



## Technical Specifications

This appendix lists the technical specifications for the following WipLL units:

- WipLL Base Station equipment:
  - Base Station Radio (BSR)
  - Point-to-Point Radio (PPR)
  - Base Station Distribution Unit (BSDU)
  - Base Station Power Supply (BSPS)
  - GPS antenna
- WipLL Customer premises equipment:
  - Subscriber Premises Radio (SPR)
  - Subscriber Data Adapter (SDA)
    - SDA-1
    - SDA-4H
    - SDA-4S models
  - Indoor Data Radio (IDR)

## C.1. Base Station WipLL Equipment

The following sub-sections list the specifications of the following WipLL Base Station equipment:

- Base Station Radio (BSR)
- Point-to-Point Radio (PPR)
- Base Station Distribution Unit (BSDU)
- Base Station Power Supply (BSPS)

## C.1.1. Base Station Radio (BSR)

Table C-1: BSR and MAC Specifications

| Parameter                 | Value  | Comment   |
|---------------------------|--|---|
| Operating frequency range | <ul style="list-style-type: none"> <li>• 2.4 GHz</li> <li>• 3.x GHz, MMDS, 2.8</li> <li>• 5.8 GHz</li> <li>• 900 MHz</li> <li>• 700 MHz</li> </ul>   | <ul style="list-style-type: none"> <li>• ISM band</li> <li>• Licensed band</li> <li>• Unlicensed</li> <li>• Unlicensed</li> <li>• Licensed</li> </ul> *Other ranges available for trial |
| Spectrum spreading method | Frequency hopping  | Per ETSI EN301 253  |
| Duplex method             | <ul style="list-style-type: none"> <li>• Time Division Duplex (TDD): 2.4 GHz, 2.8 GHz, 3.x GHz, MMDS, 900 MHz, 700 MHz, and 5.8 GHz</li> <li>• Frequency Division Duplex (FDD): 3.x GHz</li> </ul> |   |
| Transmit bit rates        | Up to 4 Mbps   | BER and distance dependent  |
| Channel spacing           | 1 MHz  | For 3.5 GHz the channel spacing can be 1 MHz or 1.75 MHz  |
| Output power from the BSR | Up to 27 dBm (configurable)  | Depending on local regulations, maximum output power can be configured at the factory   |
| Modulation method         | 8-level CPFSK  |   |
| Channel access method     | PPMA / Adaptive TDMA   |   |
| Protocol efficiency       | Up to 80%  | For large data packets  |
| Number of SPR/IDR per BSR | Up to 126  |   |

**Table C-2: BSR EMC and Radio Standards Compliance**

| Parameter                  | Value   |
|----------------------------|---|
| Radio Standards Compliance | <ul style="list-style-type: none"> <li>• ETSI EN 300 328-1</li> <li>• ETSI EN 301 253</li> <li>• FCC part 15</li> <li>• RSS139</li> <li>• Telec</li> </ul>                        |
| EMC                        | <ul style="list-style-type: none"> <li>• ETSI ETS 300 826</li> <li>• ETSI EN 300 385</li> <li>• ETSI EN 300 386-2</li> <li>• ETSI ETS 300 132-2</li> <li>• FCC part 15</li> </ul> |

**Table C-3: BSR Agency Certification**

| Parameter            | Value                               |
|----------------------|-------------------------------------|
| Emissions / Immunity | EN 300 339 EN 300 386-2 ETS 300 328 |
| Safety               | EN / IEC 60950                      |
| Environmental        | ETS 300 019-2-x                     |

**Table C-4: BSR Network Specifications**

| Parameter            | Value                           | Comment            |
|----------------------|---------------------------------|--------------------|
| Filtering Rate       | 10,500 frames/sec               | At 64 byte packets |
| Forwarding Rate      | 1,300 frames/sec                | At 64 byte packets |
| Routing table length | 200 networks, including subnets |                    |

**Table C-5: BSR Power Requirements**

| Parameter        | Value          | Comment   |
|------------------|----------------|---|
| Voltage          | 48 VDC nominal | Voltage is received from the BSDU or SDA, depending on base station setup |
| • Minimum:       | • 30 VDC       |   |
| • Maximum:       | • 55 VDC       |   |
| Maximum Amperes: | 500 mA         |   |

**Table C-6: BSR Environmental Conditions**

| Parameter  | Value          | Comment                          |
|--|----------------|----------------------------------|
| Operating temperature of outdoor units (BSR and SPR) | -30°C to +60°C | Optional range of -40°C to +70°C |
| Storage temperature                                  | -40°C to +80°C |                                  |

**Table C-7: BSR Network Interface**

| Parameter            | Value   | Comment    |
|----------------------|---|------------|
| Ethernet Network     | UTP EIA/TIA   | Category 5 |
| Standards Compliance | ANSI/IEEE 802.3 and ISO/IEC 8802-3 10Base-T compliant |            |
| Serial Port          | RS-232  |            |

**Table C-8: BSR Physical Dimensions**

| Parameter | Value                 | Comment                |
|-----------|-----------------------|------------------------|
| Height    | 400 mm (15.74 inches) | Excluding mounting kit |
| Width     | 317 mm (12.48 inches) |                        |
| Depth     | 65.5 mm (2.58 inches) |                        |
| Weight    | 4.7 kg                |                        |

## C.1.2. Point-to-Point Radio (PPR)

**Table C-9: PPR Radio Specifications**

| Parameter                                    | Value   |
|--|---|
| Operating frequency bands                    | <ul style="list-style-type: none"> <li>• 2,400 to 2,500 MHz</li> <li>• 3,400 to 3,800 MHz</li> <li>• 5,725 to 5,875 MHz</li> </ul>  |
| Duplex method                                | <ul style="list-style-type: none"> <li>• Time Division Duplex (TDD) for all bands</li> <li>• Frequency Division Duplex (FDD) for 3.4 to 3.8 GHz</li> </ul>                        |
| Radio Technology                             | FH-CDMA   |
| Multiple Access Method                       | PPMA  |
| Output power                                 | 27 dBm  |
| Antenna type (built-in)                      | <ul style="list-style-type: none"> <li>• PPR</li> <li>• SPR</li> </ul>  |
|  | <ul style="list-style-type: none"> <li>• 18 dBi / 15 dBi</li> <li>• 18 dBi / 15 dBi</li> </ul>  |
| Sub-Channel Spacing                          | 1 MHz   |
| Modulation                                   | Multilevel (2, 4, or 8) CPFSK   |
| Receiver Sensitivity (BER 1E-6 at 2/4/8 FSK) | -90/ -83/ -75 dBm   |
| Throughput                                   | Up to 4 Mbps per PPR-SPR link   |
| Radio Standards Compliance                   | <ul style="list-style-type: none"> <li>• ETSI EN 300 328-1</li> <li>• ETSI EN 301 253</li> <li>• FCC part 15</li> <li>• RSS139</li> <li>• Telec</li> </ul>                        |
| EMC  | <ul style="list-style-type: none"> <li>• ETSI ETS 300 826</li> <li>• ETSI EN 300 385</li> <li>• ETSI EN 300 386-2</li> <li>• ETSI ETS 300 132-2</li> <li>• FCC part 15</li> </ul> |

### C.1.3. Base Station Distribution Unit (BSDU)

**Table C-10: BSDU Network Specifications**

| Parameter       | Value                |
|-----------------|----------------------|
| Filtering Rate  | 105,000 Frames / sec |
| Forwarding Rate | 62,500 Frames / sec  |

**Table C-11: BSDU Power Requirements**

| Parameter         | Value  |
|-------------------|--|
| Voltage           | 48VDC nominal                                    |
| Power consumption | Maximum 300W (including the feeding of 6 × BSRs) |

**Table C-12: BSDU Environmental Conditions**

| Parameter             | Value          |
|-----------------------|----------------|
| Operating Temperature | 0°C to +50°C   |
| Storage Temperature   | -40°C to +80°C |

**Table C-13: BSDU Network Interface**

| Parameter            | Value  | Comment    |
|----------------------|--|------------|
| Ethernet Network     | 100/10Base-T: UTP EIA/TIA                                  | Category 5 |
| Standards Compliance | ANSI/IEEE 802.3, ISO/IEC 8802-3<br>10/100 Base-T compliant |            |
| Serial Port          | RS-232   |            |

**Table C-14: BSDU Physical Dimensions**

| Parameter | Value    |
|-----------|----------|
| Height    | 4.32 cm  |
| Width     | 48.26 cm |
| Depth     | 22.86 cm |
| Weight    | 2.9 kg   |

### C.1.4. Base Station Power Supply (BSPS)

**Table C-15: BSPS Rectifier Specifications**

|                | Parameter  | Value   |
|----------------|--|---|
| <b>Input</b>   | Voltage  | 90VAC to 270VAC   |
|                | Current (nominal)  | 3.2A @ 230V / 4.3A @ 115V   |
|                | Frequency  | 47Hz to 63Hz  |
|                | Power factor (nominal line/load)                                   | Greater or equal to 0.993   |
| <b>Output</b>  | Voltage (default)  | 53.5VDC   |
|                | Regulation (line & load)   | ±0.4%   |
|                | Adjustable range   | 47 to 58 VDC  |
|                | Current  | 12A @ 54V   |
|                | Ripple & noise   | 50mVp-p   |
|                | Efficiency (nominal load)  | 85% @ 230V / 82% @ 115V   |
|                | Overload current   | <12A  |
|                | Over-voltage protection  | 60 VDC  |
|                | Over-temperature protection (measured on case, upper panel corner) | <ul style="list-style-type: none"> <li>• 80±5°C rectifier stops</li> <li>• 72±5°C rectifier recovers</li> </ul>                     |
|                | Walk-in time   | < 0.5 sec   |
|                | Hold-up time   | 40 ms   |
| <b>General</b> | Withstand voltage (1 min)  | <ul style="list-style-type: none"> <li>• 4230VDC INPUT/OUTPUT</li> <li>• 2120VDC INPUT/GND</li> <li>• 1700VDC OUTPUT/GND</li> </ul> |
|                | Working temperature  | -10 to 45°C   |
|                | Storage temperature  | -50 to 80°C   |
|                | Dimensions (mm)  | 235 x 150 x 50 (L x W x H)  |
|                | Weight   | 1100g   |
|                | EMC  | Refer to system specifications  |
|                | Safety   | According to: IEC950  |



Table C-16: BSPS DC Distribution Specifications

|                | Parameter  | Value  |
|----------------|--|--|
| <b>Input</b>   | Voltage  | 90VAC to 270VAC  |
|                | Current (at full load)<br>N =Number of rectifier modules | <ul style="list-style-type: none"> <li>• N*3.2A @ 230V</li> <li>• N*4.3A @ 115V</li> </ul> |
|                | Frequency  | 47 Hz to 63 Hz   |
|                | Power factor (at full load)                              | Greater or equal to 0.993  |
|                | Voltage (programmable)                                   | 42 to 60VDC $\pm$ 0.5VDC   |
| <b>Output</b>  | Default float and boost voltage                          | 54 and 57VDC respectively  |
|                | Regulation (line, load, sharing)                         | $\pm$ 1%   |
|                | Current  | N*12A (48A max.)   |
|                | Psophometric noise                                       | -52 dBm (over 600 &)   |
|                | Ripple & noise   | 50mVp-p  |
|                | Efficiency (nominal load)                                | 85% @ 230V / 82% @ 115V  |
|                | Overload current   | < N*12A  |
|                | Over-voltage protection                                  | 60VDC  |
|                | Walk-in time   | < 1 sec  |
|                | Hold-up time   | 40 ms  |
|                | Output current indication                                | 10 LED's bar-graph   |
|                | Active current sharing                                   | $\pm$ 10% accuracy at full load  |
|                | Withstand voltage (1 min)                                | 2120VDC INPUT/GND  |
| <b>General</b> | Working temperature                                      | -10 , 45°C   |
|                | Storage temperature                                      | -50 , 80°C   |
|                | Dimensions (19" X 3U)                                    | Depth is 320mm W/O terminals,<br>360mm with terminals                                      |
|                | Weight   | 13 kg (main unit + 3 rectifiers)   |
|                | RS232 Communication                                      | 9600 bps, no-parity, 1 stop-bit  |

|                                 | Parameter                 | Value   |
|---------------------------------|---------------------------|---|
|                                 | EMC                       | According to: <ul style="list-style-type: none"> <li>• EN300-386-2 SUB 7.2.3</li> <li>• EN55022 class B</li> <li>• IEC1000-4-2</li> <li>• IEC1000-4-3</li> <li>• IEC1000-4-4</li> <li>• IEC1000-4-5</li> <li>• IEC1000-4-6</li> <li>• IEC1000-4-11</li> <li>• IEC1000-3-2</li> <li>• IEC1000-3-3</li> </ul> |
|                                 | Safety                    | According to: IEC950  |
|                                 | Maximum current withstand | 2x70A   |
| <b>LVL</b><br><b>(optional)</b> | Trip voltage level        | Disconnect default: 43± 0.5 VDC, user programmable Re-connect: with AC recovery   |

## C.1.5. GPS antenna

**Table C-17: SPR Power Requirements**

| Parameter     | Value  | Comment                  |
|---------------|--------|--------------------------|
| Voltage Input | 36 VDC | Supplied by WipLL's BSDU |
| Consumption   | 1.8W   |                          |

**Table C-18: Environmental Considerations**

| Parameter             | Value          | Comment |
|-----------------------|----------------|---------|
| Operating temperature | -30°C to +75°C |         |

**Table C-19: GPS General**

| Parameter            | Value                   | Comment |
|----------------------|-------------------------|---------|
| Input                | DGPS (Differential GPS) |         |
| Output               | 1 pulse per second      |         |
| Standards Compliance | MIL-STD 810E            |         |
| Interface standard   | RS-422                  |         |

**Table C-20: GPS Dimensions**

| Parameter | Value  | Comment |
|-----------|--------|---------|
| Diameter  | 115 mm |         |
| Height    | 90 mm  |         |

## C.2. Customer Premises WipLL Equipment

The following sub-sections list the specifications of the following WipLL CPE equipment:

- Subscriber Premises Radio (SPR)
- Subscriber Data Adapter (SDA)
- Indoor Data Radio (IDR)

### C.2.1. Subscriber Premises Radio (SPR)

**Table C-21: SPR and MAC Specifications**

| Parameter                   | Value  | Comment   |
|-----------------------------|--|---|
| Operating frequency         | <ul style="list-style-type: none"> <li>• 2.4 GHz</li> <li>• 3.x GHz, MMDS, 2.8</li> <li>• 5.8 GHz</li> <li>• 900 MHz</li> <li>• 700 MHz</li> </ul>   | <ul style="list-style-type: none"> <li>• ISM band</li> <li>• Licensed band</li> <li>• Unlicensed</li> <li>• Unlicensed</li> <li>• Licensed</li> </ul> |
| Spectrum spreading method   | Frequency hopping  | Per ETSI EN 301 253   |
| Duplexing Method            | <ul style="list-style-type: none"> <li>• Time Division Duplex (TDD): 2.4 GHz, 2.8 GHz, 3.x GHz, MMDS, 900 MHz, 700 MHz, and 5.8 GHz</li> <li>• Frequency Division Duplex (FDD): 3.x GHz</li> </ul> |   |
| Transmit Bit Rates          | Up to 4 Mbps   | BER and distance dependent  |
| Channel spacing             | <ul style="list-style-type: none"> <li>• 1 MHz</li> <li>• 1 MHz or 1.75 MHz when operating in the 3.5 GHz band</li> </ul>  |   |
| Output power from the radio | Up to 27 dBm (configurable)  | Depending on local regulations. Maximum power output can be set at the factory.   |

| Parameter             | Value                | Comment                |
|-----------------------|----------------------|------------------------|
| Modulation method     | 8-level CPFSK        |                        |
| Channel access method | PPMA / Adaptive TDMA |                        |
| Protocol efficiency   | Up to 80%            | For large data packets |

**Table C-22: SPR EMC and Radio Standards Compliance**

| Parameter                  | Value   |
|----------------------------|---|
| Radio Standards Compliance | <ul style="list-style-type: none"> <li>• ETSI EN 300 328-1</li> <li>• ETSI EN 301 253</li> <li>• FCC part 15</li> <li>• RSS139</li> <li>• Telec</li> </ul>                        |
| EMC                        | <ul style="list-style-type: none"> <li>• ETSI ETS 300 826</li> <li>• ETSI EN 300 385</li> <li>• ETSI EN 300 386-2</li> <li>• ETSI ETS 300 132-2</li> <li>• FCC part 15</li> </ul> |

**Table C-23: SPR Agency Certification**

| Parameter            | Value                                 |
|----------------------|---------------------------------------|
| Emissions / Immunity | EN 300 339, EN 300 386-2, ETS 300 328 |
| Safety               | EN/IEC 60950                          |
| Environmental        | ETS 300 019-2-x                       |

**Table C-24: SPR Network Specifications**

| Parameter            | Value               | Comment     |
|----------------------|---------------------|-------------|
| Filtering rate       | 10,500 frames / sec | At 64 bytes |
| Forwarding rate      | 1,300 frames / sec  | At 64 bytes |
| Routing table length | 16                  |             |

**Table C-25: SPR Power Requirements**

| Parameter   | Value   | Comment                   |
|---|---|---------------------------|
| <ul style="list-style-type: none"> <li>• Voltage</li> <li>• Minimum</li> <li>• Maximum</li> </ul> | <ul style="list-style-type: none"> <li>• 48VDC nominal</li> <li>• 30VDC</li> <li>• 55VDC</li> </ul> | Power supplied by the SDA |
| Consumption   | Maximum   | 500 mA                    |

Table C-26: Environmental Considerations

| Parameter             | Value          |
|-----------------------|----------------|
| Operating temperature | -30°C to +60°C |
| Storage temperature   | -40°C to +80°C |

Table C-27: Network Interface

| Parameter            | Value   | Comment    |
|----------------------|---|------------|
| Ethernet Network     | UTP EIA / TIA   | Category 5 |
| Standards Compliance | ANSI/IEEE 802.3 and ISO/IEC 8802-3; 10BaseT compliant |            |
| Serial Port          | RS-232  |            |

Table C-28: SPR Physical Dimensions (without High-Gain Antenna)

| Parameter | Value                 | Comment                |
|-----------|-----------------------|------------------------|
| Height    | 311 mm (12.24 inches) | Excluding mounting kit |
| Width     | 244 mm (9.6 inches)   |                        |
| Depth     | 65.5 mm (2.57 inches) |                        |
| Weight    | 2.5 kg                |                        |

Table C-29: SPR Physical Dimensions (with High-Gain Antenna)

| Parameter | Value                 | Comment                |
|-----------|-----------------------|------------------------|
| Height    | 400 mm (15.74 inches) | Excluding mounting kit |
| Width     | 317 mm (12.48 inches) |                        |
| Depth     | 65.5 mm (2.57 inches) |                        |
| Weight    | 4.7 kg                |                        |




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**Note:** The SPR cable and connector are the same as the BSR.

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## C.2.2. Subscriber Data Adapter (SDA)

### C.2.2.1. SDA-1

**Table C-30: SDA-1 Physical Dimensions**

| Parameter | Value  |
|-----------|--------|
| Height    | 200 mm |
| Width     | 150 mm |
| Depth     | 40 mm  |
| Weight    | 47 kg  |

**Table C-31: SDA Power Requirements**

| Parameter      | Value                             |
|----------------|-----------------------------------|
| Output Voltage | -48VDC nominal                    |
| Power supply   | 110-240 VAC, 50/60Hz,<br>0.3-0.7A |

**Table C-32: SDA-1 Environmental Considerations**

| Parameter             | Value        |
|-----------------------|--------------|
| Operating temperature | 0°C to +50°C |

**Table C-33: SDA-1 Network Interfaces**

| Parameter         | Value                          |
|-------------------|--------------------------------|
| Data from SPR/BSR | DB15                           |
| Ethernet          | RJ45 socket for a PC interface |
| Power             | AC power connector             |



### C.2.2.2. SDA-4H

**Table C-34: SDA-4H Physical Dimensions**

| Parameter | Value |
|-----------|-------|
| Height    | 200mm |
| Width     | 150mm |
| Depth     | 40mm  |
| Weight    | 53 kg |

**Table C-35: SDA-4H Power Requirements**

| Parameter      | Value                             |
|----------------|-----------------------------------|
| Output Voltage | -48VDC nominal                    |
| Power supply   | 110-240 VAC, 50/60Hz,<br>0.3-0.7A |

**Table C-36: SDA-4H Environmental Considerations**

| Parameter             | Value        |
|-----------------------|--------------|
| Operating temperature | 0°C to +50°C |

**Table C-37: SDA-4H Network Interfaces**

| Parameter         | Value   |
|-------------------|---|
| Data from SPR/BSR | DB15  |
| Ethernet          | Three RJ45 socket for a PC interface; one RJ-45 for cross over connection |
| Power             | AC power connector  |

### C.2.2.3. SDA-4S Models

**Table C-38: SDA-4S Physical Dimensions**

| Parameter | Value                |
|-----------|----------------------|
| Height    | 200 mm (7.87 inches) |
| Width     | 150 mm (5.9 inches)  |
| Depth     | 40 mm (1.57 inches)  |
| Weight    | 53 kg                |

**Table C-39: SDA-4S Power Requirements**

| Parameter      | Value                              |
|----------------|------------------------------------|
| Output Voltage | -48VDC nominal                     |
| Power supply   | 110-240 VAC, 50/60 Hz,<br>0.3-0.7A |

**Table C-40: SDA-4S Environmental Considerations**

| Parameter             | Value        |
|-----------------------|--------------|
| Operating temperature | 0°C to +50°C |

**Table C-41: SDA-4S Network Interfaces**

| Parameter         | Value  |
|-------------------|--|
| Data from SPR/BSR | 15-pin D-type  |
| Ethernet          | Four 8-pin RJ-45 10/100BaseT sockets for PC interface. These ports support 10/100 Mbps (Auto Negotiation), and MDI/MDI-X automatic crossover |
| Power             | AC power connector   |

### C.2.3. Indoor Data Radio (IDR)

**Table C-42: IDR Radio and MAC Specifications**

| Parameter                   | Value  | Comment   |
|-----------------------------|--|---|
| Operating frequency         | <ul style="list-style-type: none"> <li>• 2.4 GHz</li> <li>• 3.45 GHz</li> <li>• 3.5 GHz</li> <li>• 900 MHz</li> </ul>  |   |
| Spectrum spreading method   | Frequency hopping  | (Per ETSI ETS 300 328)<br>ARIB-STD-T66  |
| Duplex Method               | <ul style="list-style-type: none"> <li>• Time Division Duplex (TDD) at 2.4 GHz and 900 MHz</li> <li>• Frequency Division Duplex (FDD) at 3.5 GHz and 3.45 GHz</li> </ul> |   |
| Transmit Bit Rates          | Up to 4 Mbps   | Depending on BER  |
| Channel spacing             | 1 MHz  |   |
| Output power from the radio | Up to 27 dBm, configurable at 2.4 GHz  | Depending on local regulations. Maximum power output can be set at the factory. |
| Channel access method       | PPMA   |   |
| Protocol efficiency         | Up to 80%  | At BER = $10^{-5}$ , depending on the application                               |

**Table C-43: IDR EMC and Radio Standards Compliance**

| Parameter                  | Value   |
|----------------------------|---|
| Radio Standards Compliance | <ul style="list-style-type: none"> <li>• ETSI EN 300 328-1</li> <li>• ETSI EN 301 253</li> <li>• FCC part 15</li> <li>• RSS139</li> <li>• Telec</li> </ul>                        |
| EMC                        | <ul style="list-style-type: none"> <li>• ETSI ETS 300 826</li> <li>• ETSI EN 300 385</li> <li>• ETSI EN 300 386-2</li> <li>• ETSI ETS 300 132-2</li> <li>• FCC part 15</li> </ul> |

**Table C-44: IDR Agency Certification**

| Parameter            | Value   |
|----------------------|---|
| Emissions / Immunity | <ul style="list-style-type: none"> <li>• FCC Class B</li> <li>• ARIB-STD-T66</li> <li>• ETSI 300 386-2</li> </ul> |
| Safety               | EN/IEC 60950  |
| Environmental        | ETS 300 019-2-x   |

**Table C-45: IDR Network Specifications**

| Parameter       | Value             | Comment     |
|-----------------|-------------------|-------------|
| Filtering rate  | 10,500 frames/sec | At 64 bytes |
| Forwarding rate | 1,300 frames/sec  | At 64 bytes |

**Table C-46: IDR Power Requirements**

| Parameter                     | Value   |
|-------------------------------|---|
| External Power Supply Voltage | <ul style="list-style-type: none"> <li>• Minimum: 100 VAC</li> <li>• Maximum: 240VAC</li> </ul> |
| Operating Frequency Range     | 50 to 60 Hz   |
| Maximum Power consumption     | Less than 15W   |

**Table C-47: IDR Environmental Considerations**

| Parameter             | Value      | Comment          |
|-----------------------|------------|------------------|
| Operating temperature | 0-50°C     |                  |
| Operating Humidity    | +30C° 93%  | Maximum humidity |
| Storage temperature   | -40 – 70°C |                  |

**Table C-48: IDR Network Interface**

| Parameter            | Value   | Comment    |
|----------------------|---|------------|
| Ethernet Network     | UTP EIA / TIA   | Category 5 |
| Standards Compliance | ANSI/IEEE 802.3 and ISO/IEC 8802-3 10Base-T compliant |            |
| Serial Port          | RJ-11   |            |

**Table C-49: IDR Physical Dimensions**

| Parameter              | Value  | Comment   |
|------------------------|--|---|
| Weight                 | 1,430 g  |   |
| Dimensions (H x W x D) | <ul style="list-style-type: none"> <li>• 155 mm (6.1 inches) x 233 mm (9.17 inches) x 74.5 mm (2.93 inches)</li> <li>• 120.5 mm (4.74 inches) x 61mm (2.4 inches) x 35 mm (1.37 inches)</li> </ul> | <ul style="list-style-type: none"> <li>• IDR with built-in antenna</li> <li>• IDR with an external antenna</li> </ul> <p>Note: Dimensions exclude the external power adapter.</p> |

**Table C-8: IDR Pole Mounting Dimensions**

| Parameter             | Value               |
|-----------------------|---------------------|
| Minimum pole diameter | 35 mm (1.37 inches) |
| Maximum pole diameter | 50 mm (1.97 inches) |