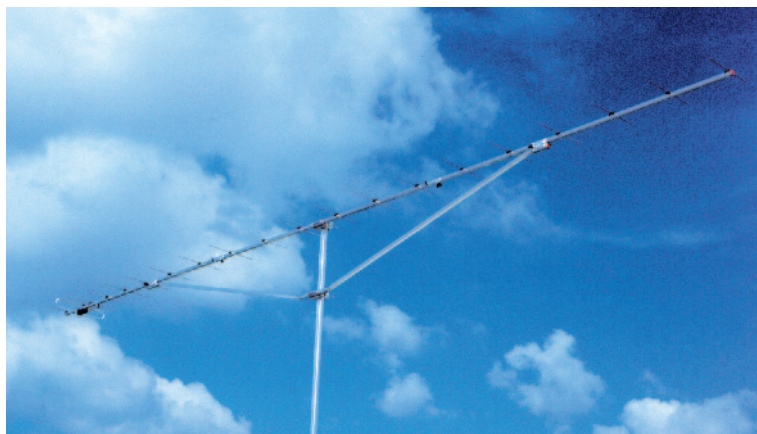


# 21 elements Yagi antenna

## 434 to 440 MHz

## Part Nr. 20922



### Electrical data

#### Radiation at 438.5 MHz

|                                   |                   |
|-----------------------------------|-------------------|
| Effective electrical length ..... | : 6.67 $\lambda$  |
| Isotropic gain .....              | : 18.2 dBi        |
| Aperture angle @ -3 dB            |                   |
| - E-plane .....                   | : 2 x 11.5°       |
| - H-plane .....                   | : 2 x 11.9°       |
| First side lobe set               |                   |
| - E-plane .....                   | : - 13.8 dB @ 29° |
| - H-plane .....                   | : - 12.0 dB @ 30° |
| Rear protection .....             | : - 29.7 dB       |
| Average stray radiation           |                   |
| - E-plane .....                   | : - 35 dB         |
| - H-plane .....                   | : - 24 dB         |

### Bandwidth

|   |                      |
|---|----------------------|
| Gain @ -1 dB .....                          | : 417 to 442 MHz     |
| Nominal impedance .....                     | : 50 $\Omega$        |
| Impedance match bandwidth @ SWR <1.3/1..... | : 435.0 to 441.0 MHz |
| Acceptable RF power (continous duty) .....  | : 1000 W             |

### Array of 2 or 4 antennas

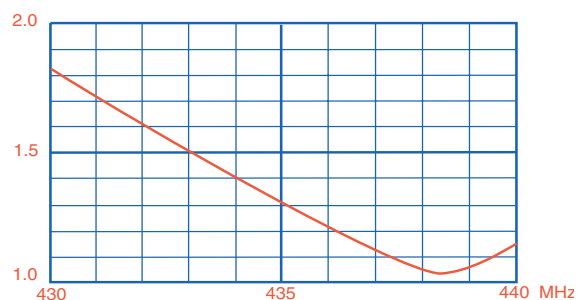
(optimized stacking distance. from center to center of elements. for minimal side lobe radiation)

|                                       |                  |
|---------------------------------------|------------------|
| - E plane - Electrical distance ..... | : 2.36 $\lambda$ |
| - Pratical distance .....             | : 1.62 m         |
| - H plane - Electrical distance ..... | : 2.36 $\lambda$ |
| - Pratical distance .....             | : 1.62 m         |

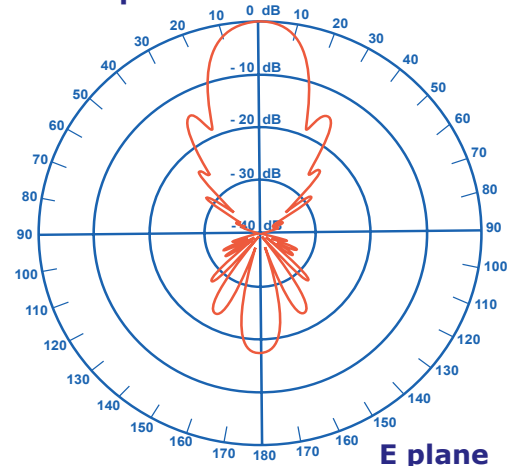
### Mechanical data

|  |                       |
|--|-----------------------|
| Connector .....                          | : N                   |
| Overall length .....                     | : 4.60 m              |
| Mass .....                               | : 3.1 kg              |
| Effective wind load                      |                       |
| - Horizontal polarization .....          | : 0.16 m <sup>2</sup> |
| - Vertical polarization .....            | : 0.13 m <sup>2</sup> |
| Approximate wind load (25 m/s - 55 mph)  |                       |
| - Horizontal polarization .....          | : 6.5 daN             |
| - Vertical polarization .....            | : 5.3 daN             |
| Approximate wind load (45 m/s - 100 mph) |                       |
| - Horizontal polarization .....          | : 21.1 daN            |
| - Vertical polarization .....            | : 17.1 daN            |

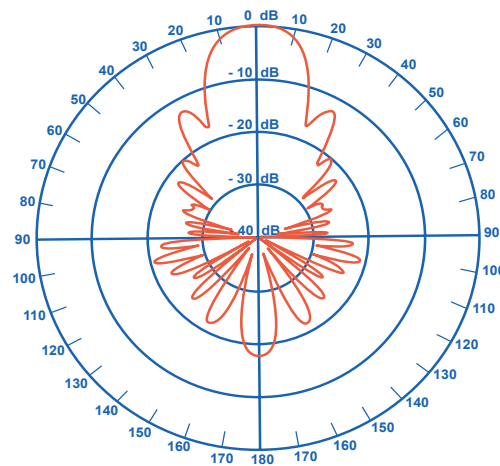
### SWR curve



### Radiation patterns



**E plane**



**H plane**

