

# 17 elements Yagi antenna

## 144 to 146 MHz

## Part Nr. 220817



### Electrical data

#### Radiation at 144.5 MHz

|                                   |                   |
|-----------------------------------|-------------------|
| Effective electrical length ..... | : 3.14 $\lambda$  |
| Isotropic gain .....              | : 15.3 dBi        |
| Aperture angle @ -3 dB            |                   |
| - E-plane .....                   | : 2 x 16.5°       |
| - H-plane .....                   | : 2 x 17.9°       |
| First side lobe set               |                   |
| - E-plane .....                   | : - 17.7 dB @ 43° |
| - H-plane .....                   | : - 13.1 dB @ 44° |
| Rear protection .....             | : - 36.9 dB       |
| Average stray radiation           |                   |
| - E-plane .....                   | : - 37 dB         |
| - H-plane .....                   | : - 27 dB         |

### Bandwidth

|   |                      |
|---|----------------------|
| Gain @ -1 dB .....                          | : 138 to 148 MHz     |
| Nominal impedance .....                     | : 50 $\Omega$        |
| Impedance match bandwidth @ SWR <1.3/1..... | : 143.4 to 146.2 MHz |
| Acceptable RF power (continuous duty) ..... | : 1000 W             |

### Array of 2 or 4 antennas

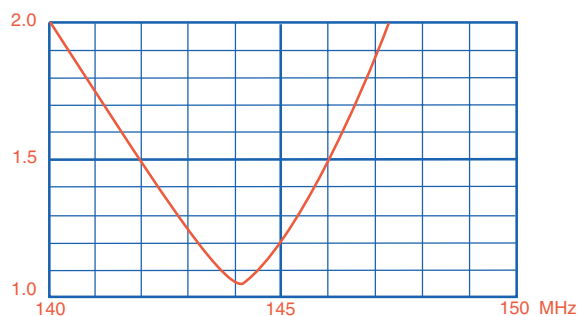
(optimized stacking distance. from center to center of elements. for minimal side lobe radiation)

|                                       |                  |
|---------------------------------------|------------------|
| - E plane - Electrical distance ..... | : 1.85 $\lambda$ |
| - Pratical distance .....             | : 3.85 m         |
| - H plane - Electrical distance ..... | : 1.80 $\lambda$ |
| - Pratical distance .....             | : 3.74 m         |

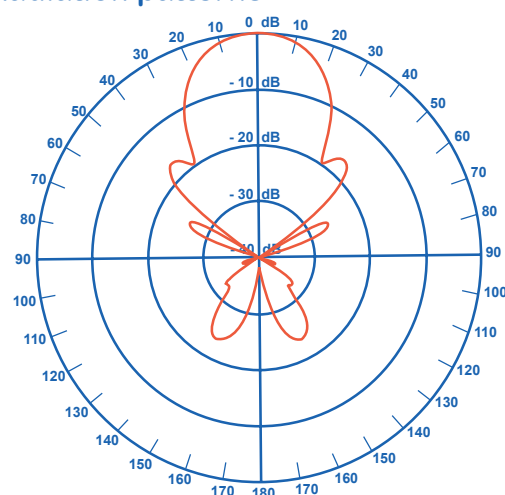
### Mechanical data

|  |                       |
|--|-----------------------|
| Connector .....                          | : N                   |
| Overall length .....                     | : 6.57 m              |
| Mass .....                               | : 6.5 kg              |
| Effective wind load                      |                       |
| - Horizontal polarization .....          | : 0.29 m <sup>2</sup> |
| - Vertical polarization .....            | : 0.25 m <sup>2</sup> |
| Approximate wind load (25 m/s - 55 mph)  |                       |
| - Horizontal polarization .....          | : 10.9 daN            |
| - Vertical polarization .....            | : 9.7 daN             |
| Approximate wind load (45 m/s - 100 mph) |                       |
| - Horizontal polarization .....          | : 35.3 daN            |
| - Vertical polarization .....            | : 31.4 daN            |

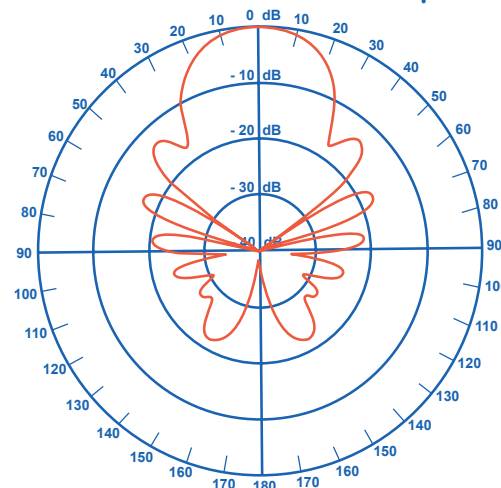
### SWR curve



### Radiation patterns



E plane



H plane

