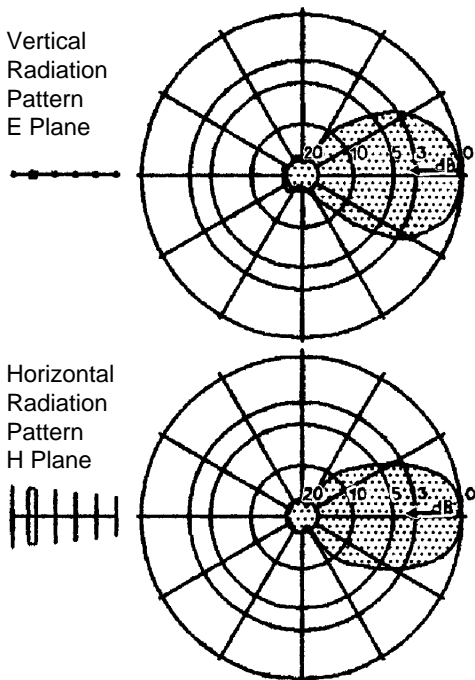
TERMINATION 2 m cable RG 213/U ending with N male
 other termination on request

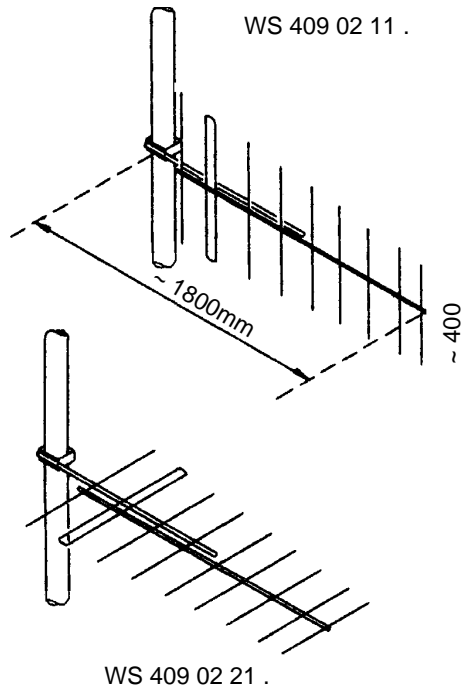
GROUNDING all metal parts are DC grounded

MOUNTING mast ø clamp (see *chapt. 10*)
 30 - 80 mm WG 15 (standard)
 50 - 104 mm WG 16 (option)
 clamp for other mast ø on request

MATERIAL aluminium, bolts of stainless steel, weather-resistant plastics, radome of UV-stabilized polyethylene

WEIGHT 4.5 kg
WIND AREA 0.12 m²
WIND LOAD 155 N 150 km/h
 115 N 130 km/h





TYPE NO. WS 409 02 11 8: 335 - 385 MHz vertical polaris.
 WS 409 02 11 9: 385 - 470 MHz vertical polaris.
 WS 409 02 21 8: 335 - 385 MHz horizontal polaris.
 WS 409 02 21 9: 385 - 470 MHz horizontal polaris.
 further frequencies on request

IMPEDANCE 50 Ω

GAIN 10 dB (ref. to λ/2 dipol)
 F/B: ~20 dB

VSWR < 1.3, at the limits of the band < 1.5

POWER max. 150 watts, higher power on request

3 dB BEAMWIDTH in polarization, E-plane: 40°
 vertical to pol. H-plane: 56°

TERMINATION 2 m cable RG 213/U ending with N male
 other termination on request

GROUNDING all metal parts are DC grounded

MOUNTING mast ø clamp (see chapt. 10)
 30 - 80 mm WG 15 (standard)
 50 - 104 mm WG 16 (option)
 clamp for other mast ø on request

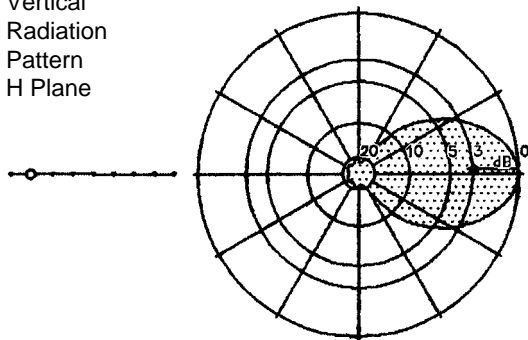
MATERIAL aluminium, bolts of stainless steel, weather-resistant
 plastics

WEIGHT 2 kg

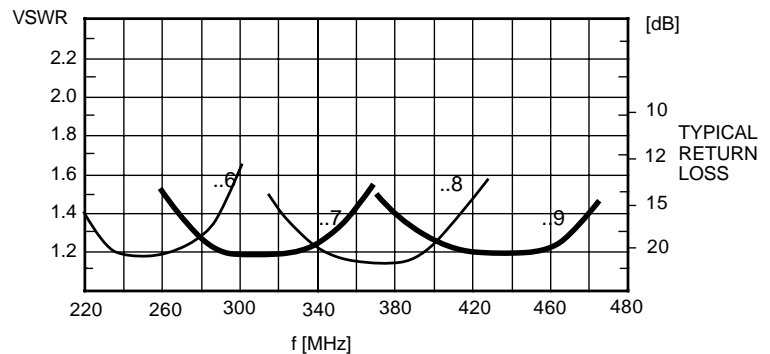
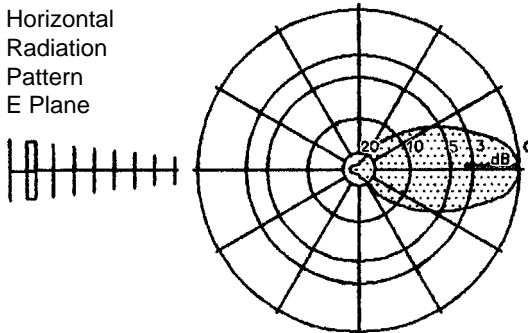
WIND AREA 0.08 m²

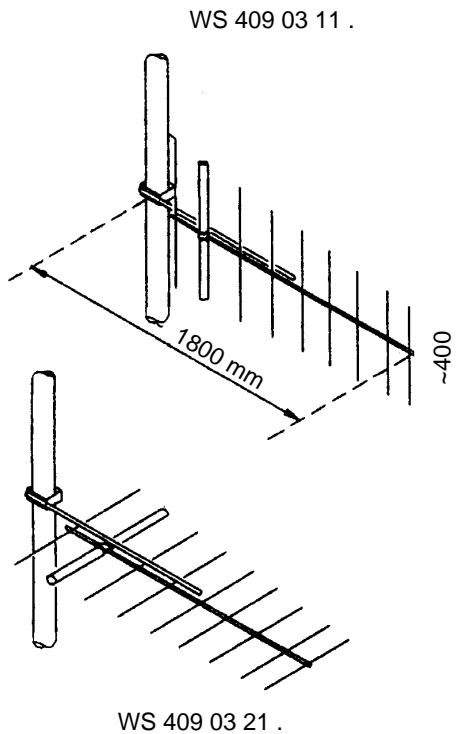
WIND LOAD 100 N 150 km/h
 75 N 130 km/h

Vertical
 Radiation
 Pattern
 H Plane

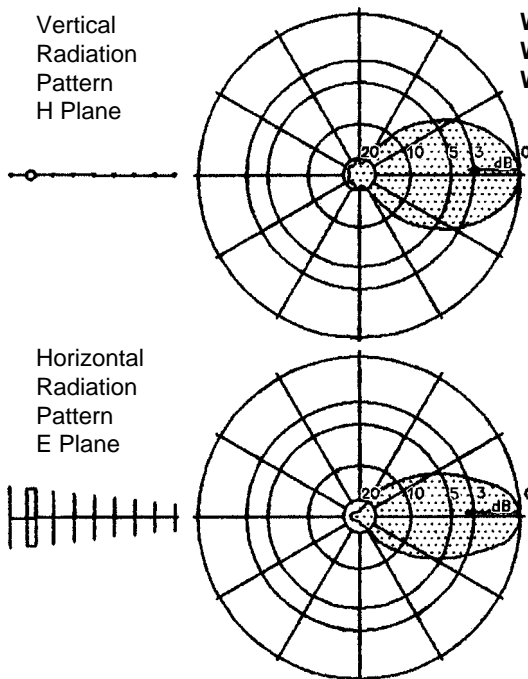


Horizontal
 Radiation
 Pattern
 E Plane

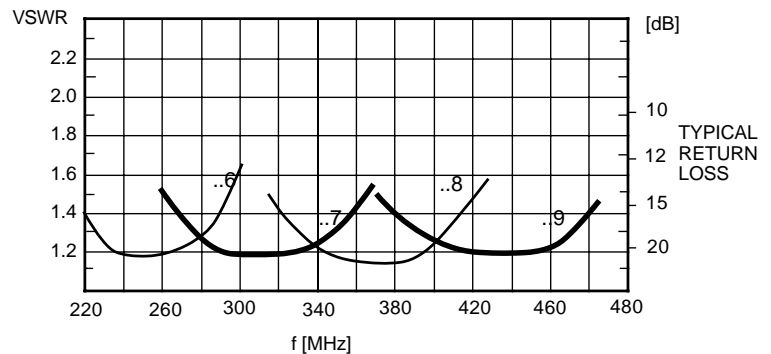


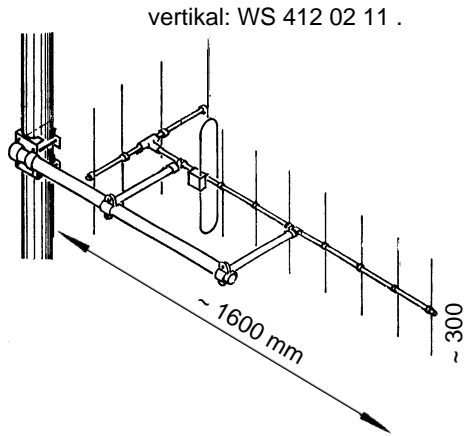


TYPE NO.	WS 409 03 11 8: 335 - 385 MHz vertical polarization WS 409 03 11 9: 386 - 470 MHz vertical polarization WS 409 03 21 8: 335 - 385 MHz horizontal polaris. WS 409 03 21 9: 390 - 470 MHz horizontal polariz. further frequencies on request
DESCRIPTION	heavy duty, with radome The radome protects the antenna dipole against environmental influences, icing, and increases the lightning protection.
IMPEDANCE	50 Ω
GAIN	10 dB (ref. to λ/2 dipole) F/B: ~ 20 dB
VSWR	< 1.3, at the limits of the band < 1.5
POWER	max. 150 watts, higher power on request
3 dB BEAMWIDTH	in polarization, E-plane: 40° vertical to pol. H-plane: 56°
TERMINATION	2 m cable RG 213/U ending with N male other termination on request
GROUNDING	all metal parts are DC grounded
MOUNTING	<i>mast ø</i> <i>clamp (see chapt. 10)</i> 30 - 80 mm WG 17 (standard) 50 - 104 mm WG 18 (option) clamp for other mast ø on request
MATERIAL	aluminium, bolts of stainless steel, weather-resistant plastics, radome of UV-stabilized polyethylene



WEIGHT	4.5 kg
WIND AREA	0.13 m ² 0.58 m ²
WIND LOAD	165 N (150 km/h) 125 N (130 km/h)

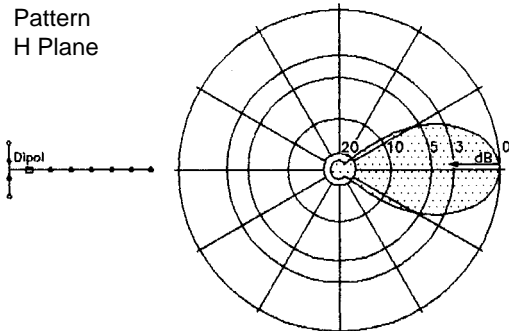




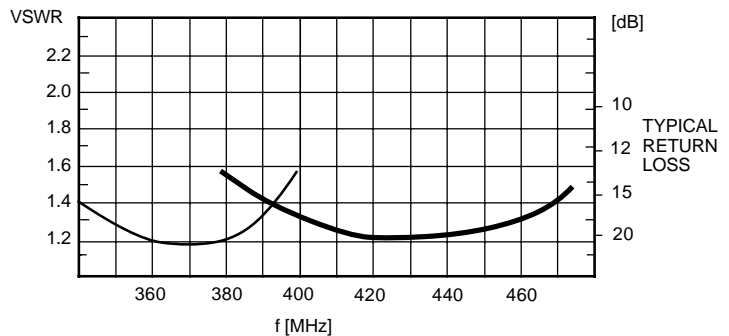
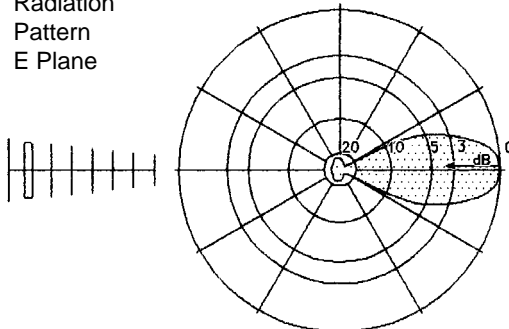
horizontale Polarisation: WS 412 02 21 .
durch Drehung um Ausleger

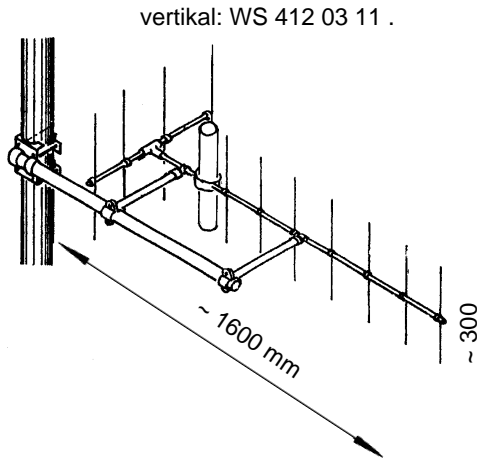
TYPE NO.	vertical polarization WS 412 02 11 8: 350 - 390 MHz WS 412 02 11 9: 390 - 470 MHz horizontal polarization WS 412 02 21 8: 350 - 390 MHz WS 412 02 21 9: 390 - 470 MHz further frequencies on request
IMPEDANCE	50 Ω
GAIN	11 dB (ref. λ/2 dipole) F/B : ≥ 22 dB
VSWR	< 1.3, at the limits of the band < 1.4
POWER	max. 150 watts
3 dB BEAMWIDTH	in polarization, E-plane: 36° vertical to pol., H-plane: 48°
TERMINATION	2 m cable RG 213/U ending with N male other termination on request
GROUNDING	all metal parts are DC grounded
MOUNTING	<i>mast-ø</i> <i>clamp</i> 30 - 80 mm WG 17 (standard) 50 - 104 mm WG 18 (option) clamp for other mast-ø on request
MATERIAL	aluminium, bolts of stainless steel, weather-resistant plastics
WEIGHT	3.2 kg
WIND AREA	0.1 m ²
WIND LOAD	128 N (150 km/h) 96 N (130 km/h)

Radiation
Pattern
H Plane



Radiation
Pattern
E Plane





horizontale Polarisation: WS 412 03 21 .
durch Drehung um Ausleger

TYPE NO. vertical polarization
WS 412 03 11 8: 340 - 390 MHz
WS 412 03 11 9: 390 - 470 MHz
 horizontal polarization
WS 412 03 21 8: 340 - 390 MHz
WS 412 03 21 9: 390 - 470 MHz
 further frequencies on request

DESCRIPTION heavy duty, with radome
 The radome protects the antenna dipole from environmental influences, icing, and increases the lightning protection.

IMPEDANCE 50 Ω

GAIN 11 dB (ref. $\lambda/2$ dipole)
 F/B : ≥ 22 dB

VSWR < 1.3, at the limits of the band < 1.4

POWER max. 150 watts

3 dB BEAMWIDTH in polarization, E-plane: 36°
 vertical to pol., H-plane: 48°

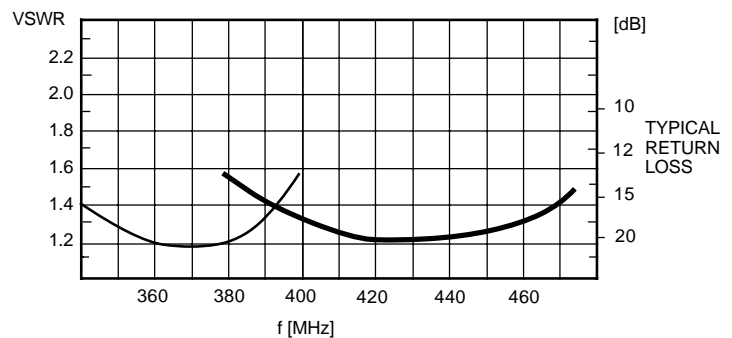
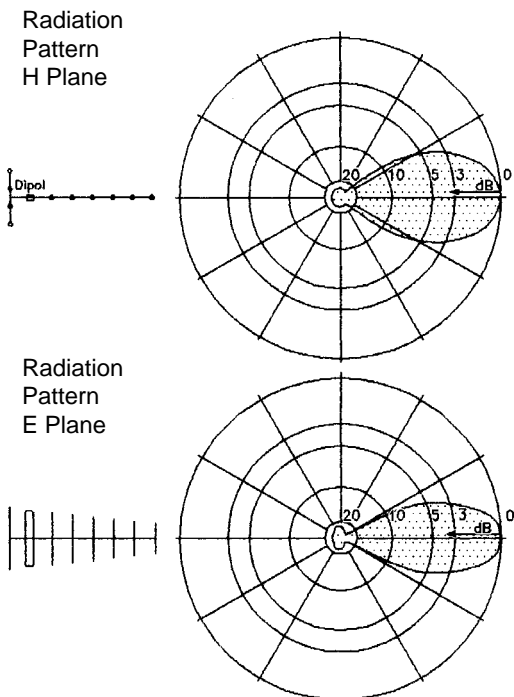
TERMINATION 2 m cable RG 213/U ending with N male
 other termination on request

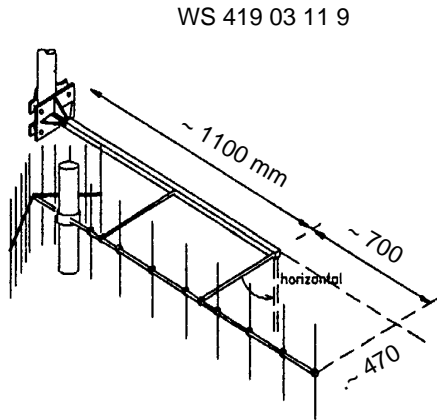
GROUNDING all metal parts are DC grounded

MOUNTING *mast- ϕ* *clamp*
 30 - 80 mm WG 17 (standard)
 50 - 104 mm WG 18 (option)
 clamp for other mast- ϕ on request

MATERIAL aluminium, bolts of stainless steel, weather-resistant
 plastics, radome of UV-stabilized polyethylene

WEIGHT 5.6 kg
WIND AREA 0.155 m²
WIND LOAD 197 N (150 km/h)
 148 N (130 km/h)





TYPE NO. WS 419 03 11 9: 380 - 470 MHz vertical polariz.
 WS 419 03 21 9: 380 - 470 MHz horizontal polariz.
 further frequencies on request

DESCRIPTION heavy duty, with radome
 The radome protects the antenna dipol against environmental influences, icing, and increases the lightning protection.

IMPEDANCE 50 Ω

GAIN 11.5 dB (ref. to $\lambda/2$ dipole)
 F/B: ~ 25 dB

VSWR < 1.3, at the limits of the band < 1.5

POWER max. 250 watts, higher power on request

3 dB BEAMWIDTH in polarization, E-plane: 39°
 vertical to pol. H-plane: 45°

TERMINATION 2 m cable RG 213/U ending with N male
 other termination on request

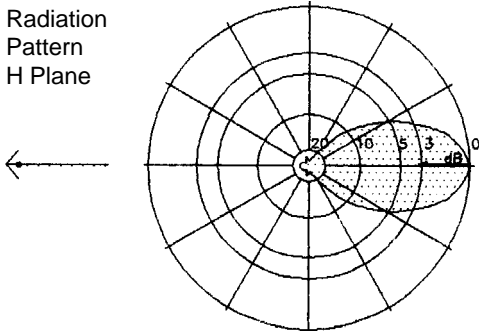
GROUNDING all metal parts are DC grounded

MOUNTING mast \varnothing clamp (see chapt. 10)
 50 - 104 mm WG 52 (standard)
 clamps for other mast \varnothing on request

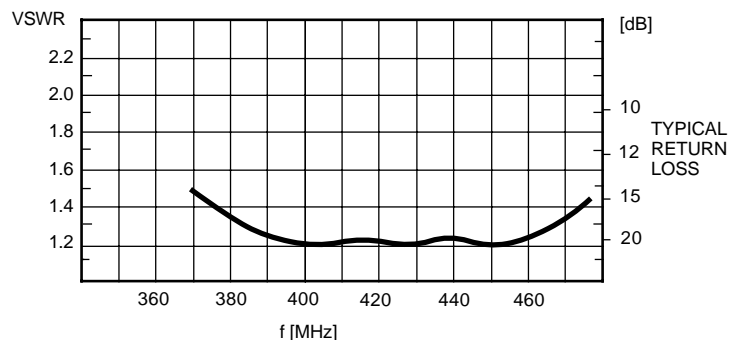
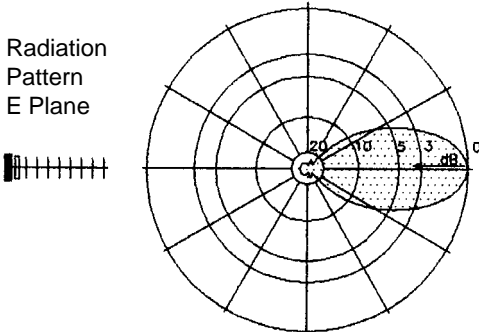
MATERIAL aluminium, bolts of stainless steel, radome of UV-stabilized polyethylene

WEIGHT 14.5 kg
WIND AREA 0.15 m²
WIND LOAD 192 N (150 km/h)
 145 N (130 km/h)
 340 N (200 km/h)

Radiation Pattern H Plane



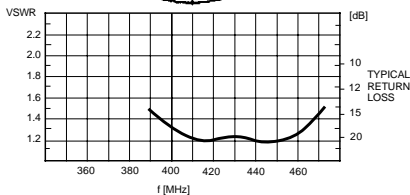
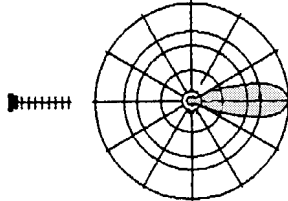
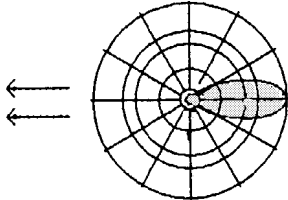
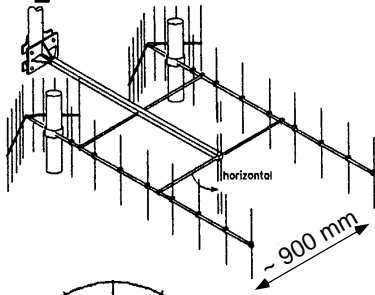
Radiation Pattern E Plane



19-ELEMENT YAGI ANTENNA DUO/QUADRO

WS 419 03 .1 .

380 ... 470 MHz



TYPE NO. WS 419 03 11 9 DUO: 380 - 470 MHz vertical polarization
 WS 419 03 21 9 DUO: 380 - 470 MHz horizontal pol.
 further frequencies on request

IMPEDANCE 50 Ω

GAIN 14 dB (ref. to λ/2 dipole)
 F/B: ~25 dB

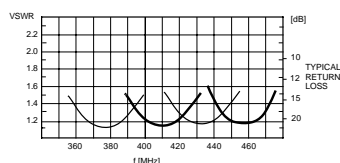
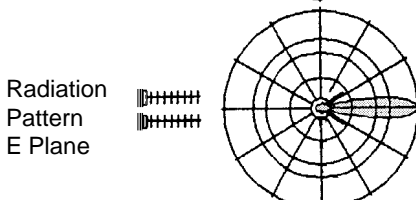
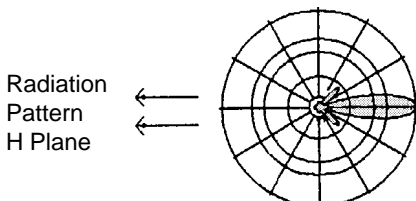
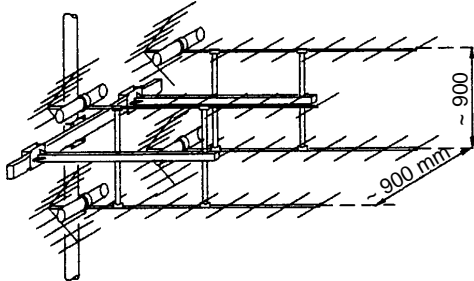
VSWR < 1.3

POWER max. 250 watts, higher power on request

3 dB BEAMWIDTH in polarization, E-plane: 39°
 vertical to pol. H-plane: 22°

TERMINATION in the junction box WAK 1 ending with N female
 other termination on request

WEIGHT 20 kg
WIND AREA 0.38 m²
WIND LOAD 860 N (200 km/h)
 480 N (150 km/h)
 360 N (130 km/h)



TYPE NO. WS 419 03 .1 6 Quadro: 365 - 395 MHz
 WS 419 03 .1 7 Quadro: 395 - 425 MHz
 WS 419 03 .1 8 Quadro: 425 - 455 MHz
 WS 419 03 .1 9 Quadro: 455 - 475 MHz
 further frequencies on request

GAIN 16.5 dB (ref. to λ/2 dipole)
 F/B: min. 25 dB

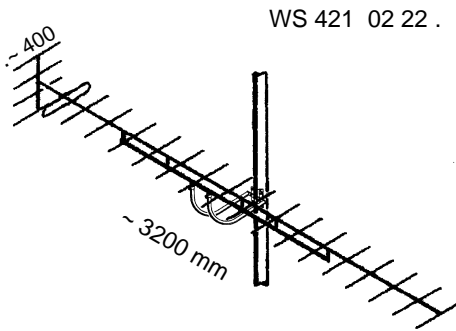
POWER max. 300 watts, higher power on request

3 dB BEAMWIDTH in polarization, E-plane: 20°
 vertical to pol. H-plane: 22°

TERMINATION in the junction box WAK 1 ending with N female

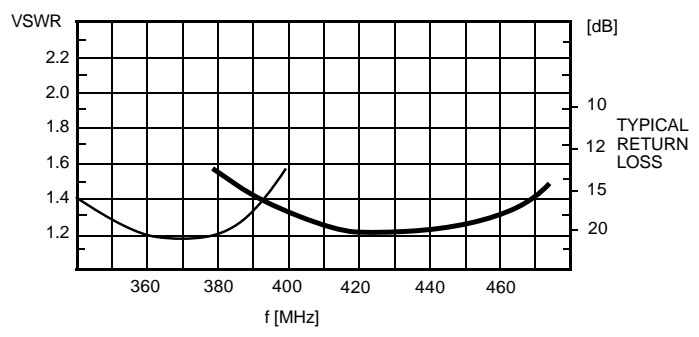
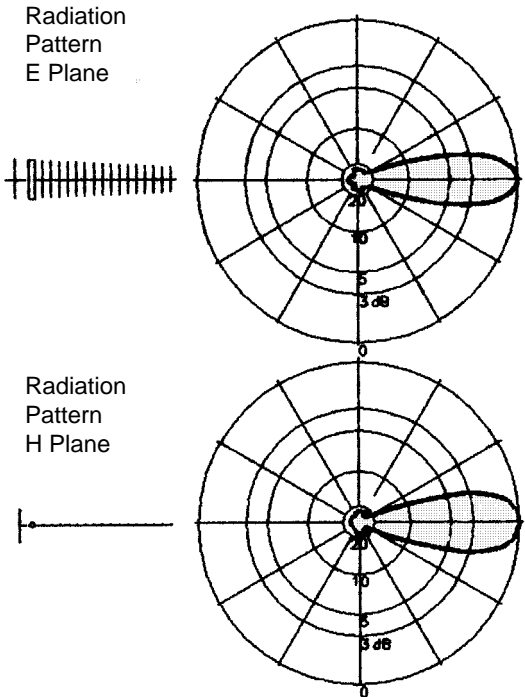
all metal parts are DC grounded

WEIGHT 59 kg
WIND AREA 0.68 m²
WIND LOAD 1550 N (200 km/h)
 870 N (150 km/h)
 650 N (130 km/h)

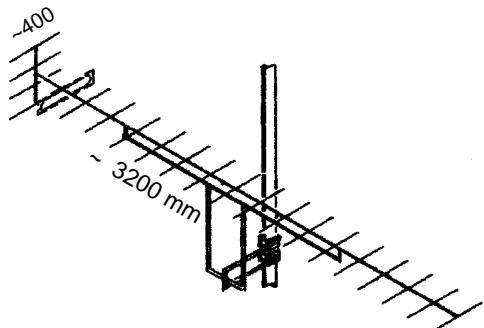


WS 421 02 22 .

TYPE NO.	WS 421 02 22 8: 335 - 385 MHz WS 421 02 22 9: 380 - 470 MHz further frequencies on request
POLARISATION	horizontal
IMPEDANCE	50 Ω
GAIN	14 dB (ref. λ/2 dipole)
VSWR	< 1.3, at the limits of the band < 1.4
POWER	max. 150 watts
3 dB BEAMWIDTH	in polarization, E-plane: 26° vertical to pol., H-plane: 31°
TERMINATION	2 m cable RG 213/U ending with N male other termination on request
GROUNDING	all metal parts are DC grounded
MOUNTING	<i>mast-ø</i> <i>clamp</i> 30 - 80 mm WG 57 (standard) 50 - 104 mm WG 58 (option) clamp for other mast-ø on request
MATERIAL	aluminium, bolts of stainless steel, weather-resistant plastics
WEIGHT	5.4 kg
WIND AREA	0.22 m ²
WIND LOAD	280 N (150 km/h) 210 N (130 km/h)



WS 421 03 22 .



TYPE NO. WS 421 03 22 8: 335 - 385 MHz
 WS 421 03 22 9: 380 - 470 MHz
 further frequencies on request

DESCRIPTION The radome protects the antenna dipole from environmental influences, icing, and increases the lightning protection.

POLARISATION horizontal

IMPEDANCE 50 Ω

GAIN 14 dB (ref. λ/2 dipole)

VSWR < 1.3, at the limits of the band <1.4

POWER max. 150 watts

3 dB BEAMWIDTH in polarization, E-plane: 26°
 vertical to pol., H-plane: 31°

TERMINATION 2 m cable RG 213/U ending with N male
 other termination on request

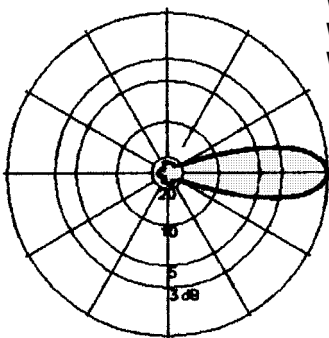
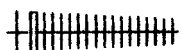
GROUNDING all metal parts are DC grounded

MOUNTING mast-ø clamp
 30 - 80 mm WG 57 (standard)
 50 - 104 mm WG 58 (option)
 clamp for other mast-ø on request

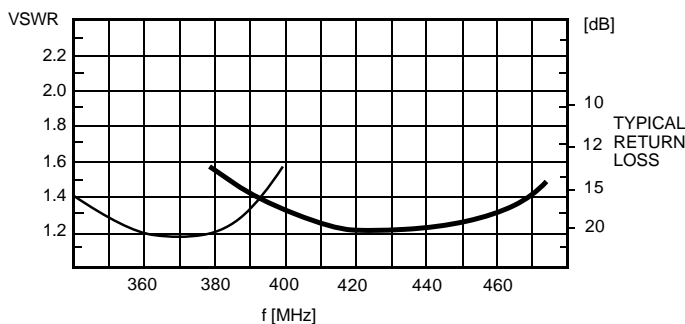
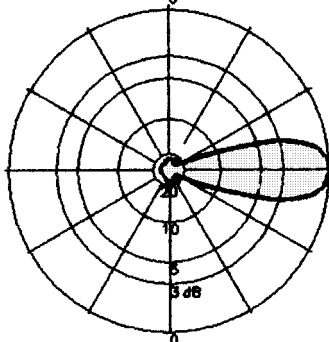
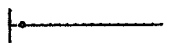
MATERIAL aluminium, bolts of stainless steel, weather-resistant plastics, radome of UV-stabilized polyethylene

WEIGHT 9 kg
WIND AREA 0.28 m²
WIND LOAD 358 N (150 km/h)
 270 N (130 km/h)

Vertical
 Radiation
 Pattern
 E Plane

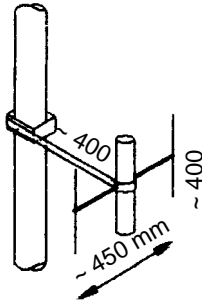


Horizontal
 Radiation
 Pattern
 H Plane



KW 1-08

WIPIC reserves the right to amend specifications in the light of continuing development.

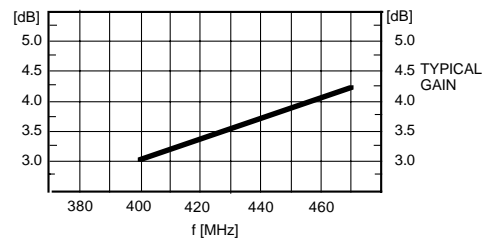
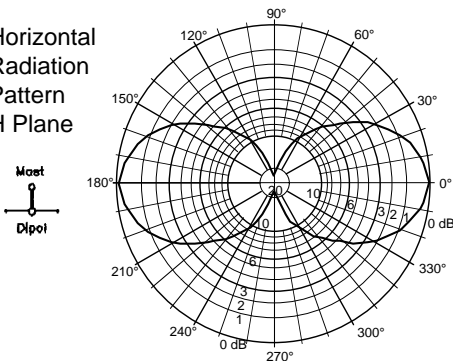


TYPE NO.	WS 441 03 12 9: 400 - 470 MHz further frequencies on request	
DESCRIPTION	heavy duty, with radome The radome protects the antenna dipole from environmental influences, icing, and increases the lightning protection.	
POLARIZATION	vertical	
IMPEDANCE	50 Ω	
GAIN	2x 4 dB (ref. λ/2 dipole)	
VSWR	< 1.3, at the limits of the band < 1.4	
POWER	max. 150 watts	
3 dB BEAMWIDTH	horizontal, H-plane:	2x 71°
	vertical, E-plane:	2x 70°
TERMINATION	2 m cable RG 213/U ending with N male other termination on request	
GROUNDING	all metal parts are DC grounded	
MOUNTING	<i>mast-ø</i>	<i>clamp</i>
	30 - 80 mm	WG 17 (standard)
	50 - 104 mm	WG 18 (option)
	clamp for other mast-ø on request	

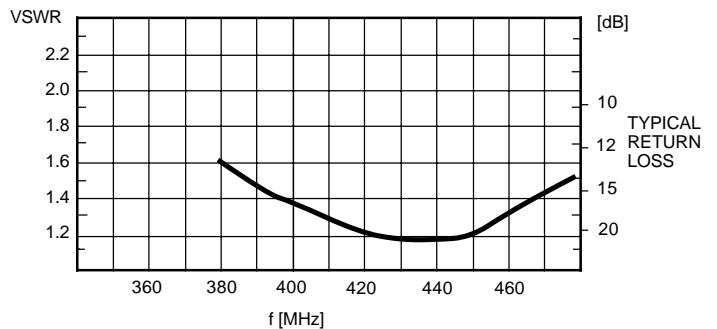
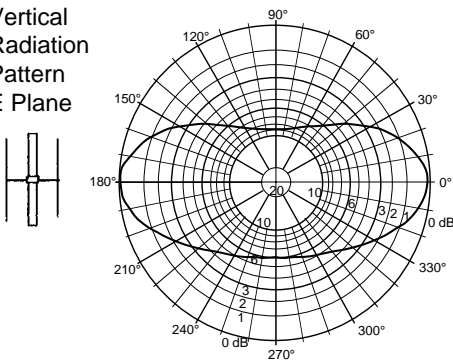
MATERIAL aluminium, bolts of stainless steel, radome of uv-stabilized polyethylene

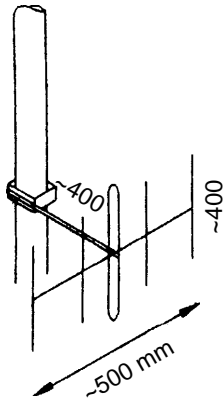
WEIGHT 4.5 kg
WIND AREA 0.08 m²
WIND LOAD 105 N (150 km/h)
 80 N (130 km/h)

Horizontal Radiation Pattern H Plane



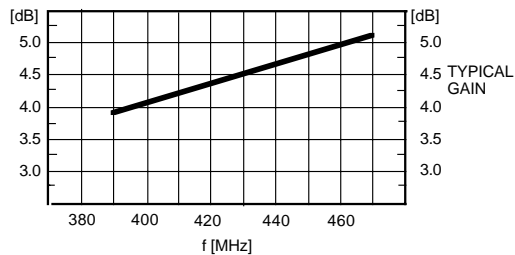
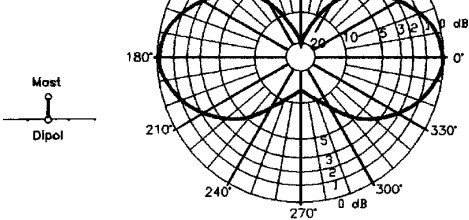
Vertical Radiation Pattern E Plane



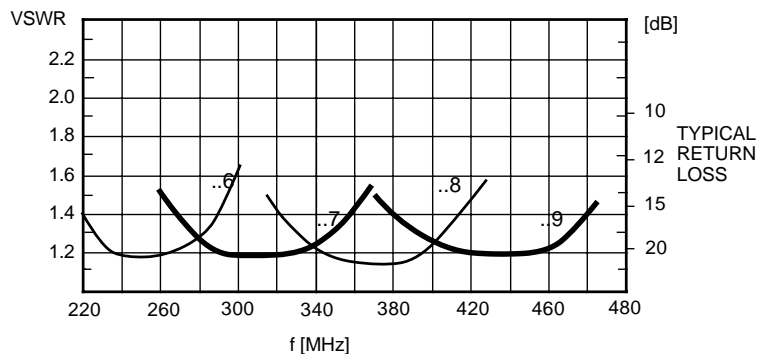
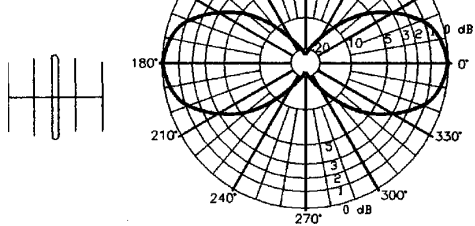


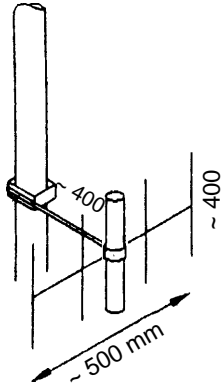
TYPE NO.	WS 442 02 12 9: 380 - 480 MHz further frequencies on request
POLARIZATION	vertical
IMPEDANCE	50 Ω
GAIN	2x 4-5 dB (ref. λ/2 dipole)
VSWR	< 1.3, at the limits of the band < 1.4
POWER	max. 150 watts
3 dB BEAMWIDTH	horizontal, H-plane: 2x 103° vertical, E-plane: 2x 60°
TERMINATION	2 m cable RG 213/U ending with N male other termination on request
GROUNDING	all metal parts are DC grounded
MOUNTING	<i>mast-ø</i> <i>clamp</i> 30 - 80 mm WG 13 (standard) 50 - 104 mm WG 14 (option) clamp for other mast-ø on request
MATERIAL	aluminium, bolts of stainless steel, weather-resistant plastics
WEIGHT	2.6 kg
WIND AREA	0.08 m ²
WIND LOAD	102 N (150 km/h) 77 N (130 km/h)

HORIZONTAL
RADIATION
PATTERN
H PLANE



VERTICAL
RADIATION
PATTERN
E PLANE





TYPE NO. WS 442 03 12 6: 220 - 290 MHz
 WS 442 03 12 7: 270 - 350 MHz
 WS 442 03 12 8: 340 - 400 MHz
 WS 442 03 12 9: 380 - 480 MHz
 further frequencies on request

DESCRIPTION heavy duty, with radome
 The radome protects the antenna dipole from environmental influences, icing, and increases the lightning protection.

POLARIZATION vertical

IMPEDANCE 50 Ω

GAIN 2x 4.5 dB (ref. λ/2 dipole)

VSWR < 1.3, at the limits of the band < 1.4

POWER max. 150 watts

3 dB BEAMWIDTH horizontal, H-plane: 2x 103°
 vertical, E-plane: 2x 60°

TERMINATION 2 m cable RG 213/U ending with N male
 other termination on request

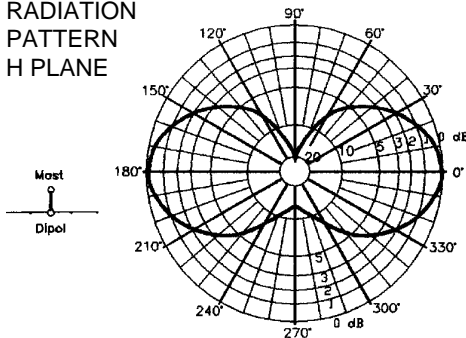
GROUNDING all metal parts are DC grounded

MOUNTING mast-∅ clamp
 30 - 80 mm WG 17 (standard)
 50 - 104 mm WG 18 (option)
 clamp for other mast-∅ on request

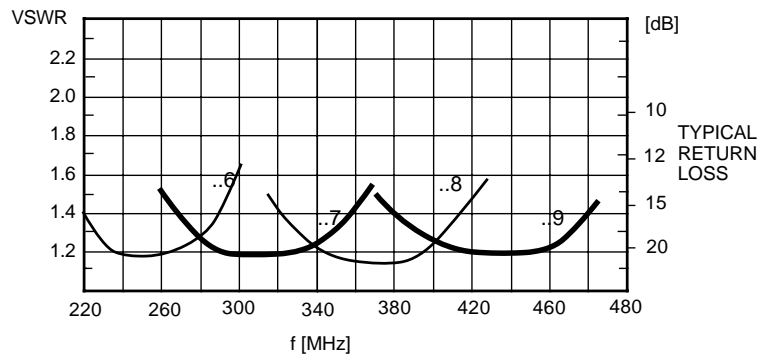
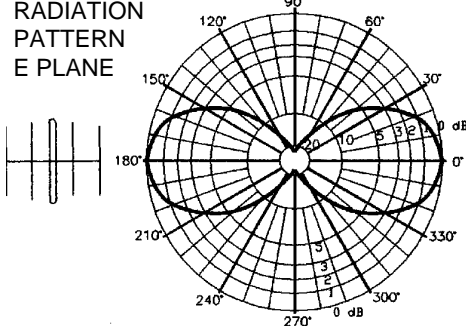
MATERIAL aluminium, bolts of stainless steel, radome of uv-stabilized polyethylene

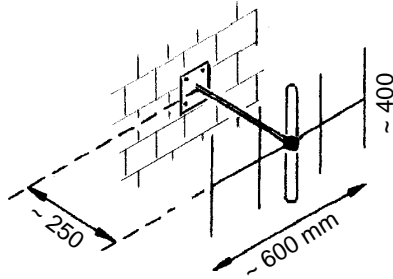
WEIGHT 5 kg
WIND AREA 0.12 m²
WIND LOAD 155 N (150 km/h)
 115 N (130 km/h)

HORIZONTAL RADIATION PATTERN H PLANE



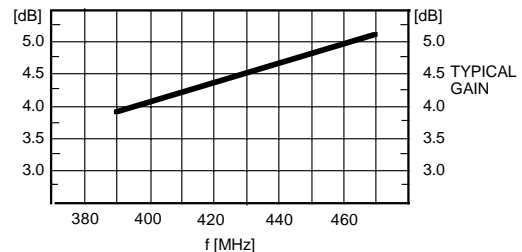
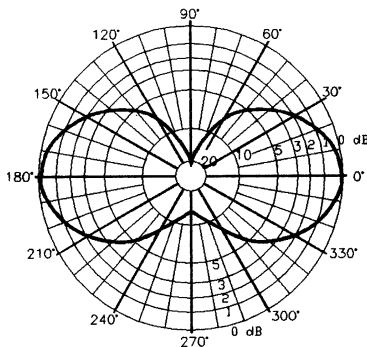
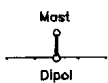
VERTICAL RADIATION PATTERN E PLANE



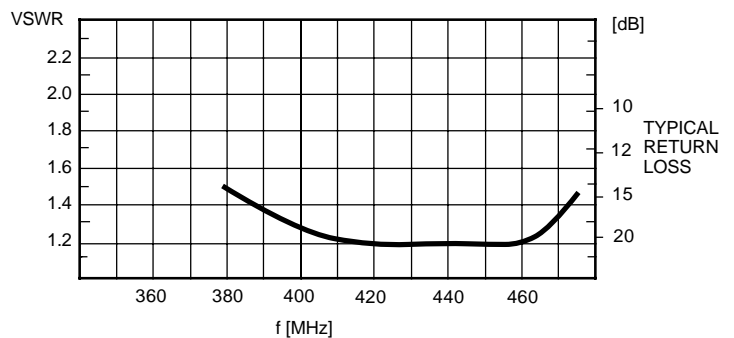
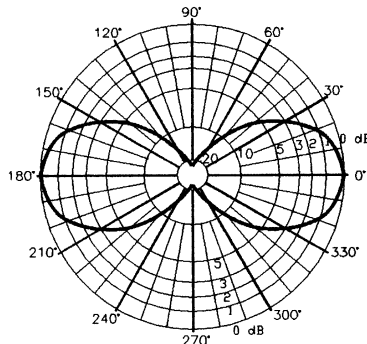
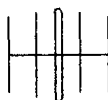


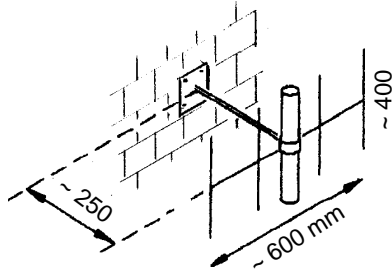
TYPE NO.	WS 442 02 19 9: 380 - 480 MHz further frequencies on request
POLARIZATION	vertical
IMPEDANCE	50 Ω
GAIN	2x 4-5 dB (ref. λ/2 dipole)
VSWR	< 1.3, at the limits of the band <1.4
POWER	max. 150 watts
3 dB BEAMWIDTH	horizontal, H-plane: 2x 103° vertical, E-plane: 2x 60°
TERMINATION	2 m cable RG 213/U ending with N male other termination on request
GROUNDING	all metal parts are DC grounded
MOUNTING	mounting plate 120x120x5 mm on walls with four bolts or dowels
MATERIAL	aluminium, bolts of stainless steel, weather-resistant plastics
WEIGHT	2.6 kg
WIND AREA	0.08 m ²
WIND LOAD	102 N (150 km/h) 77 N (130 km/h)

Horizontal
Radiation
Pattern
H Plane



Vertical
Radiation
Pattern
E Plane





TYPE NO. WS 442 03 19 6: 220 - 290 MHz
 WS 442 03 19 7: 270 - 350 MHz
 WS 442 03 19 8: 340 - 400 MHz
 WS 442 03 19 9: 380 - 480 MHz
 further frequencies on request

DESCRIPTION heavy duty, with radome
 The radome protects the antenna dipole from environmental influences, icing, and increases the lightning protection.

POLARIZATION vertical

IMPEDANCE 50 Ω

GAIN 2x 4.5 dB (ref. λ/2 dipole)

VSWR < 1.3, at the limits of the band < 1.4

POWER max. 150 watts

3 dB BEAMWIDTH horizontal, H-plane: 2x 103°
 vertical, E-plane: 2x 60°

TERMINATION 2 m cable RG 213/U ending with N male
 other termination on request

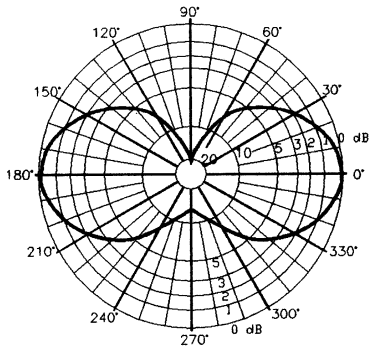
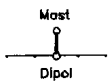
GROUNDING all metal parts are DC grounded

MOUNTING mounting plate 120x120x5 mm
 on walls with four bolts or dowels

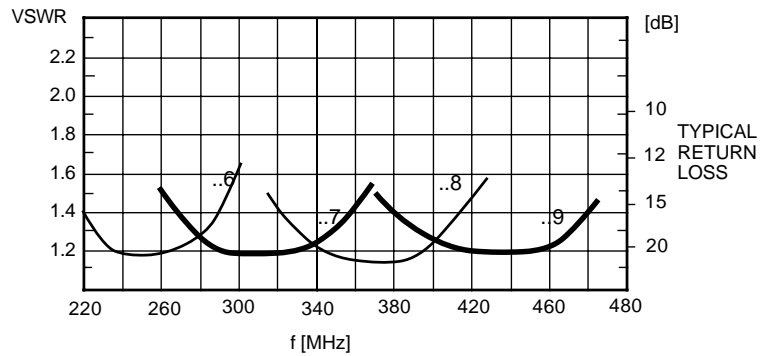
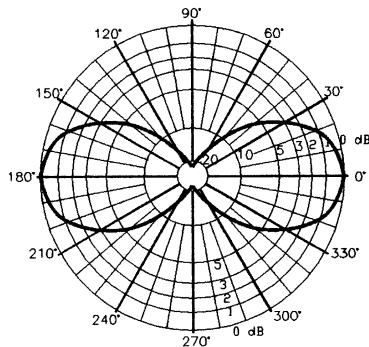
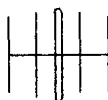
MATERIAL aluminium, bolts of stainless steel, radome of UV-stabilized polyethylene

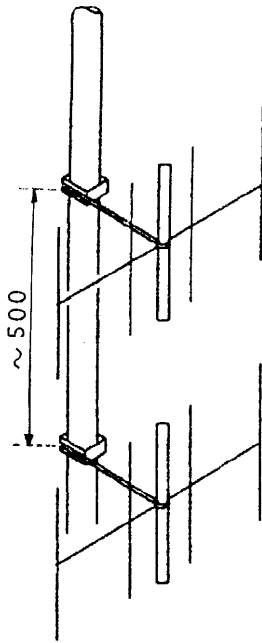
WEIGHT 5 kg
WIND AREA 0.12 m²
WIND LOAD 155 N (150 km/h)
 115 N (130 km/h)

Horizontal Radiation Pattern H Plane

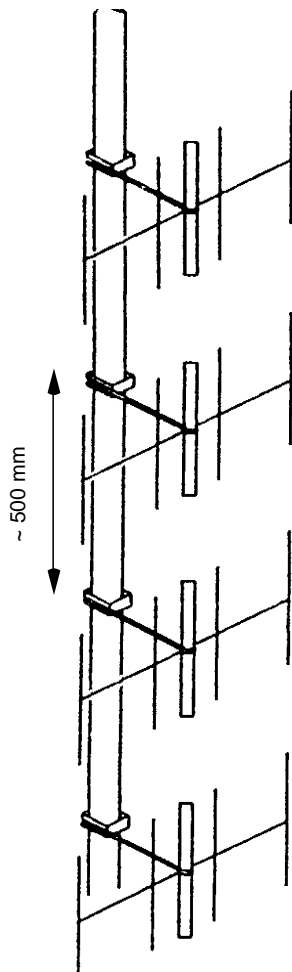


Horizontal Radiation Pattern E Plane





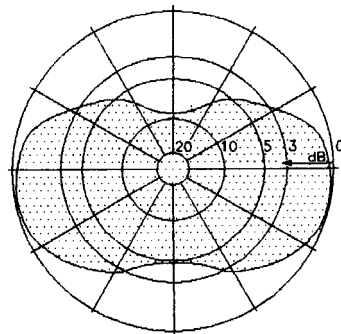
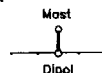
TYPE NO.	without radome: WS 443 02 12 8: 380 ... 470 MHz with radome: WS 443 03 12 8: 380 ... 470 MHz The antennas are tuned to the requested band.
GAIN	5.5 dB (ref. to $\lambda/2$ dipole)
3 dB BEAMWIDTH	horizontal (H plane): 2x 103° vertical (E plane): 2x 30°
POWER	300 watts
TERMINATION	in the junction box WAK 1 ending with N male other termination on request
WEIGHT	343 02.. 343 03 ..
WIND AREA	6 kg 10 kg
WIND LOAD	0.3 m ² 0.38 m ²
	380 N 490 N (150 km/h)
	290 N 360 N (130 km/h)



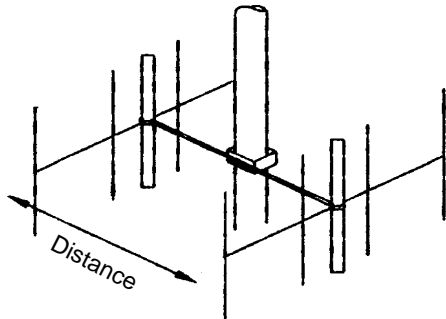
TYPE NO.	WS 444 02 12 9 380 ... 470 MHz: without radome WS 444 03 12 9 380 ... 470 MHz: with radome The antennas are tuned to the requested band.
VSWR	<1.5
GAIN	8 dB (ref. $\lambda/2$ dipole)
3 dB BEAMWIDTH	horizontal (H plane): 2x 103° vertical (E plane): 2x 20°
POWER	500 watts
TERMINATION	in the junction box WAK 1 ending with N male other termination on request
WEIGHT	344 02.. 344 03 ..
WIND AREA	12 kg 22 kg
WIND LOAD	0.42 m ² 0.6 m ²
	536 N 766 N (150 km/h)
	402 N 575 N (130 km/h)

Further technical information see WS 442 0.

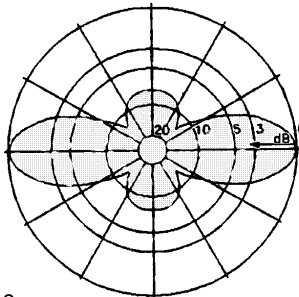
HORIZONTAL RADIATION PATTERN H PLANE



WS 445 0. 12 . DUO



Horizontal
Radiation
Pattern
H Plane



Distance 700 mm

TYPES NO.

without radome

WS 445 02 12 8: 390 - 420 MHz

WS 445 02 12 9: 420 - 470 MHz

heavy duty, with radome

WS 445 03 12 8 stacked: 390 - 420 MHz

WS 445 03 12 9 stacked: 420 - 470 MHz

The radome protects the antenna dipole against environmental influences, icing, and increases the lightning protection.

GAIN

5.5 dB

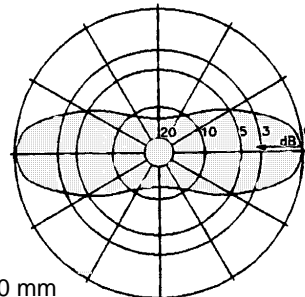
3 dB BEAMWIDTH

horizontal (H-plane): 2x 44°

vertical (E-plane): 2x 60°

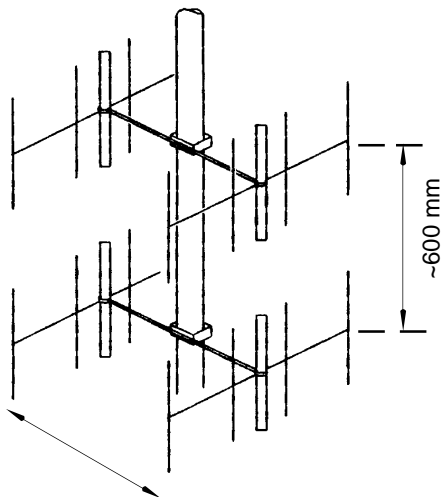
Further technical information see **WS 442 02..** ,
WS 442 03 .. or **WS 443 ..**

Horizontal
Radiation
Pattern
H Plane



Distance 500 mm

WS 446 0. 12 9 QUADRO



TYPES NO.

The antennas are tuned to the requested frequency in the band 390 - 470 MHz.

WS 446 02 12 9 QUADRO: without radome

WS 446 03 12 9 QUADRO: heavy duty, with radome

The radome protects the antenna dipole against environmental influences, icing, and increases the lightning protection.

GAIN

8 dB (ref. to $\lambda/2$ dipole)

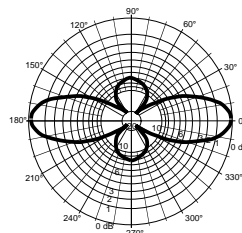
3 dB BEAMWIDTH

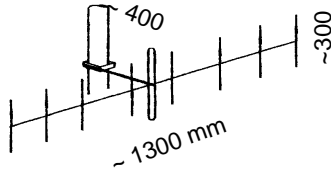
horizontal (H-plane): 2x 44°

vertical (E-plane): 2x 30°

Further technical information see **WS 442 02..** ,
WS 442 03 .. or **WS 444 ..**

Horizontal
Radiation
Pattern
H Plane



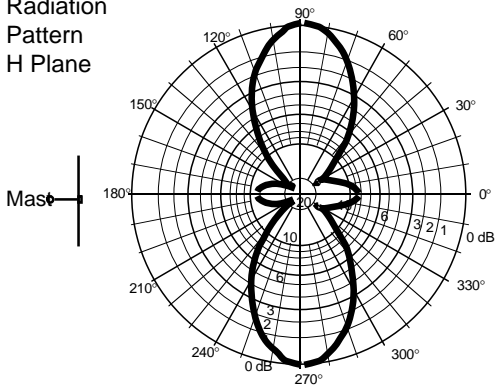


TYPE NO.	WS 448 02 12 9: 380 - 470 MHz further frequencies on request	
POLARIZATION	vertical	
IMPEDANCE	50 Ω	
GAIN	5.2 dB at 390 MHz 6.0 dB at 430 MHz 6.8 dB at 460 MHz (ref. $\lambda/2$ dipole) in the two main lobes	
VSWR	< 1.3, at the limits of the band <1.5	
POWER	max. 150 watts	
3 dB BEAMWIDTH	horizontal, H-plane:	2x 56°
	vertical, E-plane:	2x 46°
TERMINATION	2 m cable RG 213/U ending with N male other termination on request	
GROUNDING	all metal parts are DC grounded	
MOUNTING	<i>mast-\emptyset</i>	<i>clamp</i>
	30 - 80 mm	WG 15 (standard)
	50 - 104 mm	WG 16 (option)
	clamp for other mast- \emptyset on request	

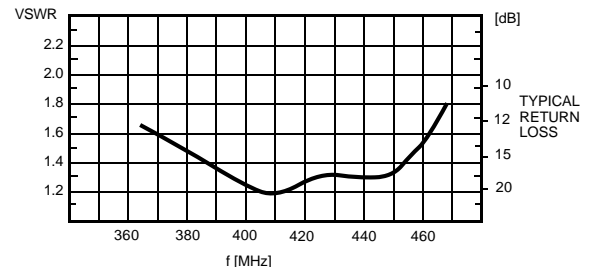
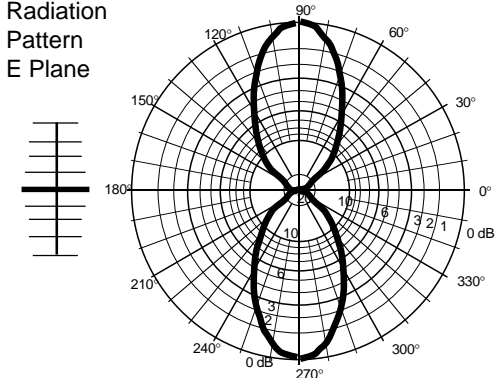
MATERIAL aluminium, bolts of stainless steel, weather-resistant plastics

WEIGHT 4.8 kg
WIND AREA 0.07 m²
WIND LOAD 90 N (150 km/h)
 67 N (130 km/h)

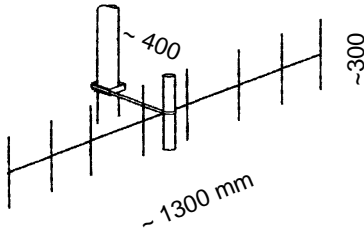
Horizontal
Radiation
Pattern
H Plane



Vertical
Radiation
Pattern
E Plane



WIPIC reserves the right to amend specifications in the light of continuing development.



TYPE NO. WS 448 03 12 9: 380 - 470 MHz
further frequencies on request

DESCRIPTION heavy duty, with radome
The radome protects the antenna dipole from environmental influences, icing, and increases the lightning protection.

POLARIZATION vertical

IMPEDANCE 50 Ω

GAIN 5.2 dB at 390 MHz
6.0 dB at 430 MHz
6.8 dB at 460 MHz (ref. λ/2 dipole)
in the two main lobes

VSWR < 1.3, at the limits of the band <1.5

POWER max. 150 watts

3 dB BEAMWIDTH horizontal, H-plane: 2x 56°
vertical, E-plane: 2x 46°

TERMINATION 2 m cable RG 213/U ending with N male
other termination on request

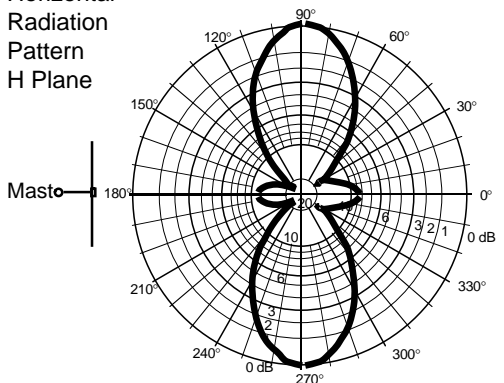
GROUNDING all metal parts are DC grounded

MOUNTING mast-ø clamp
30 - 80 mm WG 17 (standard)
50 - 104 mm WG 18 (option)
clamp for other mast-ø on request

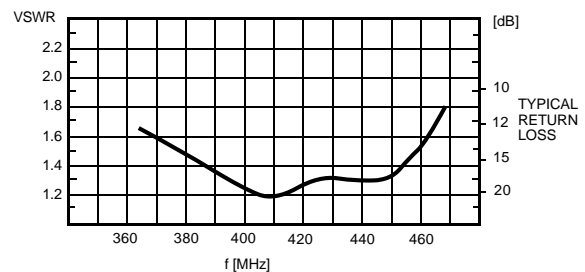
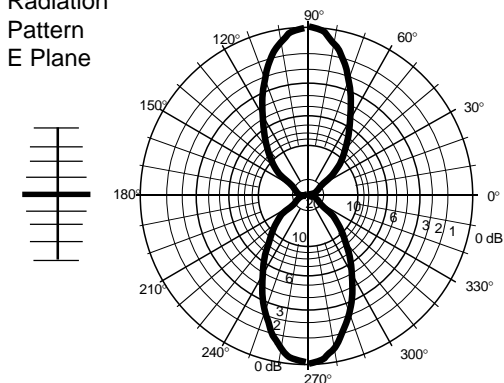
MATERIAL aluminium, bolts of stainless steel, weather-resistant
plastics, radome of UV-stabilized polyethylene

WEIGHT 4.8 kg
WIND AREA 0.07 m²
WIND LOAD 90 N (150 km/h)
67 N (130 km/h)

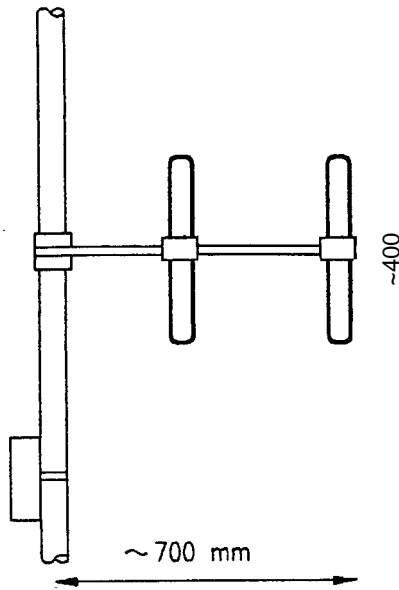
Horizontal
Radiation
Pattern
H Plane



Vertical
Radiation
Pattern
E Plane

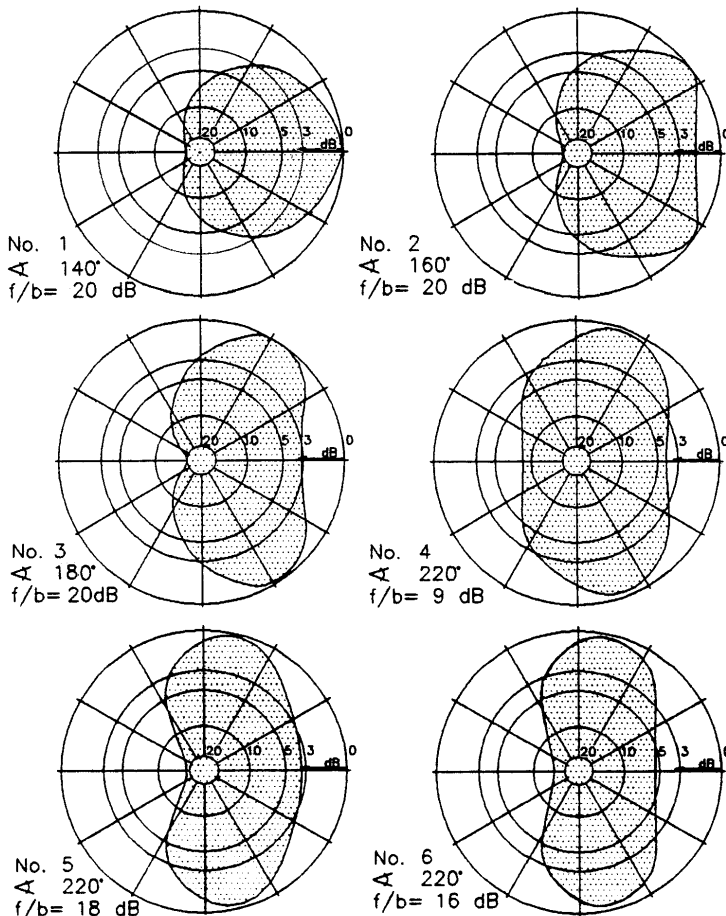


WIPIC reserves the right to amend specifications in the light of continuing development.



TYPE NO.	WS 451 02 11 (on requested frequency)
DESCRIPTION	This antenna can be made for different radiation patterns and F/B ratios. The antenna is tuned in the requested frequency in the band 225 - 470 MHz
POLARIZATION	vertical
IMPEDANCE	50 Ω
GAIN	3 dB (ref. to λ/2 dipole) in main beam directions
VSWR	< 1.2 on tuned frequency
POWER	max. 250 watts, higher ratings on request
3 dB BEAMWIDTH	see radiation patterns

TYPICAL RADIATION PATTERN
H Plane



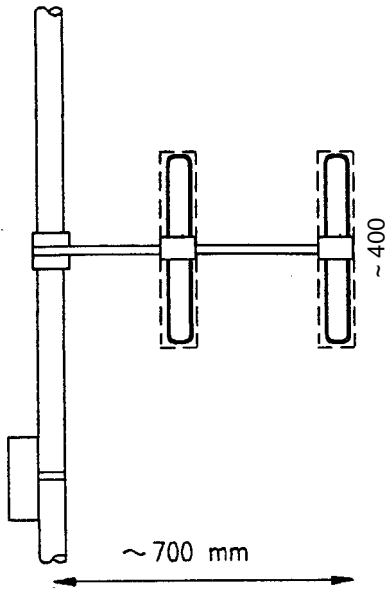
TERMINATION in the junction box WAK 1 ending with N female
other terminations on request

GROUNDING all metal parts are DC grounded

MOUNTING mast ø clamp (chapt. 10)
30 - 80 mm WG 15 (standard)
50 - 104 mm WG 16 (option)
clamp for other mast-ø on request

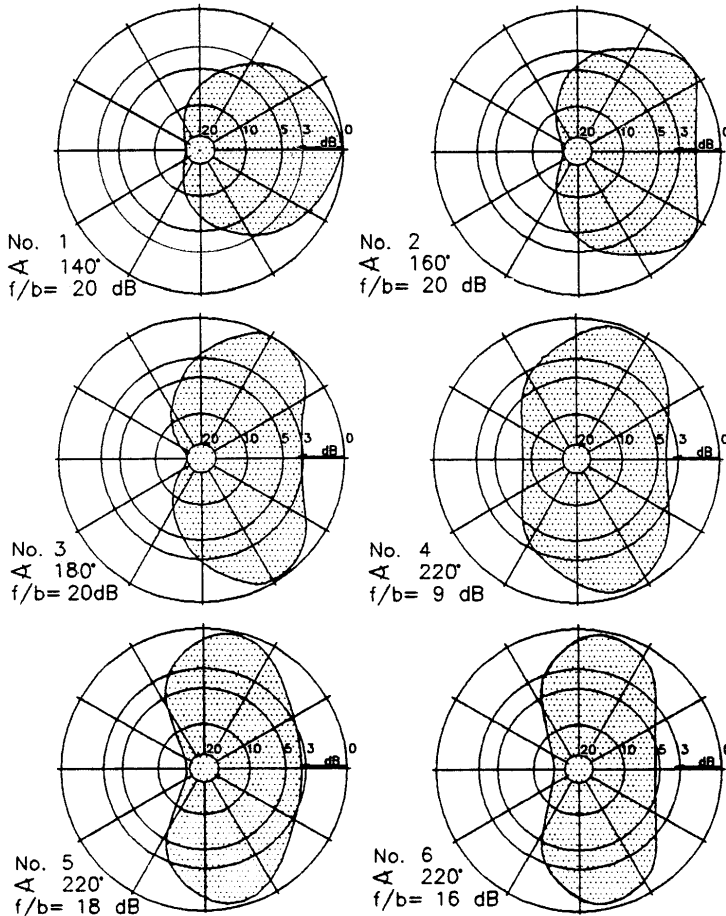
MATERIAL aluminium, bolts of stainless steel,
weather-resistant plastics

WEIGHT 4.2 kg
WIND AREA 0.11 m²
WIND LOAD 140 N (150 km/h)
106 N (130 km/h)

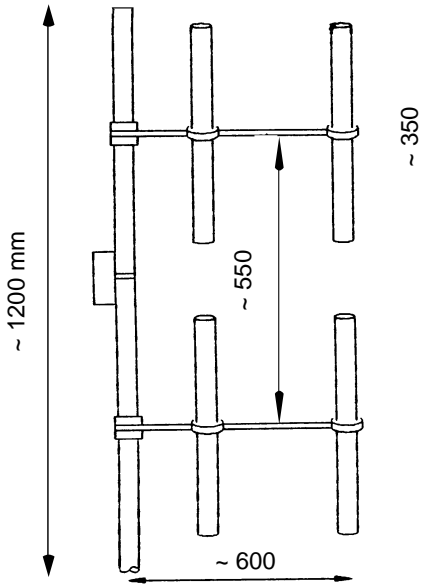


TYPE NO.	WS 451 03 11 (on requested frequency)
DESCRIPTION	This antenna can be made for different radiation patterns and F/B ratios. The antenna is tuned in the requested frequency in the band 225 - 470 MHz heavy duty, with radome The radome protects the antenna dipole against environmental influences, icing, and increases the lightning protection.
POLARIZATION	vertical
IMPEDANCE	50 Ω
GAIN	3 dB (ref. to λ/2 dipole) in main beam directions
VSWR	< 1.2 in tuned frequency
POWER	max. 200 watts, higher ratings on request
3 dB BEAMWIDTH	see radiation patterns

TYPICAL RADIATION PATTERN
H Plane



TERMINATION	in the junction box WAK 1 ending with N male other terminations on request
GROUNDING	all metal parts are DC grounded
MOUNTING	<i>mast</i> ∅ <i>clamp (chapt. 10)</i> 30 - 80 mm WG 15 (standard) 50 - 104 mm WG 16 (option) clamp for other mast-∅ on request
MATERIAL	aluminium, bolts of stainless steel, radome of UV-stabilized polyethylene
WEIGHT	7.5 kg
WIND AREA	0.16 m ²
WIND LOAD	205 N (150 km/h) 155 N (130 km/h)



TYPE NO. WS 452 03 11 (on requested frequency)

DESCRIPTION This antenna can be made for different radiation patterns and F/B ratios. The antenna is tuned on the requested frequency in the band 225 - 470 MHz. Downtilt on request.

heavy duty, with radome
 The radome protects the antenna dipole against environmental influences, icing, and increases the lightning protection.

POLARIZATION vertical

IMPEDANCE 50 Ω

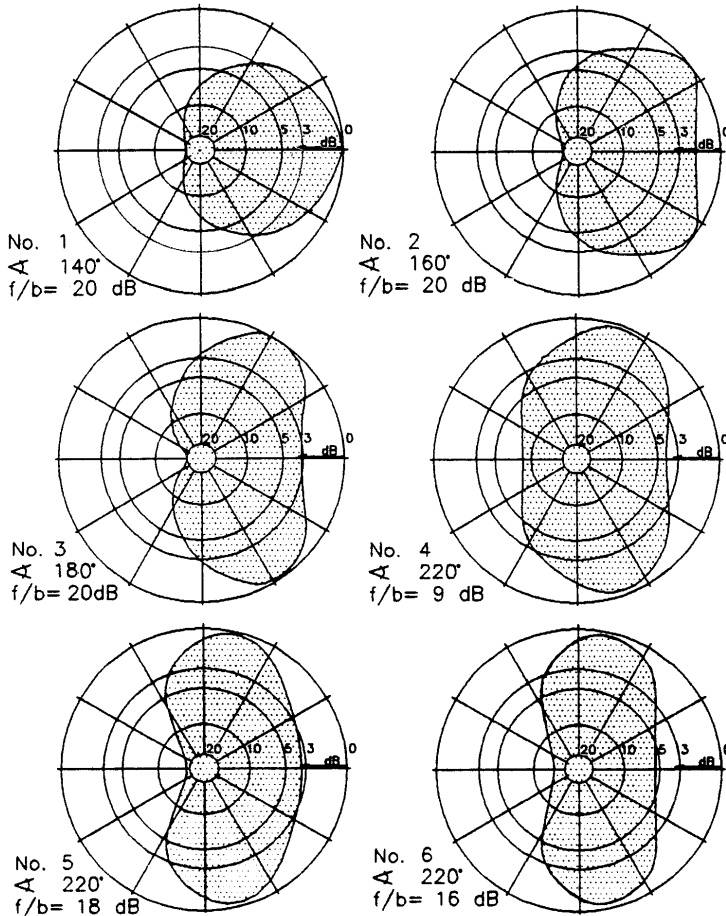
GAIN 6 dB (ref. to λ/2 dipole) in main beam directions

VSWR < 1.2 on tuned frequency

POWER max. 200 watts, higher ratings on request

3 dB BEAMWIDTH horizontal: see radiation patterns
 vertical: 32° (in main beam directions)

TYPICAL RADIATION PATTERN
 H Plane



TERMINATION in the junction box WAK 1 ending with N female
 other terminations on request

GROUNDING all metal parts are DC grounded

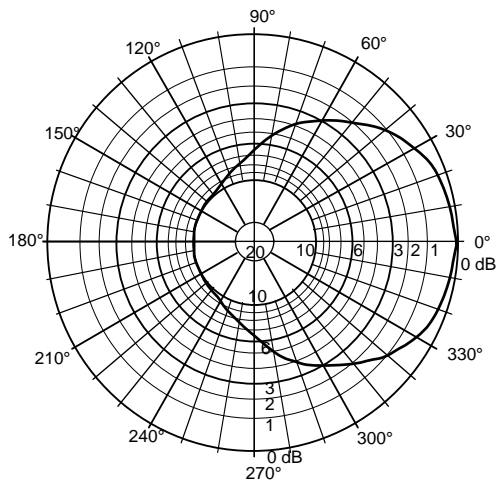
MOUNTING mast ø clamp (chapt. 10)
 30 - 80 mm WG 15 (standard)
 50 - 104 mm WG 16 (option)
 clamp for other mast-ø on request

MATERIAL aluminium, bolts of stainless steel,
 radome of UV-stabilized polyethylene

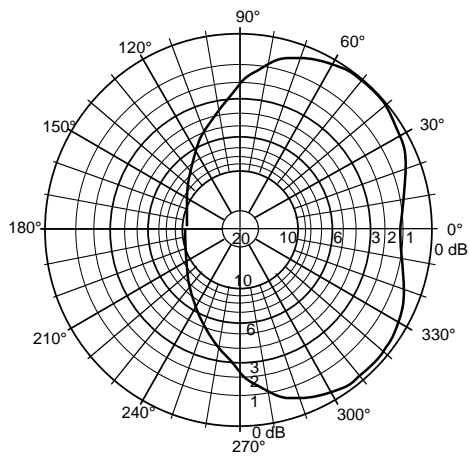
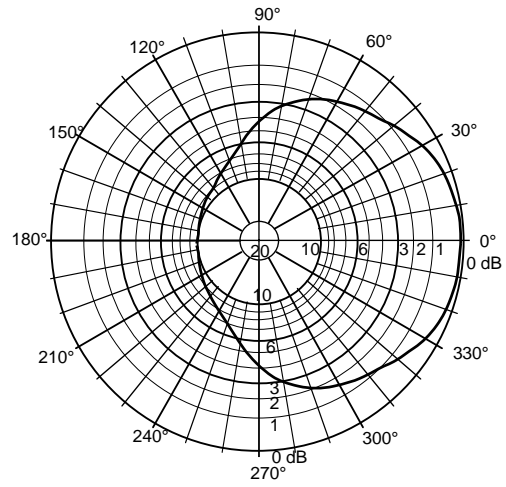
WEIGHT 15 kg
WIND AREA 0.32 m²
WIND LOAD 408 N (150 km/h)
 307 N (130 km/h)

DIMENSIONS the given values are valid
 for 400 - 470 MHz

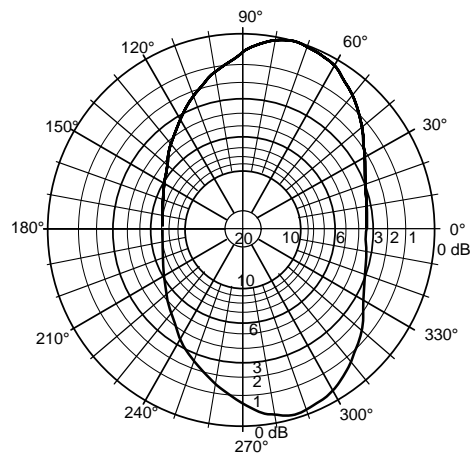
pattern no 7



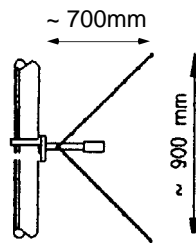
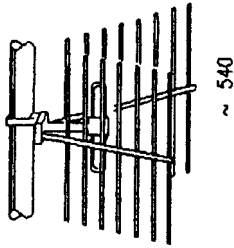
pattern no 8



pattern no 9

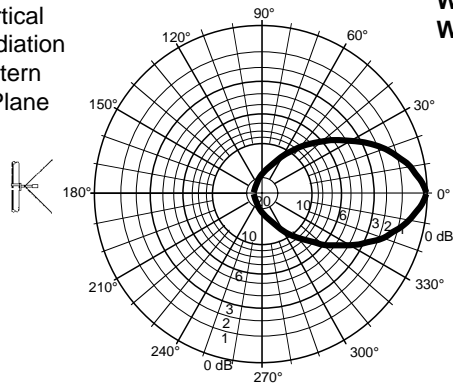


pattern no 10

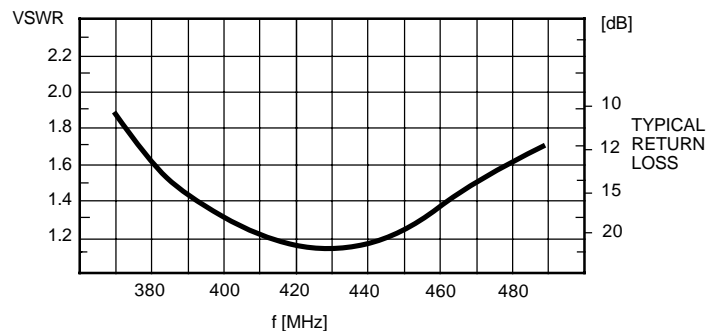
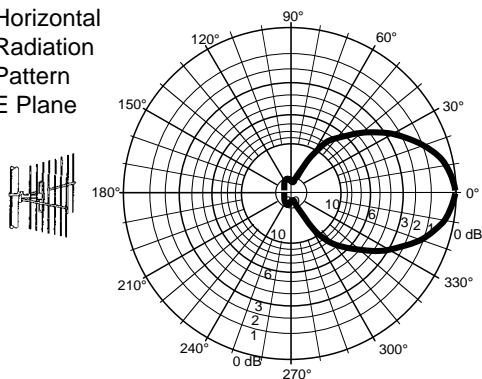


TYPE NO.	vertical polarization WS 471 02 11 9 : 400 - 470 MHz horizontal polarization WS 471 02 21 9 : 400 - 470 MHz
IMPEDANCE	50 Ω
GAIN	9 dB (ref. λ/2 dipole) f/b ratio: 25 dB
VSWR	< 1.25, at the limits of the band < 1.4
POWER	max. 150 watts
3 dB BEAMWIDTH	in polarization, E-plane: 67° vertical to pol., H-plane: 50°
TERMINATION	2 m cable RG 213/U ending with N male other termination on request
GROUNDING	all metal parts are DC grounded
MOUNTING	<i>mast-ø</i> <i>clamp</i> 30 - 80 mm WG 51 (standard) 50 - 104 mm WG 52 (option) clamp for other mast-ø on request
MATERIAL	aluminium, bolts of stainless steel, weather-resistant plastics
WEIGHT	2.5 kg
WIND AREA	0.18 m ²
WIND LOAD	230 N (150 km/h) 170 N (130 km/h)

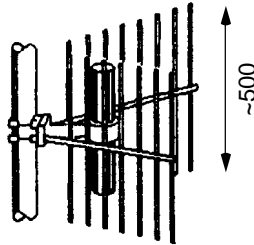
Vertical
Radiation
Pattern
H Plane



Horizontal
Radiation
Pattern
E Plane



TYPE NO. vertical polarization
WS 471 03 11 9 : 400 - 470 MHz
 horizontal polarization
WS 471 03 21 9 : 400 - 470 MHz



DESCRIPTION heavy duty, with radome
 The radome protects the antenna dipole from environmental influences, icing, and increases the lightning protection.

IMPEDANCE 50 Ω

GAIN 9 dB (ref. λ/2 dipole)
 F/B : 25 dB

VSWR < 1.25, at the limits of the band <1.4

POWER max. 150 watts

3 dB BEAMWIDTH in polarization, E-plane: 67°
 vertical to pol., H-plane: 50°

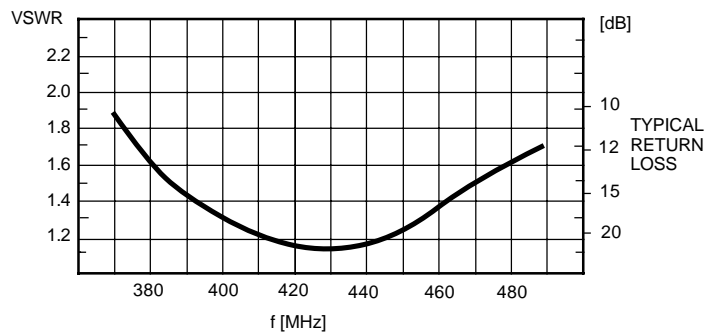
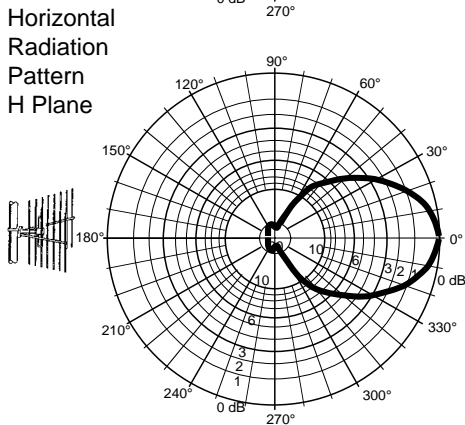
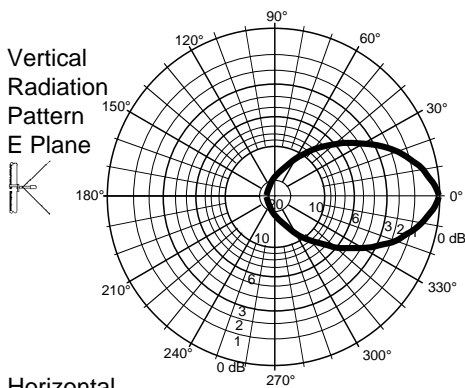
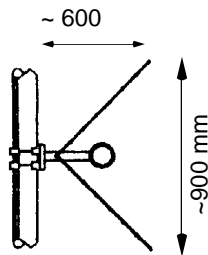
TERMINATION 2 m cable RG 213/U ending with N male
 other termination on request

GROUNDING all metal parts are DC grounded

MOUNTING *mast-ø* 30 - 80 mm *clamp* WG 51 (standard)
 50 - 104 mm WG 52 (option)
 clamp for other mast-ø on request

MATERIAL aluminium, bolts of stainless steel, weather-resistant plastics, radome of UV-stabilized polyethylene

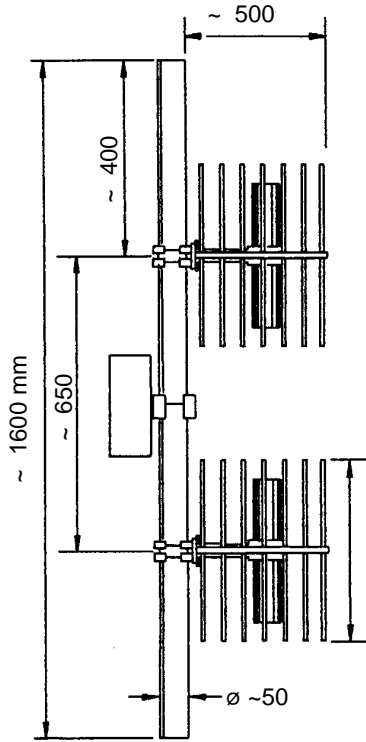
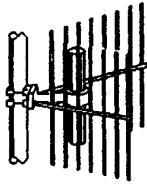
WEIGHT 5 kg
WIND AREA 0.22 m²
WIND LOAD 280 N (150 km/h)
 210 N (130 km/h)



TWO STACKED CORNERREFLECTORS

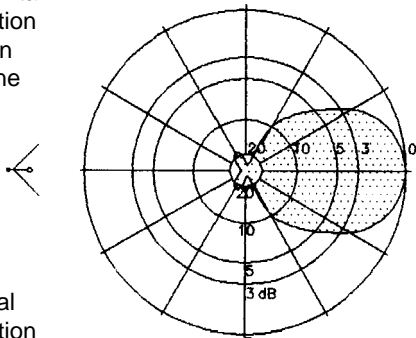
WS 472 03 11 .

390 ... 470 MHz

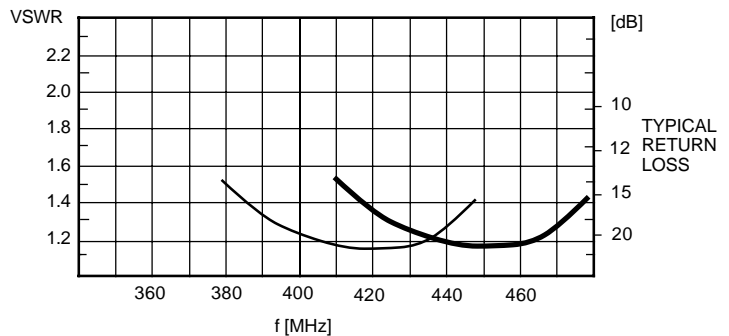
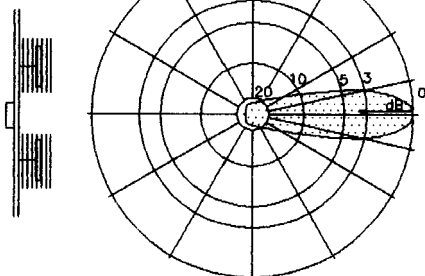


TYPE NO.	WS 472 03 11 8: 390 - 435 MHz WS 472 03 11 9: 425 - 470 MHz further frequencies or tilt on request
DESCRIPTION	heavy duty, with radome The radome protects the antenna dipole against environmental influences, icing, and increases the lightning protection.
POLARIZATION	vertical
IMPEDANCE	50 Ω
GAIN	12.5 dB (ref. to $\lambda/2$ dipole)
VSWR	< 1.3
POWER	max. 200 watts, higher power on request
3 dB BEAMWIDTH	horizontal (H-plane) 64° vertical (E-plane) 24°
TERMINATION	in the junction box WAK 1 ending with N female
GROUNDING	all metal parts are DC grounded
MASTPART	(option) aluminium alloy mast, length ~2 m, \varnothing ~50 mm
MATERIAL	aluminium, bolts of stainless steel, radome of UV-stabilized polyethylene
WEIGHT	13 kg
WIND AREA	0.5 m ²
WIND LOAD	640 N 150 km/h 480 N 130 km/h

Horizontal
Radiation
Pattern
H Plane



Vertical
Radiation
Pattern
E Plane

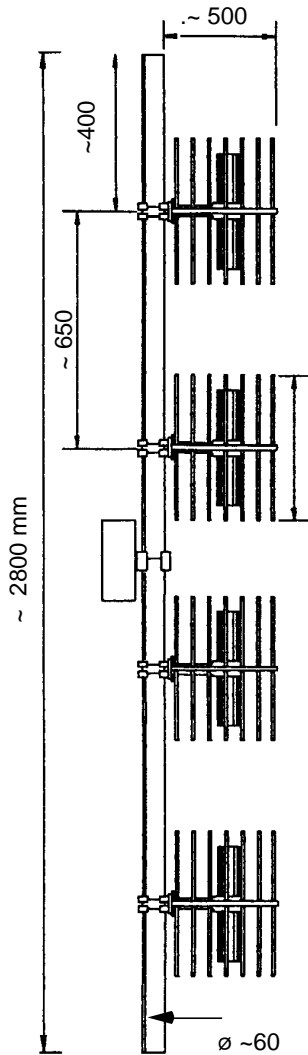


KW 1-08

WIPIC reserves the right to amend specifications in the light of continuing development.

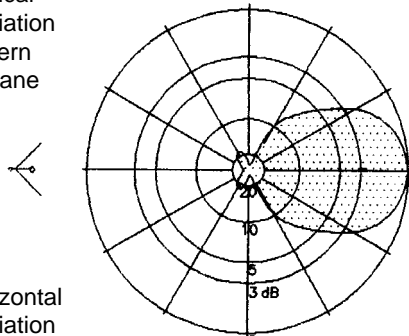
FOUR STACKED CORNERREFLECTORS

WS 473 03 11 .
390 ... 470 MHz

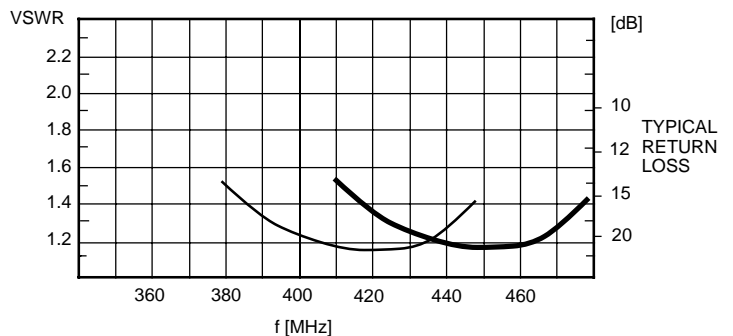
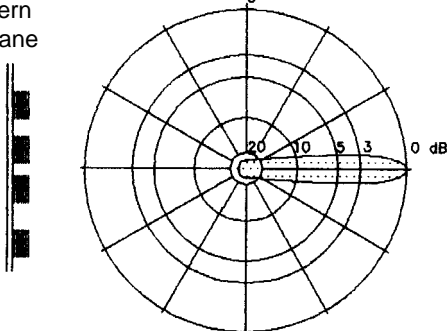


TYPE NO.	WS 473 03 11 8: 400 - 435 MHz WS 473 03 11 9: 435 - 470 MHz further frequencies or tilt on request
DESCRIPTION	heavy duty, with radome The radome protects the antenna dipole against environmental influences, icing, and increases the lightning protection.
POLARIZATION	vertical
IMPEDANCE	50 Ω
GAIN	15 dB (ref. to λ/2 dipole)
VSWR	< 1.3
POWER	max. 200 watts, higher power on request
3 dB BEAMWIDTH	horizontal (H-plane) 64° vertical (E-plane) 12°
TERMINATION	in the junction box WAK 1 ending with N female
GROUNDING	all metal parts are DC grounded
MASTPART	(option) aluminium alloy mast, length ~3 m, ø 60/55 mm
MATERIAL	aluminium, bolts of stainless steel, radome of uv-stabilized polyethylene
WEIGHT	23 kg
WIND AREA	1.1 m ²
WIND LOAD	1400 N 150 km/h 1050 N 130 km/h

Vertical Radiation Pattern H Plane

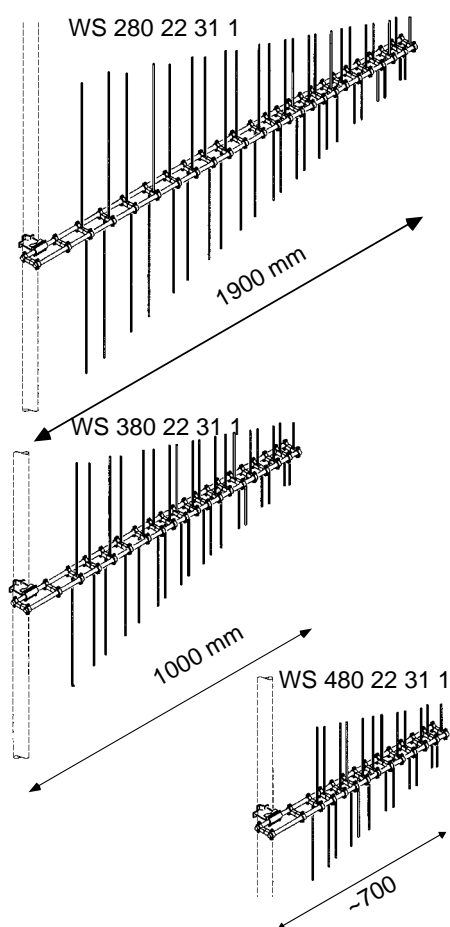


Horizontal Radiation Pattern E Plane



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WIPIC reserves the right to amend specifications in the light of continuing development.



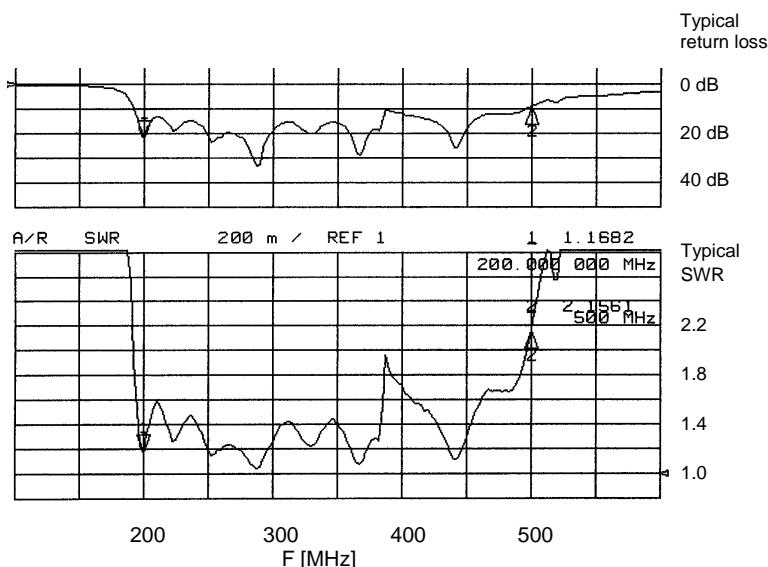
TYPE NO.	WS 280 22 31 1:	87.5 - 1000 MHz
	WS 380 22 31 1:	146 - 1000 MHz
	WS 480 22 31 1:	380 - 1000 MHz
	other bands on request	
POLARIZATION	vertikal or horizontal on request	
IMPEDANCE	50 or 75 Ω	
GAIN	5-6dB ref. $\lambda/2$ dipole 7-8 dBi F/B 20 - 25 dB	
VSWR	≤ 2.5 preferred < 1.5	
POWER	300 - 1000 watts	
3 dB BEAMWIDTH	E-plane:	60 - 70°
	H-plane:	110 - 130°
TERMINATION	2 m cable RG 213/U or RG 11 ending with N male other termination on request	
GROUNDING	all metal parts are DC grounded	
MOUNTING	mast- \emptyset	clamp
	30 - 80 mm	WG 11 (standard)
	50 - 104 mm	WG 12 (option)
	clamp for other mast- \emptyset on request	
MATERIAL	aluminium, bolts of stainless steel, weather-resistant plastics	
WEIGHT	280 ..	380 ..
WIND AREA	3.9 kg	2.3 kg
WIND LOAD	0.21 m ²	1.6 kg
	270 N	0.093 m ²
	200 N	120 N
		90 N
		76 N at 150 km/h
		57 N at 130 km/h

WS 280 22 31 1



10-Element Log-Periodic Antenna WS 380 22 31 2 SP 200 - 500 MHz

TYPE NO.	WS 380 22 31 2 SP: 200 - 500 MHz				
POLARIZATION	horizontal / vertical				
IMPEDANCE	50 Ω				
GAIN / BEAMWIDTH	<i>MHz</i>	<i>gain</i>		<i>beamwidth</i>	
		<i>dBd</i>	<i>dBi</i>	<i>E plane</i>	<i>H plane</i>
	200	4.5	6.7	69°	131°
	350	5.0	7.2	64°	115°
	500	3.4	5.6	66°	133°
VSWR	≤ 2				
POWER	200 MHz	500 W			
	500 MHz	300 W			
TERMINATION	N female other termination on request				
GROUNDING	all metal parts are DC grounded				
MOUNTING	<i>mast \emptyset</i>	<i>clamp (see chapt. 10)</i>			
	30 - 80 mm	WG 11 (standard)			
	50 - 104 mm	WG 12 (option)			
MATERIALS	aluminium, stainless steel weather resistant plastics				
WEIGHT	1.8 kg				
WIND AREA	0.09 m ²				
WIND LOAD	86 N at 130 km/h 114 N at 150 km/h				
DIMENSIONS (LxW)	810 x 760 mm				



WIPIC reserves the right to amend specifications in the light of continuing development.

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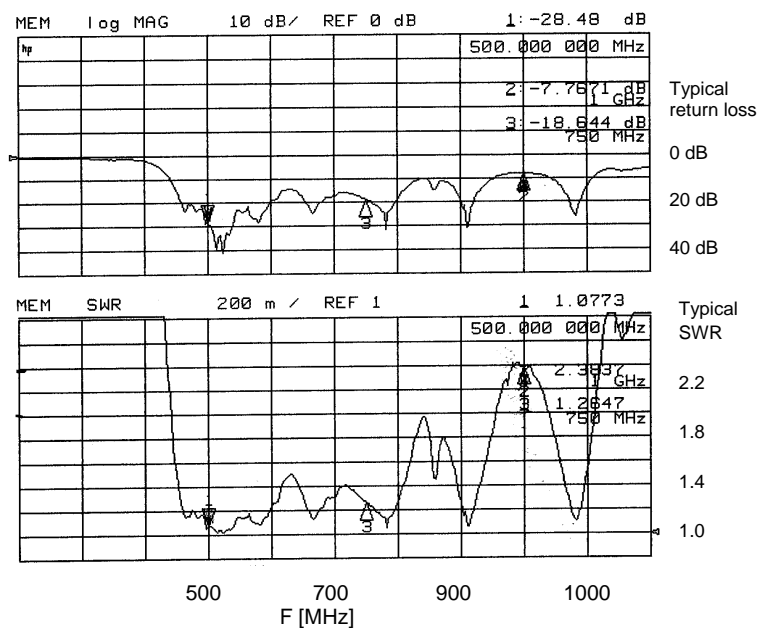
9-Element Log-Periodic Antenna WS 480 22 31 1 SP 500 - 1000 MHz

TYPE NO.	WS 480 22 31 1 SP: 500 - 1000 MHz				
POLARIZATION	horizontal / vertical				
IMPEDANCE	50 Ω				
GAIN / BEAMWIDTH	<i>MHz</i>	<i>gain dBd</i>	<i>dBi</i>	<i>beamwidth E plane</i>	<i>H plane</i>
	500	5.1	7.3	64°	106°
	700	5.5	7.7	60°	96°
	1000	5.0	7.2	59°	102°
VSWR	$\leq 2,4$				
POWER	300 - 400W				
TERMINATION	N female other termination on request				
GROUNDING	all metal parts are DC grounded				
MOUNTING	<i>mast \varnothing</i>	<i>clamp (see chapt. 10)</i>			
	20 - 80 mm	WG 11 (standard)			
	50 - 104 mm	WG 12 (option)			
MATERIALS	aluminium, stainless steel weather resistant plastics				
WEIGHT	1.2 kg				
WIND AREA	0.035 m ²				
WIND LOAD	44 N at 130 km/h 33 N at 150 km/h				
DIMENSIONS (LxW)	470 x 340 mm				



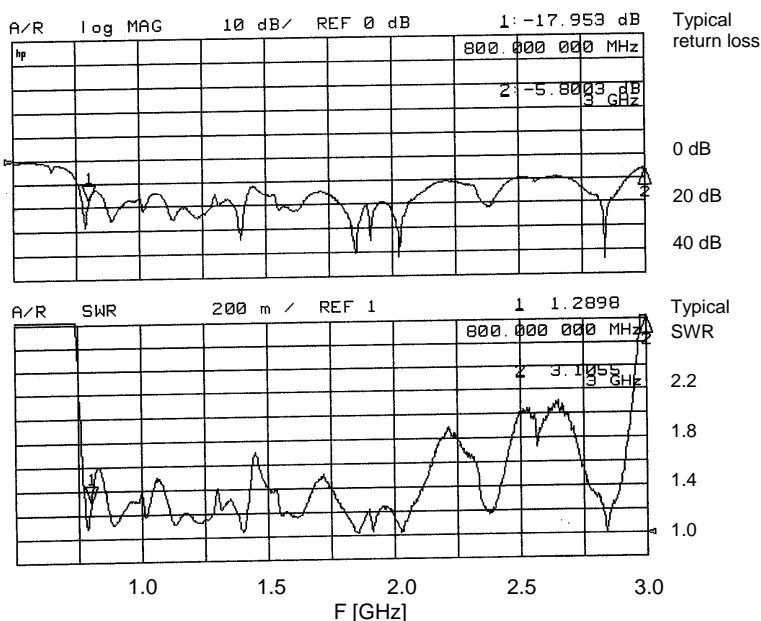
WIPIC reserves the right to amend specifications in the light of continuing development.

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14-Element Log-Periodic Antenna WS 780 22 31 3 0.8 - 3 GHz

TYPE NO	WS 780 22 31 3 : 0.8 - 3 GHz	
POLARIZATION	horizontal / vertical	
IMPEDANCE	50 Ω	
GAIN	6.4 dBi, 4.2 dBd at 1 and 2 GHz	
VSWR	< 2.2 (0.8 - 2.8 GHz)	
POWER	100 W	
3 dB BEAMWIDTH mid-band	in polarization, E plane: 63° vertical to pol., H plane: 103°	
TERMINATION	N female other termination on request	
GROUNDING	all metal parts are DC grounded	
MOUNTING	<i>mast</i> \emptyset 20 - 80 mm 50 - 104 mm	<i>clamp</i> (see chapt. 10) WG 11 (standard) WG 12 (option)
MATERIALS	aluminium, stainless steel weather resistant plastics	
WEIGHT	710 g	
WIND AREA	0.01 m ²	
WIND LOAD	9 N at 130 km/h 12 N at 150 km/h	
DIMENSIONS (LxW)	400 x 196 mm	



WIPIC reserves the right to amend specifications in the light of continuing development.

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