

# WV-X86531-Z2-1

4 x 5MP Outdoor Multi-directional + 2MP(1080p) 21x PTZ Network Camera with AI Engine

## Multi-directional + PTZ Camera with AI Engine

\*Outdoor model only, As of February 2023, based on i-PRO own research



- 4 x 5MP multi-directional camera + 2MP 21x PTZ camera
- Discreet design
- Up to 6 Edge AI analytic apps
- AI auto tracking
- No calibration required
- Pan/Tilt speed up to 500 deg/s
- IP66, IP67, IK10 rated
- Built-in FIPS 140-2 Level 3 certified SecureElement
- NDAA compliant

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# SPECIFICATIONS

| Camera                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Image Sensor                                    | <Multi Part> 4x 1/2.7 type CMOS image sensor<br><PTZ Part> 1/2.8 type CMOS image sensor                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Minimum Illumination                            | <Multi Part><br>Color : 0.12 lx (30IRE, F2.0, 1/30 s)<br>Color : 0.17 lx (50IRE, F2.0, 1/30 s)<br>BW : 0.10 lx (50IRE, F2.0, 1/30 s)<br><PTZ Part><br>Color : 0.011 lx (30IRE, F1.6, 1/30 s)<br>Color : 0.015 lx (50IRE, F1.6, 1/30 s)<br>BW : 0.006 lx (50IRE, F1.6, 1/30 s)                                                                                                                                                                                                                                                                                                                                        |
| White Balance                                   | ATW1/ ATW2/ AWC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Maximum shutter                                 | <Multi Part><br>15 fps mode: Max.1/10000s to Max.16/30s<br><PTZ Part><br>60 fps mode: Max.1/4000s to Max.16/30s<br>30 fps mode: Max.1/4000s to Max.16/30s<br>15 fps mode: Max.1/4000s to Max.16/30s                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Intelligent Auto                                | On / Off                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Super Dynamic                                   | <Multi Part> On / Off,<br>The level can be set in the range of 0 to 31.<br><PTZ Part> On / Off,<br>The level can be set in the range of 0 to 31.*1                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Dynamic Range                                   | <Multi Part> 108 dB max. (Super Dynamic: On, Level: 31)<br><PTZ Part> 144 dB max. (Super Dynamic: On, Level: 31)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Adaptive Black Stretch                          | The level can be set in the range of 0 to 255.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Back Light Compensation/High Light Compensation | BLC (Back light compensation) / HLC (High light compensation) / Off<br>(only when Super dynamic / Intelligent Auto : Off)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Fog Compensation                                | On / Off (only when Intelligent auto / auto contrast adjust : Off)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Maximum Gain (AGC)                              | The level can be set in the range of 0 to 11.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Color/BW (ICR)                                  | Off / On / Auto1(Normal) / Auto2(IR Light) / Auto3(SCC)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| IR LED Light                                    | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Digital Noise Reduction                         | The level can be set in the range of 0 to 255.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Panorama                                        | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Video Motion Detection (VMD)                    | On / Off, 4 areas available                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Scene Change Detection (SCD)                    | On / Off, 1 areas available                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Audio Detection                                 | On/Off                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| AI Sound Classification                         | Selectable from Gunshot, Yell, Vehicle horn, Glass break                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| AI Analytics                                    | AI Video Motion Detection, AI Privacy Guard, AI Face Detection,<br>AI People Detection, AI Vehicle Detection,<br>AI Non mask Detection, AI Occupancy Detection, AI Scene Change Detection<br><br>For details<br><a href="https://i-pro.com/global/en/surveillance/products/i-pro-ai-application">https://i-pro.com/global/en/surveillance/products/i-pro-ai-application</a><br>3rd party applications are also available.<br><a href="https://i-pro.com/global/en/surveillance/i-pro-application-platform/application-list">https://i-pro.com/global/en/surveillance/i-pro-application-platform/application-list</a> |
| Privacy Zone                                    | <Multi Part> On / Off, Up to 8 zones available<br><PTZ Part> On / Off, Up to 32 zones available                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

|                    |                                                                                                |
|--------------------|------------------------------------------------------------------------------------------------|
| VIQS               | <Multi Part> On / Off, Up to 8 zones available<br><PTZ Part> On / Off, Up to 8 zones available |
| Image Rotation     | Upside-down: On/Off                                                                            |
| Camera Title (OSD) | On/ Off,<br>Up to 40 characters, Up to 2 Lines (alphanumeric characters, marks)                |
| Focus Adjustment   | <Multi Part> -<br><PTZ Part> Auto focus                                                        |

### Lens

|                        |                                                                                                                                   |
|------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| Optical zoom           | <Multi Part> 1x<br><PTZ Part> 21x (Motorized zoom / Motorized focus)                                                              |
| Extra zoom             | <Multi Part> max 4.0x (when resolution is 640x360)<br><PTZ Part> max 31x (when resolution is 1280x720)                            |
| Focal length           | <Multi Part> 3.2mm<br><PTZ Part> 4.0mm - 84.6mm {5/32inches - 3-11/32 inches}                                                     |
| Angular Field of View  | <Multi Part><br>Horizontal : 97 deg.<br>Vertical : 71 deg.<br><PTZ Part><br>Horizontal : 3.7 ° to 77 °<br>Vertical : 2.2 ° to 44° |
| Maximum Aperture Ratio | <Multi Part> 2<br><PTZ Part> 1 : 1.6 (WIDE) to 1 : 4.5 (TELE)                                                                     |
| Focus range            | <Multi Part> 1 m {3.28 ft} to ∞<br><PTZ Part> 1.5 m {59-1/16 inches} to ∞                                                         |

### DORI

|                            |                                                                                                  |
|----------------------------|--------------------------------------------------------------------------------------------------|
| Detect (25ppm / 8ppf)      | <Multi Part> 45.3 m / 148.6 ft<br><PTZ Part> Wide: 48.3 m / 158.4 ft, Tele: 1188.9 m / 3900.5 ft |
| Observe (62.5ppm / 19ppf)  | <Multi Part> 18.1 m / 59.4 ft<br><PTZ Part> Wide: 19.3 m / 63.4 ft, Tele:475.5 m / 1560.2 ft     |
| Recognize (125ppm / 38ppf) | <Multi Part> 9.1 m / 29.7 ft<br><PTZ Part> Wide: 9.7 m / 31.7 ft, Tele: 237.8 m / 780.1 ft       |
| Identify (250ppm / 76ppf)  | <Multi Part> 4.5 m / 14.9 ft<br><PTZ Part> Wide: 4.8 m / 15.8 ft, Tele: 118.9 m / 390.0 ft       |

### System on Chip (SoC)

|                      |                                                          |
|----------------------|----------------------------------------------------------|
| System on Chip (SoC) | <Multi Part> Ambarella CV2<br><PTZ Part> Ambarella CV25m |
|----------------------|----------------------------------------------------------|

### Adjusting Angle

|                 |                                                                                                                                                                     |
|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Adjusting Angle | <Multi Part> Camera 1, 2, 3, 4:Vertical: 40±7° (Adjust by vertical (TILT) angle)<br><PTZ Part> Horizontal : 360° Endless Panning / Vertical : -15 to +195°/Yaw : 0° |
|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|

### Pan /tilt

|                  |                                                                              |
|------------------|------------------------------------------------------------------------------|
| Panning Range    | 360 °Endless panning                                                         |
| Panning Speed    | Manual : 0.065 °/s - 150°/s<br>Preset : Up to 500 °/s                        |
| Tilting Range    | Operational -15 - +195°                                                      |
| Tilting Speed    | Manual : 0.065 °/s - 150°/s<br>Preset : Up to 500 °/s                        |
| Preset Positions | 256 positions                                                                |
| Auto Mode        | Auto track / Auto pan/ Preset sequence/ Patrol                               |
| Self Return      | 10 s/ 20 s/ 30 s/ 1 min/ 2 min/ 3 min/ 5 min/ 10 min/ 20 min/ 30 min/ 60 min |

### Browser GUI

|                |                          |
|----------------|--------------------------|
| Camera Control | Brightness, AUX On / Off |
|----------------|--------------------------|

|                           |                                                                                                                                              |
|---------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| Audio                     | Mic (Line) Input : On / Off<br>Volume adjustment : Low / Middle / High<br>Audio Output : On / Off<br>Volume adjustment : Low / Middle / High |
| GUI / Setup Menu Language | English, Italian, French, German, Spanish, Portuguese, Russian, Chinese, Japanese                                                            |
| Browser                   | Microsoft Edge, Firefox, Google Chrome                                                                                                       |

### Network

|                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|---------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Network IF                            | 10 BASE-T/100 BASE-T/1000 BASE-T, RJ45 connector                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Resolution H.265/ H.264/ JPEG (MJPEG) | <Multi Part><br>[4:3] (15fps mode)/[4:3] (12.5fps mode)<br>3072 x 2304*2, 2560x1920, 1280 x 960, VGA, QVGA<br>[4:3] (15fps Quad mode)/[4:3] (12.5fps Quad mode)<br>3072 x 2304*2, 2560x1920, 1280 x 960, VGA<br>[16:9] (15fps mode) / [16:9] (12.5fps mode)<br>3072 x 1728*2, 2560x1440, 1920 x 1080, 1280 x 720, 640x360, 320x180<br>[16:9] (15fps Quad mode)/[16:9] (12.5fps Quad mode)<br>3072 x 1728*2, 2560x1440, 1920 x 1080, 1280 x 720, 640x360<br><PTZ Part><br>[16:9 mode (60 fps mode) ] [16:9 mode (30 fps mode) ] [16:9 mode (50 fps mode) ] [16:9 mode (25 fps mode) ]<br>1920x1080, 1280x720, 640x360, 320x180<br>[4:3 mode (30 fps mode) ] [4:3 mode (25 fps mode) ]<br>1280x960, VGA, QVGA<br>[4:3 mode (15 fps mode) ] [4:3 mode (12.5 fps mode) ]<br>2048x1536*2, 1280x960, VGA, QVGA |
| H.265/H.264                           | [Transmission Mode]<br>Constant bit rate / VBR / Frame rate / Best effort<br>[Transmission Type]<br>Unicast port (AUTO) / Unicast port (MANUAL) / Multicast                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| JPEG                                  | [Image Quality]<br>10 steps                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Smart Coding                          | GOP (Group of pictures) control : On (Frame rate control)* / On (Advanced)* / On (Mid) / On (Low) / Off<br>*On (Frame rate control) and On (Advanced) are only available with H.265.<br>Smart VQS: On(High)/On(Low)/Off, Smart P-picture control: On/Off                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Audio Compression                     | G.726 (ADPCM) 32 kbps/16 kbps,<br>G.711 64 kbps,<br>AAC-LC 64kbps/96kbps/128kbps*3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Audio Transmission Mode               | Off / Mic (Line) input / Audio output / Interactive (Half duplex) / Interactive (Full duplex)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Supported Protocol                    | IPv6 : TCP/IP, UDP/IP, HTTP, HTTPS, SSL/TLS, SMTP, DNS, NTP, SNMPv1/v2/v3, DHCPv6, RTP, MLD, ICMP, ARP, IEEE 802.1X <Control No.: C0141> *4, DiffServ, LLDP, MQTT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| No. of Simultaneous Users             | <Multi Part><br>24 (Number of sessions that can connect to cameras at the same time)<br>* Depends on network conditions<br><PTZ Part><br>14 (Number of sessions that can connect to cameras at the same time)<br>* Depends on network conditions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Secure                                | FIPS 140-2 level 3 (NXP® EdgeLock® SE050F),<br>Device Certificate GlobalSign® pre-installed, User authentication,<br>Host authentication, HTTPS, 802.1X Support <Control No.: C0141> *4, Alteration Detection                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| SDXC/SDHC/SD Memory Card              | microSDXC memory card : 64 GB, 128 GB, 256 GB, 512 GB<br>microSDHC memory card : 4 GB, 8 GB, 16 GB, 32 GB<br>microSD memory card : 2 GB                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Mobile Terminal Compatibility         | iPad / iPhone (iOS 8.0 or later), Android™ terminals                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| ONVIF® Profile                        | G / M / S / T                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |

### Alarm

|               |                                                                                                                                     |
|---------------|-------------------------------------------------------------------------------------------------------------------------------------|
| Alarm Source  | 3 terminals input, VMD alarm, SCD alarm, Command alarm, Audio detection alarm                                                       |
| Alarm Actions | SDXC/SDHC/SD memory recording, E-mail notification,<br>HTTP alarm notification Indication on browser, TCP alarm notification output |

| Input/Output                    |                                                                                                                                                                                                                                                                                                                  |
|---------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Monitor Output (for Adjustment) | —                                                                                                                                                                                                                                                                                                                |
| Audio input *5                  | ø3.5 mm stereo mini jack<br>For microphone input :<br>Recommended applicable microphone : Plug-in power type (Sensitivity of microphone :<br>-51 dB~-38dB (0 dB=1 V/Pa, 1 kHz))<br>Input impedance : Approx. 2 kΩ (unbalanced)<br>Supply voltage : 2.5 V ±0.5 V<br>For line input : Input level: Approx. -10 dBV |
| Audio Output *5                 | ø3.5 mm stereo mini jack (Audio output is monaural.)<br>Output impedance: Approx. 600 Ω (unbalanced)<br>Output level: -20 dBV                                                                                                                                                                                    |
| External I/O Terminals *5       | ALARM IN 1 (Alarm input 1/ Black & white input/ Auto time adjustment input) (x1)<br>ALARM IN 2 (Alarm input 2/ ALARM OUT) (x1)<br>ALARM IN 3 (Alarm input 3/ AUX OUT) (x1)                                                                                                                                       |

| General                            |                                                                                                                                                                 |
|------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Safety                             | UL (UL62368-1), c-UL (CSA C22.2 No.62368-1), CE, IEC62368-1                                                                                                     |
| EMC                                | FCC (Part15 ClassA), ICES-003 ClassA, EN55032 ClassA, EN55024                                                                                                   |
| Power Source and Power Consumption | PoE++ (IEEE802.3bt compliant):<br>DC 54 V : 0.66A/Approx. 35.6 W (Class 5 device)                                                                               |
| Ambient Operating Temperature      | -40 °C to +55 °C {-40 °F to 131 °F}<br>(Power On range: -20 °C to +55 °C {-4 °F to 131°F})<br>Maximum temperature according to NEMA TS 2 (2.2.7) : 74°C (165°F) |
| Ambient Operating Humidity         | 10 % to 100 % (no condensation)                                                                                                                                 |
| Anti-Condensation System           | Temish element                                                                                                                                                  |
| Water and Dust Resistance          | IP67/IP66 (IEC 60529), Type 4X (UL50E), NEMA 4X compliant                                                                                                       |
| Shock Resistance                   | IK10 (IEC 62262)                                                                                                                                                |
| Other standard support             | NEMA TS 2 (2.2.7-2.2.9)                                                                                                                                         |
| Dimensions                         | ø250 mm x 195 mm (H)                                                                                                                                            |
| Mass (approx.)                     | Approx. 3.8 kg                                                                                                                                                  |
| Finish                             | Main body: Aluminum die cast, Black<br>Outer fixing screws: Stainless steel (Corrosion-resistant treatment)<br>Dome cover: PC resin, Clear                      |

## NOTES

\*1 When 60 fps or 50 fps is selected, the Super Dynamic function is automatically set to off.

\*2 Used by super resolution techniques.

\*3 When recording audio on a micro SD memory card, only use AAC-LC (Advanced Audio Coding - Low Complexity).

\*4 "<Control No.: C\*\*\*>" used in this document should be used to search for information on our technical information website (<https://i-pro.com/global/en/surveillance/training-support/support/technical-information>) and will guide you to the right information.

\*5 When using with them, WV-QCA501A cable is required.

### Important

– Safety Precautions : Carefully read the Basic Information, Installation Guide and Operating Instructions before using this product.  
 – i-PRO Co., Ltd. cannot be held responsible for the performance of the network and/or other manufacturers' products used on the network.

– Masses and dimensions are approximate.

– Specifications are subject to change without notice.

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# OPTIONAL ACCESSORIES

Select a compatible accessory

[Accessory Selector \(i-pro.com\)](http://i-pro.com)



WV-QDC502G  
Dome Cover



WV-QDC502C  
Dome Cover



WV-QSR508-B  
Mount Bracket



WV-QWL501-B  
Mount Bracket



WV-QPL500-B  
Mount Bracket



WV-QCN500-B  
Mount Bracket



WV-QCL501-B  
Mount Bracket



WV-QSR508F1-B  
Mount Bracket



WV-QCL101-B  
Mount Bracket



WV-QSR508F-B  
Mount Bracket



WV-QCL100-B  
Mount Bracket



WV-QSR508M-B  
Mount Bracket



WV-Q105A  
Mount Bracket



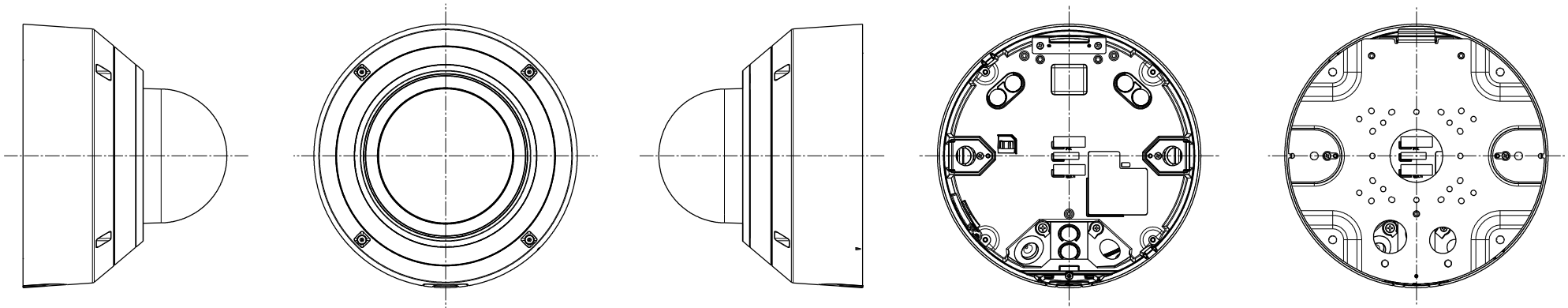
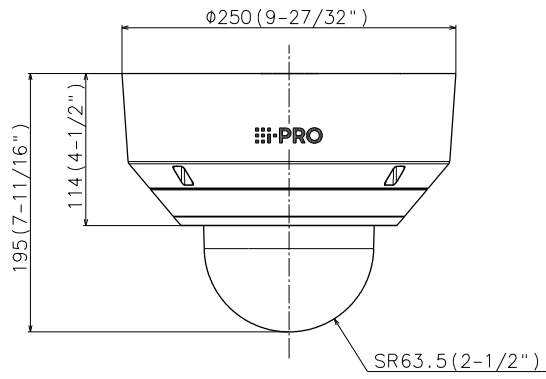
WV-QEM506-B  
Ceiling Mount Bracket



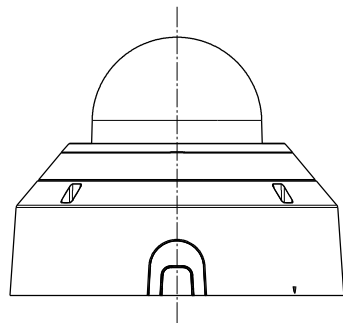
WV-QCA501A  
I/O Cable



WV-QSR508M1-B  
Mount Bracket



With attachment plate



Unit:mm

| 側面図/Side-view | 投影面積/Projected area     |
|---------------|-------------------------|
|               | 0.034 (m <sup>2</sup> ) |

Mass : Approx. 4.0 kg {8.83 lbs} (When using the attachment plate)