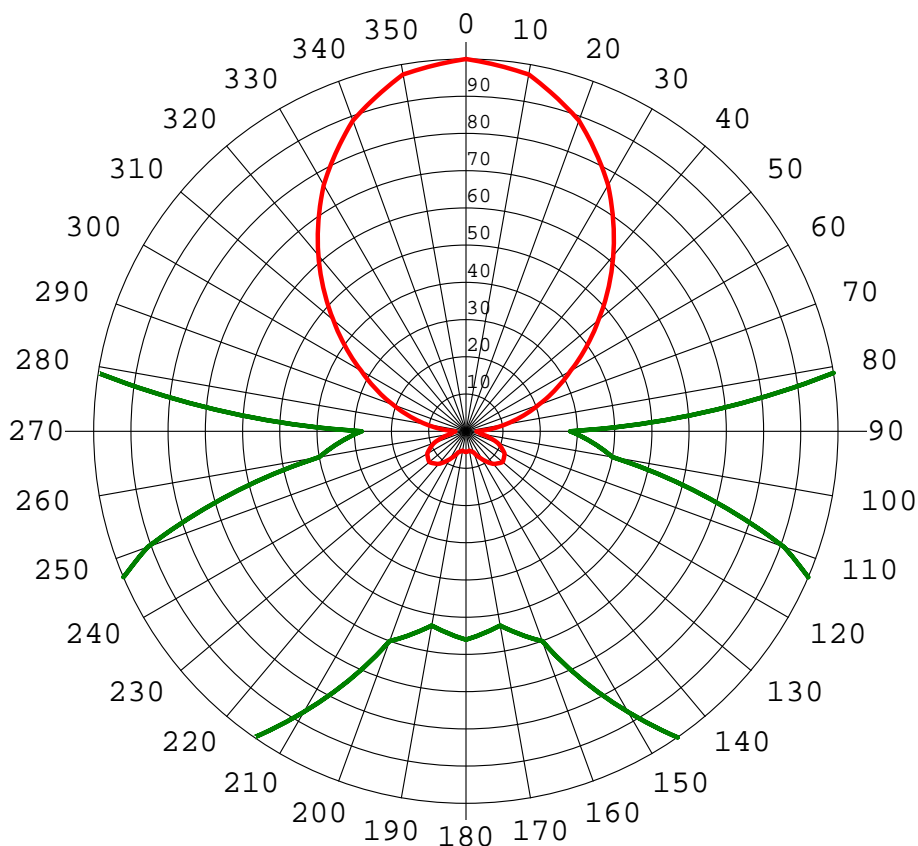


# Charlottesville, DRV-1, Horizontal Azimuth Pattern

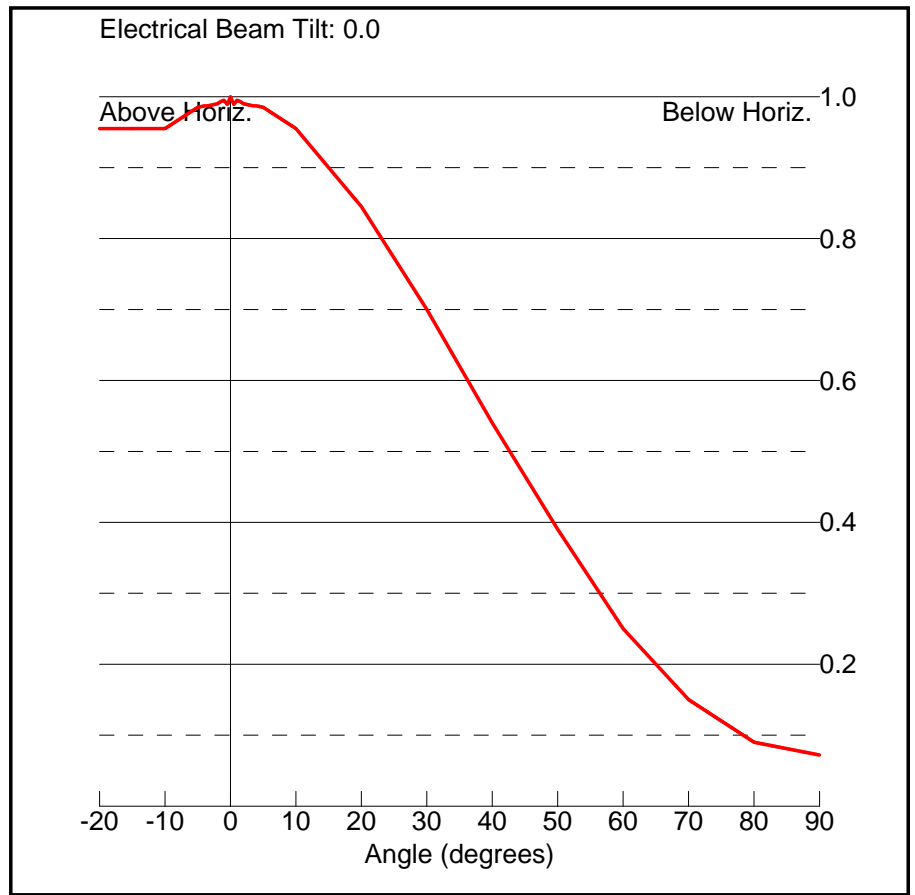


| Azi | Rel   | dBk    | kW    | dB     | Azi | Rel   | dBk    | kW    | dB     |
|-----|-------|--------|-------|--------|-----|-------|--------|-------|--------|
| 0   | 1.000 | -10.00 | 0.100 | 0.00   | 180 | 0.056 | -35.04 | 0.000 | -25.04 |
| 10  | 0.973 | -10.24 | 0.095 | -0.24  | 190 | 0.053 | -35.51 | 0.000 | -25.51 |
| 20  | 0.888 | -11.03 | 0.079 | -1.03  | 200 | 0.060 | -34.44 | 0.000 | -24.44 |
| 30  | 0.764 | -12.34 | 0.058 | -2.34  | 210 | 0.087 | -31.21 | 0.001 | -21.21 |
| 40  | 0.616 | -14.21 | 0.038 | -4.21  | 220 | 0.115 | -28.79 | 0.001 | -18.79 |
| 50  | 0.465 | -16.65 | 0.022 | -6.65  | 230 | 0.129 | -27.79 | 0.002 | -17.79 |
| 60  | 0.325 | -19.76 | 0.011 | -9.76  | 240 | 0.120 | -28.42 | 0.001 | -18.42 |
| 70  | 0.208 | -23.64 | 0.004 | -13.64 | 250 | 0.091 | -30.82 | 0.001 | -20.82 |
| 80  | 0.108 | -29.33 | 0.001 | -19.33 | 260 | 0.040 | -37.96 | 0.000 | -27.96 |
| 90  | 0.028 | -41.06 | 0.000 | -31.06 | 270 | 0.028 | -41.06 | 0.000 | -31.06 |
| 100 | 0.040 | -37.96 | 0.000 | -27.96 | 280 | 0.108 | -29.33 | 0.001 | -19.33 |
| 110 | 0.091 | -30.82 | 0.001 | -20.82 | 290 | 0.208 | -23.64 | 0.004 | -13.64 |
| 120 | 0.120 | -28.42 | 0.001 | -18.42 | 300 | 0.325 | -19.76 | 0.011 | -9.76  |
| 130 | 0.129 | -27.79 | 0.002 | -17.79 | 310 | 0.465 | -16.65 | 0.022 | -6.65  |
| 140 | 0.115 | -28.79 | 0.001 | -18.79 | 320 | 0.617 | -14.19 | 0.038 | -4.19  |
| 150 | 0.087 | -31.21 | 0.001 | -21.21 | 330 | 0.764 | -12.34 | 0.058 | -2.34  |
| 160 | 0.060 | -34.44 | 0.000 | -24.44 | 340 | 0.888 | -11.03 | 0.079 | -1.03  |
| 170 | 0.053 | -35.51 | 0.000 | -25.51 | 350 | 0.973 | -10.24 | 0.095 | -0.24  |

Rotation Angle = 0

# Chrlottesville\_Vertical Elevation Pattern

| Angle (deg) | Relative Field |
|-------------|----------------|
| -10.0       | 0.955          |
| -5.0        | 0.985          |
| -4.5        | 0.986          |
| -4.0        | 0.987          |
| -3.5        | 0.987          |
| -3.0        | 0.988          |
| -2.5        | 0.989          |
| -2.0        | 0.99           |
| -1.5        | 0.993          |
| -1.0        | 0.995          |
| -0.5        | 0.989          |
| 0.0         | 1.0            |
| 0.5         | 0.989          |
| 1.0         | 0.995          |
| 1.5         | 0.993          |
| 2.0         | 0.99           |
| 2.5         | 0.989          |
| 3.0         | 0.988          |
| 3.5         | 0.987          |
| 4.0         | 0.987          |
| 4.5         | 0.986          |
| 5.0         | 0.985          |
| 5.5         | 0.982          |
| 6.0         | 0.979          |
| 6.5         | 0.976          |
| 7.0         | 0.973          |
| 7.5         | 0.97           |
| 8.0         | 0.967          |
| 8.5         | 0.964          |
| 9.0         | 0.961          |
| 9.5         | 0.958          |
| 10.0        | 0.955          |
| 20.0        | 0.845          |
| 30.0        | 0.7            |
| 40.0        | 0.54           |
| 50.0        | 0.39           |
| 60.0        | 0.25           |
| 70.0        | 0.15           |
| 80.0        | 0.09           |
| 90.0        | 0.072          |



## VHF-TV Panel Antenna 174 to 230 MHz (Channels 7–13\*)

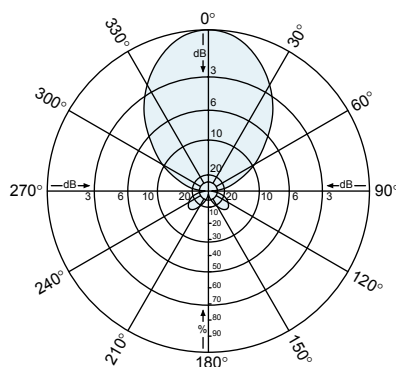
Kathrein Scala Division DRV panel antennas for VHF television transmission offer high performance, low VSWR, and application flexibility. Multi-panel arrays can be utilized to provide the standard patterns shown below and custom patterns for specific coverage requirements. Arrays include power dividers and coax feeders, plus installation hardware.

Like all Kathrein Scala Division antennas, the DRV is made of the finest materials using state of the art electrical and mechanical designs, resulting in superior performance and long service life.

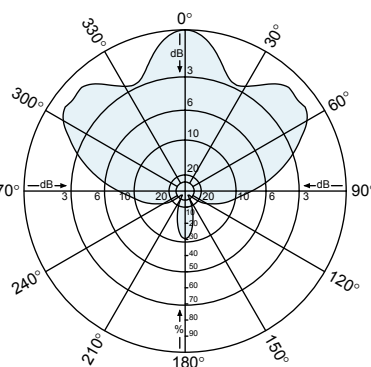
\*The DRV covers channel 7 through 13 in system M as well as all other international band III channels.



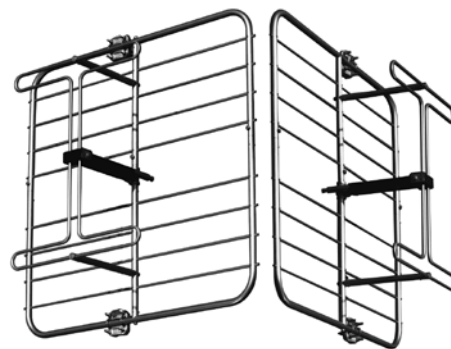
(shown horizontally polarized)



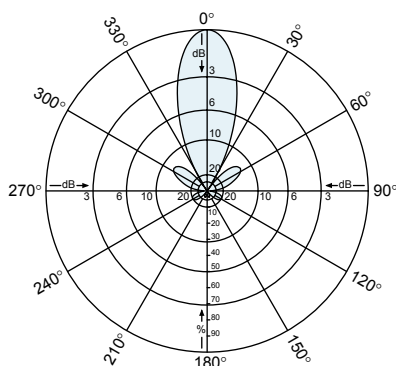
**/1 series**  
Azimuth pattern (E-plane)



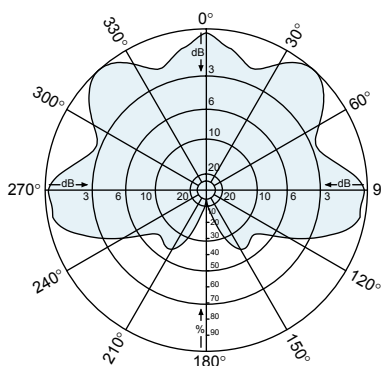
**/2HW series**  
Azimuth pattern (E-plane)



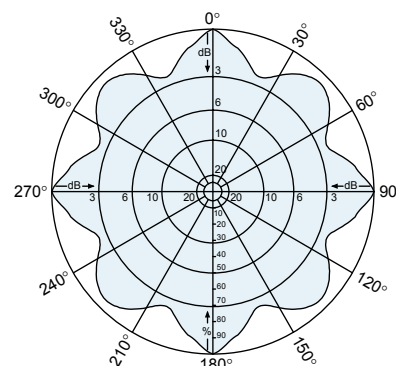
DRV-1/2HW array



**/2HN series**  
Azimuth pattern (E-plane)



**/3HC series**  
Azimuth pattern (E-plane)



**/4HO series**  
Azimuth pattern (E-plane)



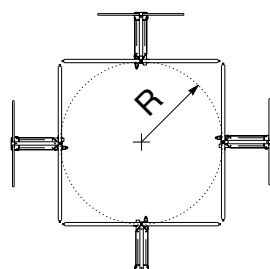
10285-E



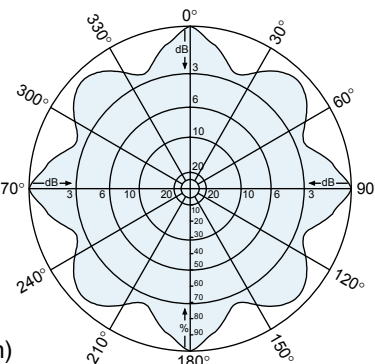
## VHF-TV Panel Antenna 174 to 230 MHz (Channels 7–13\*)

### Optimum

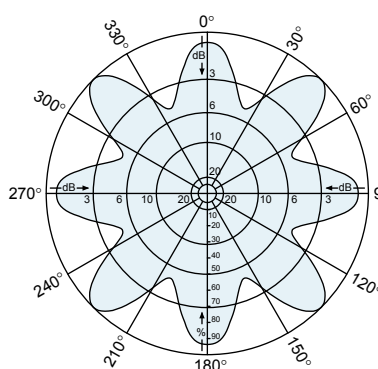
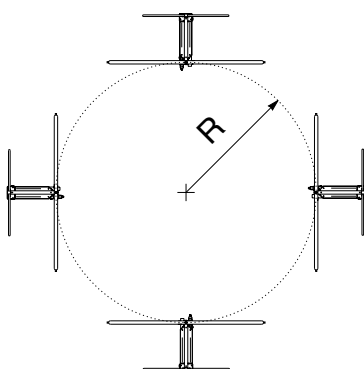
Panel antennas are designed so that their azimuth patterns achieve optimum smoothness when mounted as closely together as possible. Larger mounting radii produce undesirable scalloping.



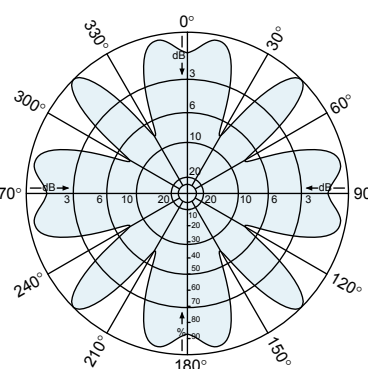
R = 25 inches (635 mm)



### Scalloped



R = 40 inches (1016 mm)



R = 60 inches (1524 mm)

### Specifications:

| Model     | Gain<br>dBd | Power<br>Gain | Weight<br>lb (kg) | Dimensions            |                         | Number<br>of Panels | Number<br>of Bays |
|-----------|-------------|---------------|-------------------|-----------------------|-------------------------|---------------------|-------------------|
| DRV-1/1   | 7           | 5.01          | 18 (8.2)          | 48 x 48 x 18 inches   | (1219 x 1219 x 457 mm)  | 1                   | 1                 |
| DRV-2/1   | 10.4        | 10.96         | 36 (16.4)         | 110 x 48 x 18 inches  | (2794 x 1219 x 457 mm)  | 2                   | 2                 |
| DRV-4/1   | 13.4        | 21.88         | 72 (32.8)         | 237 x 48 x 18 inches  | (6020 x 1219 x 457 mm)  | 4                   | 4                 |
| DRV-1/2HN | 10          | 10            | 36 (16.4)         | 48 x 100 x 18 inches  | (1219 x 2540 x 457 mm)  | 2                   | 1                 |
| DRV-2/2HN | 13.4        | 21.88         | 72 (32.8)         | 110 x 100 x 18 inches | (2794 x 2540 x 457 mm)  | 4                   | 2                 |
| DRV-4/2HN | 16.4        | 43.65         | 144 (65.6)        | 237 x 100 x 18 inches | (6020 x 2540 x 457 mm)  | 8                   | 4                 |
| DRV-1/2HW | 4.5         | 2.82          | 36 (16.4)         | 48 x 70 x 70 inches   | (1219 x 1778 x 1778 mm) | 2                   | 1                 |
| DRV-2/2HW | 7.9         | 6.17          | 72 (32.8)         | 110 x 70 x 70 inches  | (2794 x 1778 x 1778 mm) | 4                   | 2                 |
| DRV-4/2HW | 10.9        | 12.3          | 144 (65.6)        | 237 x 70 x 70 inches  | (6020 x 1778 x 1778 mm) | 8                   | 4                 |
| DRV-1/3HC | 2.5         | 1.78          | 54 (24.6)         | 48 x 88 x 70 inches   | (1219 x 2235 x 1778 mm) | 3                   | 1                 |
| DRV-2/3HC | 5.9         | 3.89          | 108 (49.2)        | 110 x 88 x 70 inches  | (2794 x 2235 x 1778 mm) | 6                   | 2                 |
| DRV-4/3HC | 8.9         | 7.76          | 216 (98.4)        | 237 x 88 x 70 inches  | (6020 x 2235 x 1778 mm) | 12                  | 4                 |
| DRV-1/4HO | 1           | 1.26          | 72 (32.8)         | 48 x 88 x 88 inches   | (1219 x 2235 x 2235 mm) | 4                   | 1                 |
| DRV-2/4HO | 4.4         | 2.75          | 144 (65.6)        | 110 x 88 x 88 inches  | (2794 x 2235 x 2235 mm) | 8                   | 2                 |
| DRV-4/4HO | 7.4         | 5.5           | 288 (131)         | 237 x 88 x 88 inches  | (6020 x 2235 x 2235 mm) | 16                  | 4                 |

**Contact Kathrein Scala Division Sales Engineering for information on special arrays with higher gain, asymmetrical patterns, electrical beamtilt, null fill, multichannel bandwidth, and other features to meet your specific requirements.**

All specifications are subject to change without notice. The latest specifications are available at [www.kathrein-scala.com](http://www.kathrein-scala.com).

VHF-TV Panel Antenna  
174 to 230 MHz (Channels 7–13\*)

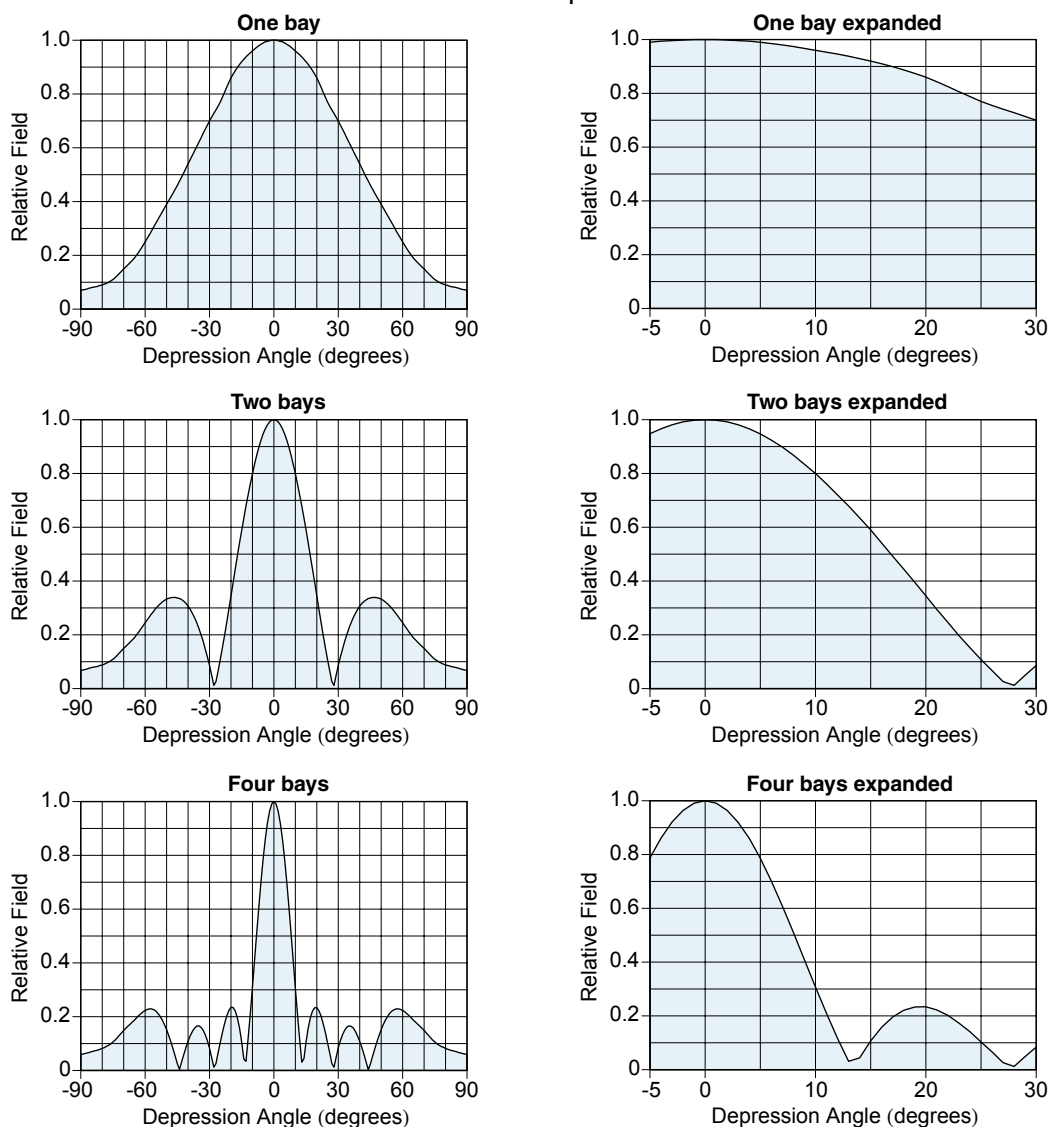
**General Specifications:**

|                        |  |
|------------------------|--|
| Frequency              | 174–230 MHz (broadband)*   |
| Impedance              | 50 ohms  |
| VSWR                   | < 1.2:1  |
| Polarization           | Horizontal or vertical   |
| Maximum input power    | 500 watts per panel (at 50° C)   |
| Connector              | N female   |
| Wind load<br>Front     | at 100 mph (160 kph)<br>93 lbf (412 N)   |
| Wind survival rating** | 120 mph (200 kph)  |
| Mounting               | Hardware is included for attachment to 2.375 inch (60 mm) OD masts. Contact Kathrein Scala Division Sales Engineering for special mounting hardware and accessories. |

\*The DRV covers channel 7 through 13 in system M as well as all other international band III channels.

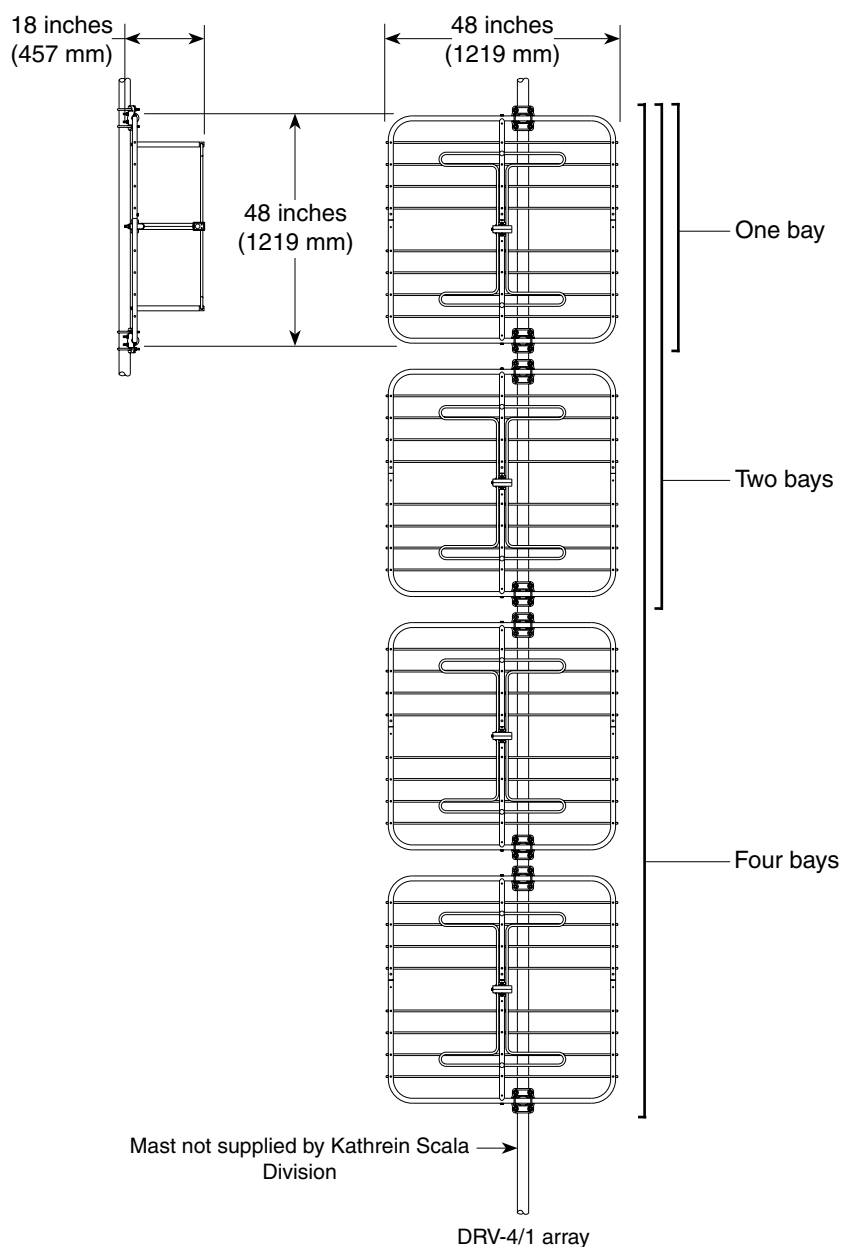
\*\* Mechanical design is based on environmental conditions as stipulated in TIA-222-G-2 (December 2009) and/or ETS 300 019-1-4 which include the static mechanical load imposed on an antenna by wind at maximum velocity. See the Engineering Section of the catalog for further details.

**Elevation patterns**

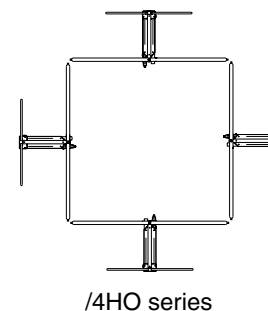
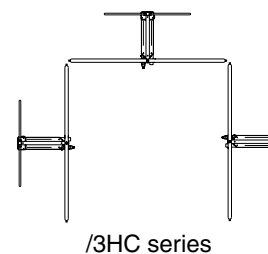
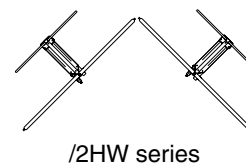
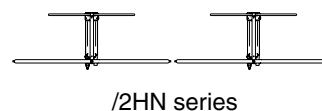
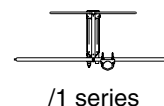


All specifications are subject to change without notice. The latest specifications are available at [www.kathrein-scala.com](http://www.kathrein-scala.com).

VHF-TV Panel Antenna  
174 to 230 MHz (Channels 7–13\*)



**DRV Array  
Top Views**



**Order Information:**

| Model              | Description              |
|--------------------|--------------------------|
| DRV (single panel) | Panel Antenna for VHF-TV |

All specifications are subject to change without notice. The latest specifications are available at [www.kathrein-scala.com](http://www.kathrein-scala.com).

Kathrein Inc., Scala Division Post Office Box 4580 Medford, OR 97501 (USA) Phone: (541) 779-6500 Fax: (541) 779-3991  
Email: [communications@kathrein.com](mailto:communications@kathrein.com) Internet: [www.kathrein-scala.com](http://www.kathrein-scala.com)

N. Lat. = 375900.0 W. Lng. = 782901.0 NAD 83  
 HAAT and Distance to Contour,  
 FCC OET,TV 3.2 - 16.1, 130 pts - NED 03 SEC

WVPT2, Shenandoah Valley Educationa, BLEDT20130214ACP

| Azi. | AV EL | HAAT  | ERP kW | dBk    | Field | DAng  | VFld  | D-kw   | %Max | D-dBk  | 36-F9 |
|------|-------|-------|--------|--------|-------|-------|-------|--------|------|--------|-------|
| 000  | 142.2 | 352.8 | 0.1000 | -10.00 | 1.000 | 0.520 | 0.989 | 0.0979 | 98.9 | -10.00 | 61.04 |
| 010  | 134.9 | 360.1 | 0.0947 | -10.24 | 0.973 | 0.526 | 0.989 | 0.0927 | 98.9 | -10.24 | 61.13 |
| 020  | 117.4 | 377.6 | 0.0789 | -11.03 | 0.888 | 0.538 | 0.989 | 0.0772 | 98.9 | -11.03 | 60.83 |
| 030  | 131.4 | 363.6 | 0.0584 | -12.34 | 0.764 | 0.528 | 0.989 | 0.0571 | 98.9 | -12.34 | 57.75 |
| 040  | 200.4 | 294.6 | 0.0379 | -14.21 | 0.616 | 0.475 | 0.990 | 0.0372 | 99.0 | -14.21 | 50.44 |
| 050  | 255.8 | 239.2 | 0.0216 | -16.65 | 0.465 | 0.428 | 0.991 | 0.0212 | 99.1 | -16.65 | 43.04 |
| 060  | 145.4 | 349.6 | 0.0106 | -19.76 | 0.325 | 0.518 | 0.989 | 0.0103 | 98.9 | -19.76 | 44.24 |
| 070  | 127.7 | 367.3 | 0.0043 | -23.64 | 0.208 | 0.531 | 0.989 | 0.0042 | 98.9 | -23.64 | 38.37 |
| 080  | 118.6 | 376.4 | 0.0012 | -29.33 | 0.108 | 0.537 | 0.989 | 0.0011 | 98.9 | -29.33 | 29.03 |
| 090  | 118.6 | 376.4 | 0.0001 | -41.06 | 0.028 | 0.537 | 0.989 | 0.0001 | 98.9 | -41.06 | 15.88 |
| 100  | 115.2 | 379.8 | 0.0002 | -37.96 | 0.040 | 0.540 | 0.989 | 0.0002 | 98.9 | -37.96 | 19.05 |
| 110  | 105.9 | 389.1 | 0.0008 | -30.82 | 0.091 | 0.546 | 0.990 | 0.0008 | 99.0 | -30.82 | 27.50 |
| 120  | 122.8 | 372.2 | 0.0014 | -28.42 | 0.120 | 0.534 | 0.989 | 0.0014 | 98.9 | -28.42 | 30.20 |
| 130  | 129.6 | 365.4 | 0.0017 | -27.79 | 0.129 | 0.530 | 0.989 | 0.0016 | 98.9 | -27.79 | 30.88 |
| 140  | 130.7 | 364.3 | 0.0013 | -28.79 | 0.115 | 0.529 | 0.989 | 0.0013 | 98.9 | -28.79 | 29.30 |
| 150  | 136.0 | 359.0 | 0.0008 | -31.21 | 0.087 | 0.525 | 0.989 | 0.0007 | 98.9 | -31.21 | 25.90 |
| 160  | 140.0 | 355.0 | 0.0004 | -34.44 | 0.060 | 0.522 | 0.989 | 0.0004 | 98.9 | -34.44 | 22.09 |
| 170  | 145.0 | 350.0 | 0.0003 | -35.51 | 0.053 | 0.518 | 0.989 | 0.0003 | 98.9 | -35.51 | 20.79 |
| 180  | 138.9 | 356.1 | 0.0003 | -35.04 | 0.056 | 0.523 | 0.989 | 0.0003 | 98.9 | -35.04 | 21.49 |
| 190  | 149.9 | 345.1 | 0.0003 | -35.51 | 0.053 | 0.515 | 0.989 | 0.0003 | 98.9 | -35.51 | 20.63 |
| 200  | 157.5 | 337.5 | 0.0004 | -34.44 | 0.060 | 0.509 | 0.989 | 0.0004 | 98.9 | -34.44 | 21.51 |
| 210  | 176.5 | 318.5 | 0.0008 | -31.21 | 0.087 | 0.494 | 0.989 | 0.0007 | 98.9 | -31.21 | 24.44 |
| 220  | 181.3 | 313.7 | 0.0013 | -28.79 | 0.115 | 0.491 | 0.989 | 0.0013 | 98.9 | -28.79 | 27.28 |
| 230  | 167.7 | 327.3 | 0.0017 | -27.79 | 0.129 | 0.501 | 0.989 | 0.0016 | 98.9 | -27.79 | 29.22 |
| 240  | 172.3 | 322.7 | 0.0014 | -28.42 | 0.120 | 0.498 | 0.989 | 0.0014 | 98.9 | -28.42 | 28.14 |
| 250  | 210.6 | 284.4 | 0.0008 | -30.82 | 0.091 | 0.467 | 0.990 | 0.0008 | 99.0 | -30.82 | 23.83 |
| 260  | 215.8 | 279.2 | 0.0002 | -37.96 | 0.040 | 0.463 | 0.990 | 0.0002 | 99.0 | -37.96 | 16.19 |
| 270  | 220.3 | 274.7 | 0.0001 | -41.06 | 0.028 | 0.459 | 0.990 | 0.0001 | 99.0 | -41.06 | 13.28 |
| 280  | 239.0 | 256.0 | 0.0012 | -29.33 | 0.108 | 0.443 | 0.990 | 0.0011 | 99.0 | -29.33 | 24.93 |
| 290  | 214.2 | 280.8 | 0.0043 | -23.64 | 0.208 | 0.464 | 0.990 | 0.0042 | 99.0 | -23.64 | 33.93 |
| 300  | 196.2 | 298.8 | 0.0106 | -19.76 | 0.325 | 0.479 | 0.989 | 0.0103 | 98.9 | -19.76 | 41.52 |
| 310  | 178.0 | 317.0 | 0.0216 | -16.65 | 0.465 | 0.493 | 0.989 | 0.0212 | 98.9 | -16.65 | 47.73 |
| 320  | 165.1 | 329.9 | 0.0381 | -14.19 | 0.617 | 0.503 | 0.989 | 0.0372 | 98.9 | -14.19 | 52.51 |
| 330  | 167.3 | 327.7 | 0.0584 | -12.34 | 0.764 | 0.501 | 0.989 | 0.0571 | 98.9 | -12.34 | 55.43 |
| 340  | 162.5 | 332.5 | 0.0789 | -11.03 | 0.888 | 0.505 | 0.989 | 0.0771 | 98.9 | -11.03 | 57.90 |
| 350  | 149.2 | 345.8 | 0.0947 | -10.24 | 0.973 | 0.515 | 0.989 | 0.0926 | 98.9 | -10.24 | 60.14 |

Ave EL= 160.56 M HAAT= 334.44 M AMSL= 495 M