

WISENET

ネットワークカメラ

ユーザーマニュアル

PNV-A9081R/PND-A9081RV
PND-A9081RF/PNO-A9081R
PNB-A9001



ネットワークカメラ ユーザーマニュアル

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❖ デフォルトの管理者IDは“admin”です。パスワードは初めてログインするときに設定する必要があります。
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重要な安全ガイド

1. 本書の説明をよく読んで下さい。
2. 本書の指示を守ってください。
3. 全ての警告を留意してください。
4. 全ての指示に従って下さい。
5. 本機を水の傍で使用しないで下さい。
6. 柔らかく乾いた布か湿った布で製品表面の汚れた部分を拭き取ります。(アルコール成分、溶剤、界面活性剤や油分を含む洗剤や化粧品を使用しないでください。製品の変形や損傷につながる恐れがあります。)
7. どの換気孔も塞がないようにして下さい。メーカーの指示に従って取り付けして下さい。
8. ラジエーター、熱レジスタ、あるいは熱を発生するその他の装置（アンプを含む）などの熱源の傍に設置しないで下さい。
9. 分極タイプあるいは接地タイプのプラグの安全目的を必ず守ってください。分極プラグには一方が他方より幅広い2本の足が付いています。接地プラグには2本の足とアース（接地）差込み先が付いています。2本の平たい足あるいは3本めの差込み先はユーザーの安全のために付いています。提供されたプラグがお使いのコンセントに合わない場合には、旧式のコンセントの交換について電気技師にご相談下さい。
10. 特にプラグ、ソケット、機器との接点でコードが踏まれたり引っ張られたりしないよう電源コードを保護してください。
11. メーカーが指定する付属品のみを使用してください。
12. カート、スタンド、三脚、ブラケットはメーカー指定のもの、あるいは製品と一緒に販売されたもののみを使用してください。カートを使用する場合、カートと製品を動かす際には転倒による損傷に注意してください。
13. 雷雨のときまたは長期間使用しない場合は、製品の電源プラグを抜いてください。
14. 全ての修理は資格のあるサービス・スタッフに任せて下さい。修理は電源コードあるいはプラグの損傷、液体をこぼした、または物体を機器内に落としてしまった、機器を雨や湿度にさらしてしまった、正常に機能しない、あるいは機能の低下など、様々な原因で機器が損傷した場合に必要となります。
15. この製品は「2等級」や「LPS」表示があります。そして12Vdc、1.48 AやPoE、0.38 A定格で登録された電源供給デバイスで電源を供給する仕組みです。(PND-A9081RV/RF)
16. この製品は「2等級」や「LPS」表示があります。そして12Vdc、1.56 AやPoE、0.38 A定格で登録された電源供給デバイスで電源を供給する仕組みです。(PNV-A9081R)
17. この製品は「2等級」や「LPS」表示があります。そして12Vdc、1.5 AやPoE、0.4 A定格で登録された電源供給デバイスで電源を供給する仕組みです。(PNO-A9081R)
18. この製品は「2等級」や「LPS」表示があります。そして12Vdc、1.15 AやPoE、0.32 A定格で登録された電源供給デバイスで電源を供給する仕組みです。(PNB-A9001)
19. 本製品接続の外部電源は、絶縁電源を使用してください。
20. 製品取り付け時に力を入れ過ぎると、カメラが損傷し、誤作動を起こす場合があります。適切でないツールを使用して製品を力まかせに取り付けると、カメラが損傷する場合があります。
21. 化学物質やオイルミストが存在する、または生成される可能性のある場所には製品を取り付けしないでください。大豆油のような食用油によって製品が損傷を受けたりゆがんだりするため、キッチンやキッチンテーブル付近には製品を取り付けしないでください。製品に損傷を与える原因となります。



22. 製品を取り付ける場合、製品表面が化学物質で汚染されないように注意してください。クリーナーや接着剤のような化学溶剤は、製品表面に深刻な損傷を与える原因となります。
23. 推奨されない方法で製品を取り付け/取り外した場合、製品の機能/性能は保証できません。ユーザーマニュアルの「取り付けと接続」を参照して製品を取付けます。
24. 水中での製品の取付けや使用は、製品への深刻な損傷の原因となります。
25. 急激な温度変化が発生する場合、ドーム内部に霧が発生することありますが、映像には問題ありません。

警告

火災または感電防止のため、この装置を雨または湿気にさらさないでください。本製品の換気グリルまたはその他の開口部から金属製物質を差し込まないでください。

製品に液体をこぼしたりかけたりせず、また花瓶のように液体が入った物体を製品の上に載せたりしないでください。

損傷を防止するため、本製品を設置説明に従って壁/天井にしっかりと取り付けてください。

注意

	注意 感電の危険がありますので開けないで下さい	
注意: 感電の危険がありますので裏カバーは開けないで下さい。 如何なる場合にも本品の分解や改造を行わないで下さい。 資格のあるサービス・スタッフにお問い合わせ下さい。		

グラフィック記号の説明



正三角形内の稲妻型の矢印は、本製品の筐体に人が感電する恐れのある"高圧電流"が存在することを、ユーザーに警告するものです。



正三角形内の感嘆符は、製品の操作およびメンテナンス(修理)に関する重要な付属説明書があることをユーザーに知らせるものです。

クラス I 構造

クラス I 構造を持つ装置は保護接地接続のある本線ソケットに接続してください。

バッテリー

電源(バッテリーパックまたは取り付けられた状態のバッテリー)は直射日光の当たる場所や、熱器具の近くには置かないでください。

バッテリーは交換できません。

デバイスの切断

問題がある場合は、装置からメインプラグを抜きます。次にお住まいの地域の修理会社に電話してください。

米国外では、認証機関が採用している取付け金具用のHARコードが使用される場合があります。

注意

これらの保守説明書は、資格のあるサービススタッフのみが使用するものです。感電の危険性を低減するために、資格がある場合を除き操作説明書に含まれていない修理は行わないでください。

入力電源は1台のカメラにのみ使用し、他のデバイスを接続しないでください。

ITEは、外部の施設ヘルレーティングなしで、PoEネットワークのみに接続することになります。

次に示す安全のための推奨注意事項を熟読してください。

- 本製品は平らな場所に置いてください。
- 直射日光の当たる場所、暖房設備または低温区域の近くには取付けしないでください。
- 本製品を導電性の高い物体の近くに置かないでください。
- 本製品は自分で修理しないでください。
- 本製品の上に水の入ったコップを置かないでください。
- 磁気源のそばに取付けしないでください。
- 換気口は塞がないようにしてください。
- 本製品の上に重いものを置かないでください。
- カメラを取り付ける/取り外すときは、保護手袋を着用してください。製品表面は高温になるため、やけどの原因となる場合があります。

ユーザーマニュアルは、本製品の使用方法に関するガイドブックです。

このマニュアルで使用する用語の意味を次に示します。

- 参照: 製品の使用方法についてのヘルプ情報を示す場合。
 - 注意: 指示に従わないことで、ものや人に損害が発生する可能性がある場合。
- ※ 製品を使用する前に安全のためこのマニュアルを読み、大切に保管しておいてください。

当社は別途に購入した他社の製品(レンズ、アクセサリ)に対する品質は保証いたしません。

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概要

推奨する PC 仕様

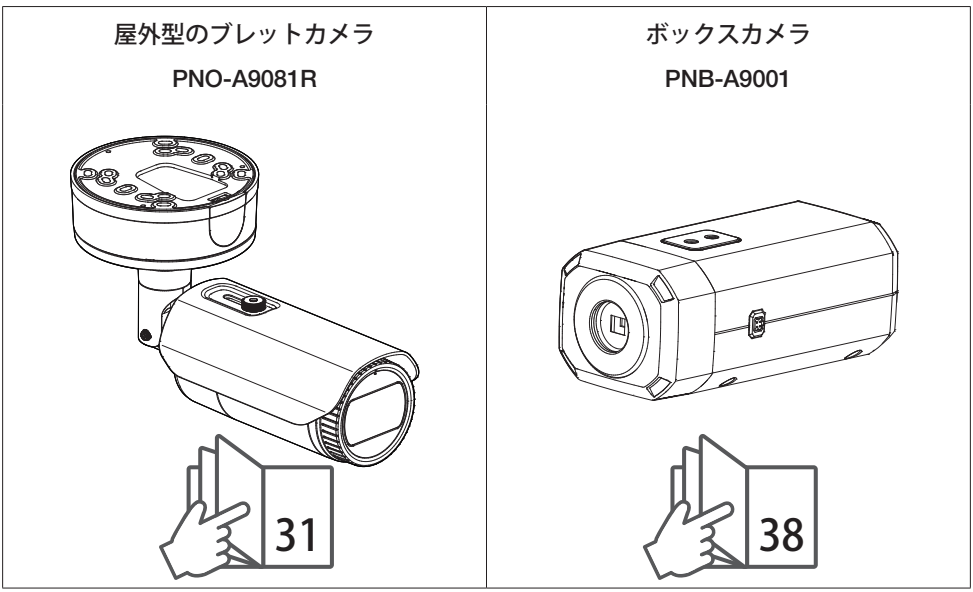
- CPU : Intel(R) Core(TM) i7 3.4 GHz以降
 - RAM : 8GB以上
 - 対応OS : MS Windows 8.1, 10, Mac OS X 10.12, 10.13, 10.14
 - 推奨するブラウザ: Google Chrome
サポートするブラウザ: MS Explorer, MS Edge, Mozilla Firefox (Window 64bitのみ)、Apple Safari (Mac OSXのみ)
- ※ 確認済みのOSとブラウザに関する詳細情報は、付録を参照してください。

推奨マイクロSD/SDHC/SDXCメモ리카ード仕様

- 推奨容量 : 推奨容量: 16GB~256GB(MLCタイプ必須)
- 推奨製造会社: SanDisk, Transcend
- 製品群: High endurance
- カードの製造会社別/タイプ別の互換性は異なる場合があります。

NAS推奨仕様

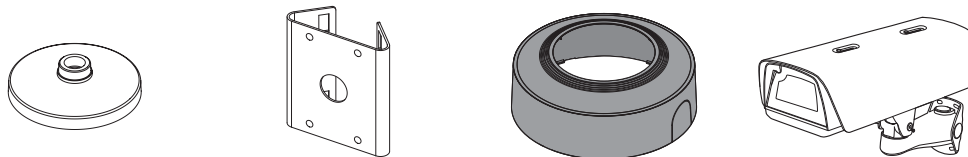
- 推奨容量 : 200GB又はそれ以上を推奨します。
- このカメラのために、NASを以下の製造仕様で利用することを推奨します。
推奨製品 : QNAP NAS, Synology NAS



概要

設置のためのオプション付属品

設置場所によって下記の別売り品を購入して設置すると、便利です。

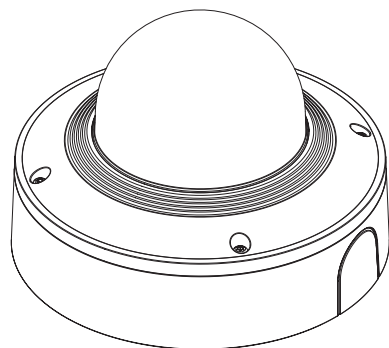


型名	ハンギングマウント	ポールマウント	スキンカバー	ハウジング	共通
PNV-A9081R	SBP-187HMW		SBC-180B (黒)		SBP-300LMW (パラペット型マウント) SBP-300CMW (シーリングマウント) SBP-300WMW (壁マウント) SBP-300WMW1 (壁マウント) SBP-300NBW (設置用ボックス) SBP-300NBW (壁マウントベース) SBP-300PMW (ポール型マウント) SBP-300KMW (コーナー型マウント)
PND-A9081RV	SBP-167HMW		SBC-160B (黒)		
PNO-A9081R		SBP-302PM			
PNB-A9001				SHB-4300HP	

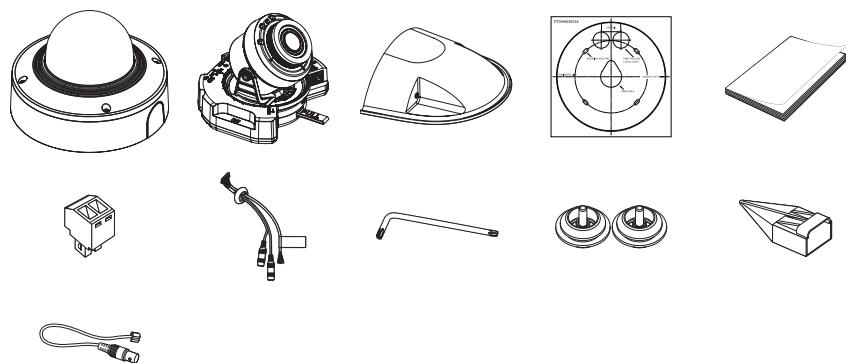
屋外型のブレットカメラ

キット内容

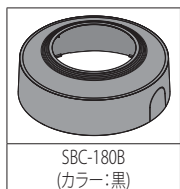
販売国ごとに付属品が異なるため。



<PNV-A9081R>

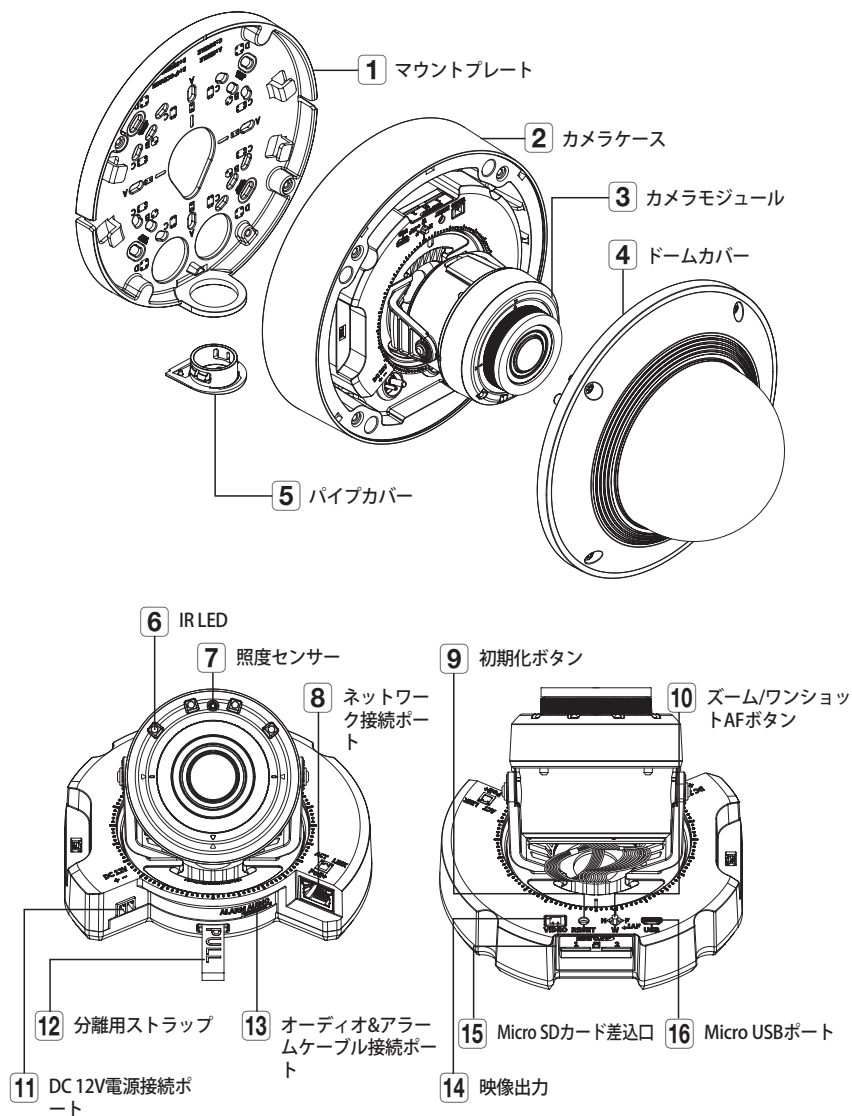


オプション(含まれない)



SBC-180B
(カラー:黒)

概観



屋外半月型のドームカメラ

取付け

- !** ■ 本カメラは防水であり、IP67/IP6K9K仕様に準拠していますが、外部ケーブルに接続されるジャックはそうではありません。ケーブルが外部に突出するのを防止するために軒先の下に本製品をインストールすることをお勧めします。

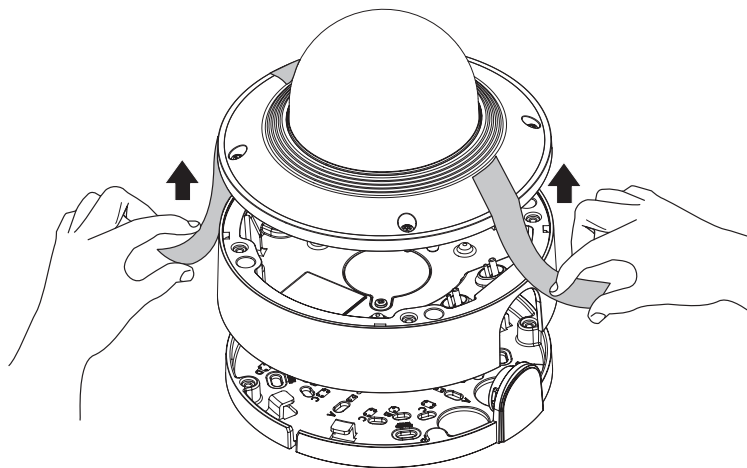
取付けに関する注意事項

カメラを取り付ける前に、以下の指示をよく読んでください。

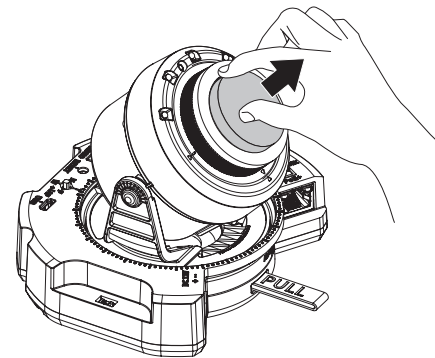
- カメラの重量の5倍以上の重さを固定できる取付け場所を選んでください。
- 引っかかっていたり、はがれたケーブルは製品の損傷または火災の原因となります。
- 安全のため、設置場所に人を近づけないでください。
また、万が一のため持ち物は取付け場所には置かないでください。
- 過剰な力で製品を取り付けると、故障によりカメラが損傷する場合があります。不適切なツールを使用し無理やり組み立てると、製品が損傷する場合があります。

分離する

1. カメラケースを固定するテープを外してください。

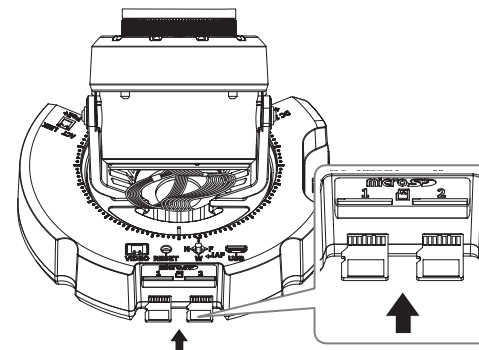


2. カメラレンズ保護用のクッションを取り外してください。



マイクロSDメモ리카ードの挿入

カメラモジュールのMicro SD差込口にMicro SDカードを矢印の方向に押し込んでください。

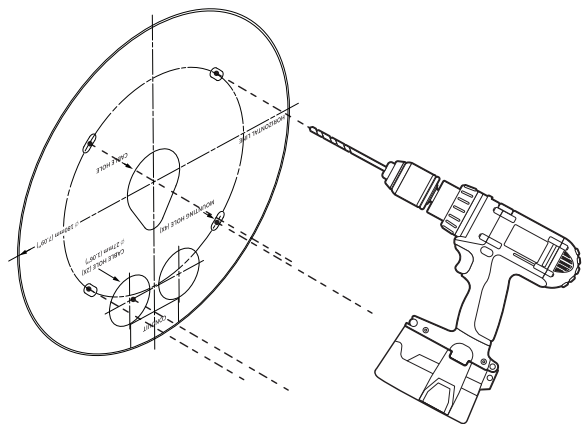


- !**
- カメラを設置する前に電源と本体を分離した状態でMicro SDメモ리카ードを入れてください。
 - 逆方向で無理に挿入しないでください。Micro SDメモ리카ードと製品が破損するおそれがあります。
 - 雨あるいは高湿度の状態でMicroSDカードを挿入したり取り出したりすることは推奨されません。
 - Micro SDメモ리카ードを搭載/除去するときには、部品流失&落下事故を防止するために必ず製品本体を平地においてから作業してください。

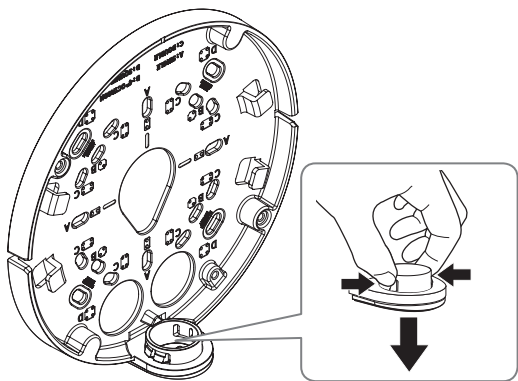
屋外半月型のドームカメラ

[パイプを接続して設置]

2-1. 好きな場所に設置用のテンプレートを付着してネジホールとケーブルホールを開けてください。



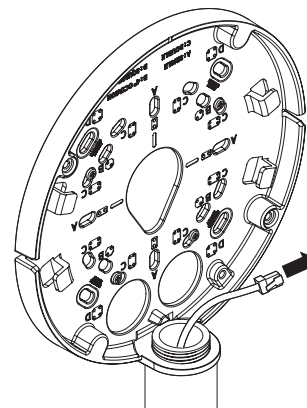
2-2. マウントプレートのパイプカバーを左右に押して分離してください。



2-3. パイプをマウントプレートに据え置きしてください。

2-4. 適切なネジを使ってマウントプレートを固定してください。

2-5. LAN/電源/オーディオ&アラームケーブルのうち、必要なケーブルをパイプから取り出してください。



設置する(カメラケース)

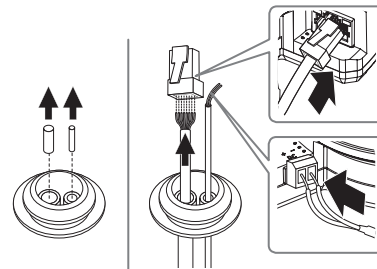
- 接続するLANケーブルの規格に合うケーブルブッシュを使用してください。
 - カメラ初期値：直径05-6.5ケーブル使用。
 - 提供構成品：直径05-8.5ケーブル使用。

[LAN/電源ケーブル設置]

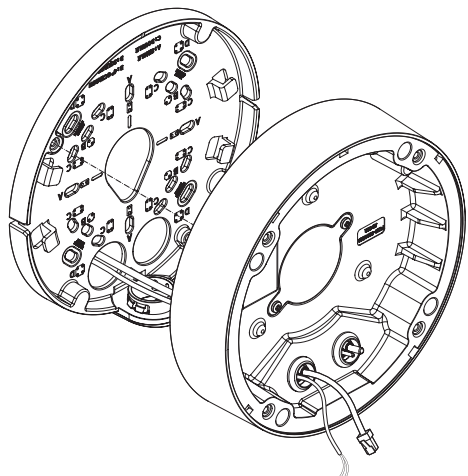
1-1. 使用するブッシュの突出部をはがしてください。

1-2. LANケーブルをブッシュの大きいホールで通過させ、LANコネクタを接続させてください。

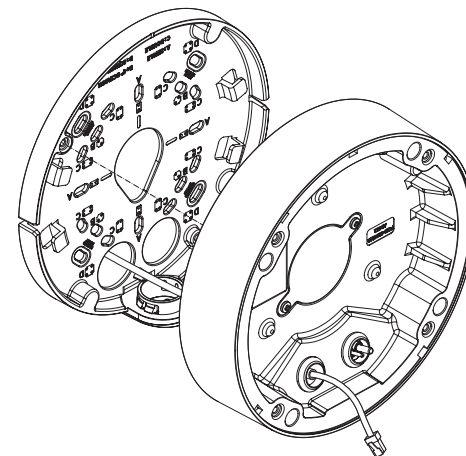
1-3. (電源使用時)電源ケーブルをブッシュの小さいホールで通過させ、提供されたターミナルブロックと接続させてください。



1-4. プッシュをカメラケースにはめてください。



2-3. プッシュをカメラケースにはめてください。

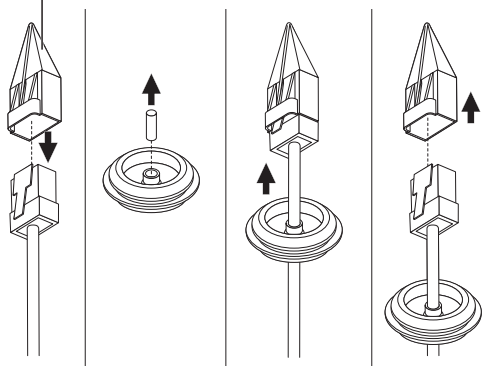


[LANケーブル設置](IP66)

2-1. 提供された1ホールプッシュの突出部をはがしてください。

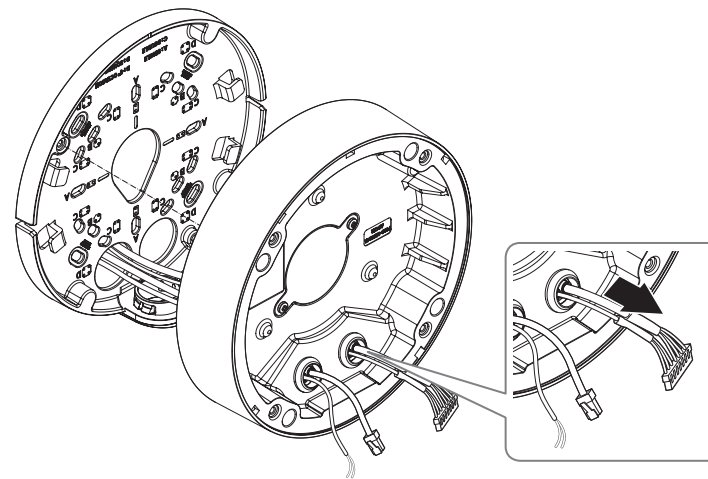
2-2. キャップインストローラーを使用してRJ45ケーブルを通過させてください。

キャップイン ストローラー



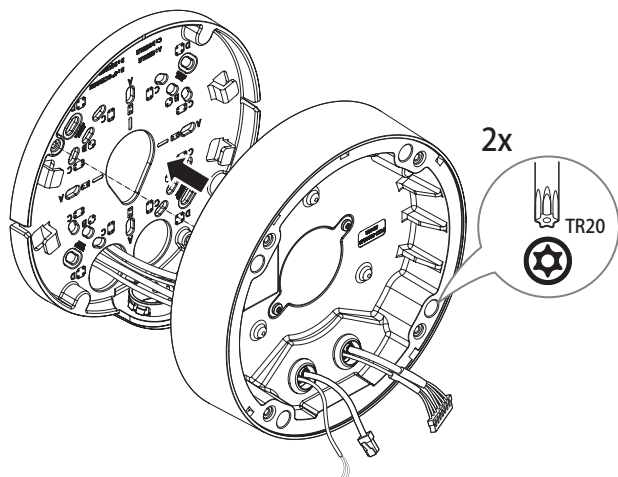
[オーディオ&アラームケーブル設置]

3-1. 提供されたオーディオ&アラームケーブルのプッシュをカメラケースにはめてください。



屋外半月型のドームカメラ

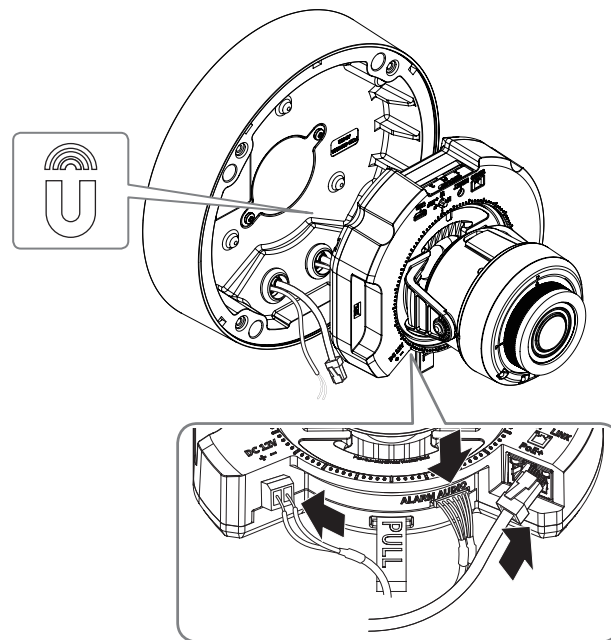
4. マウントプレートとカメラケースを結合させてください。



カメラモジュール装着

1. カメラモジュールポートにLAN/電源/オーディオ&アラームケーブルを接続させてください。
2. カメラモジュールをケースに付着させてください。

- !
- モジュール底面にマグネットが内蔵されています。
 - 付着面の間に汚れが付かないようにご注意ください。



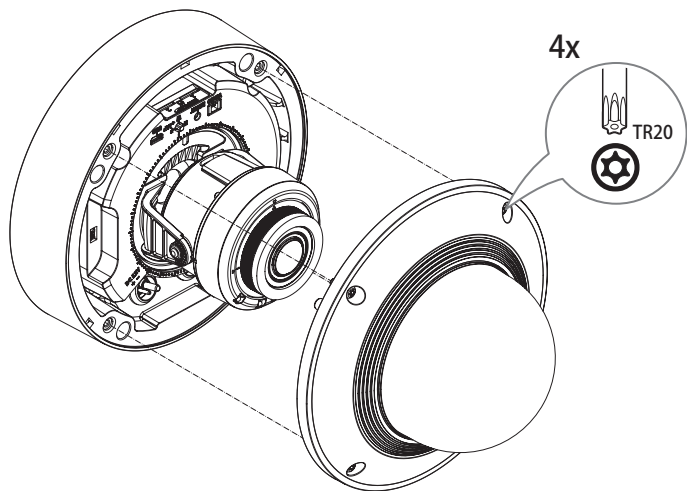
3. 「カメラの監視方向の調整」を参考してレンズを好きな方向に調整してください。(41ページ)

ドームカバーの組み立て

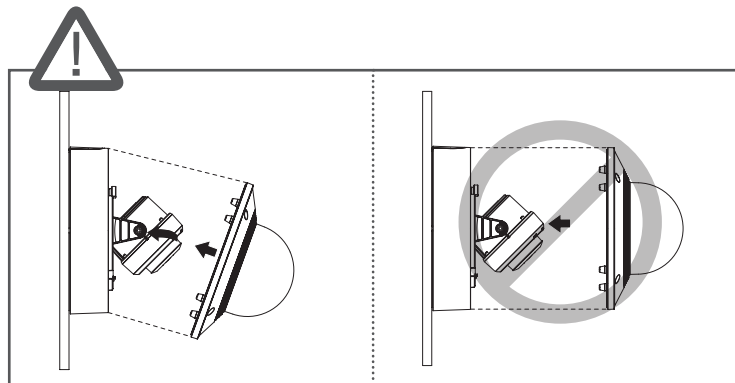
[壁/天井に直接設置]

1. ドームカバーを組み立ててください。

- ❗ 締結用のネジは、防水に問題がないようにしっかり締結させてください。

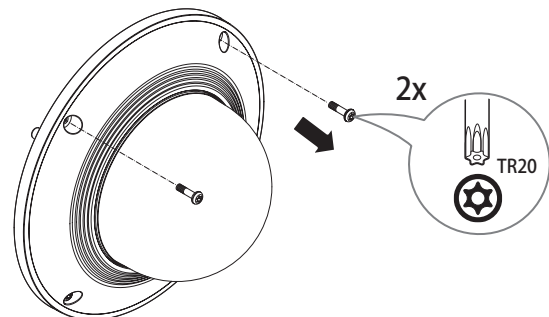


- ❗ カメラの監視方向が動かないようにご注意ください。



[ウエザーキャップを使用する場合]

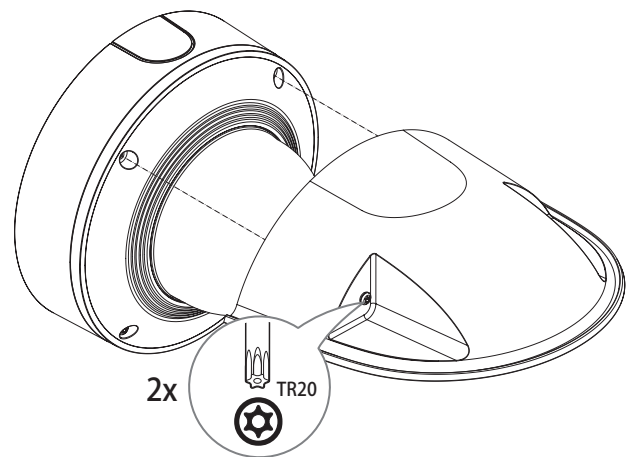
1. ドームカバーのネジを外してください。



2. ドームカバーを組み立ててください。

3. ウエザーキャップをドームカバーに装着した後、ネジを締結させてください。

- ❗ 締結用のネジは、防水に問題がないようにしっかり締結させてください。

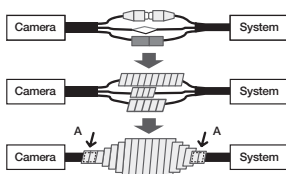


屋外半月型のドームカメラ

屋外設置

建物外部に設置時、外部にて接続するケーブルの隙間に水漏れの心配がありますので、次のように市販されている防水ブチルゴムテープにて防水処理をしてください。

1. 電源、I/O、およびLANケーブルを接続します。
2. 黒いケーブルジャケット（A部）を含むケーブル接続部までブチルゴムテープの半分以上が重なるように防水テープを巻いてください。

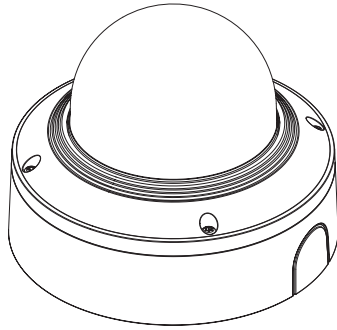


- 接続したケーブルジャケット部分の防水処理が不十分な場合、直接的な水漏れ原因になるため特にしっかりとテーピングをしてください。
- 防水用ブチルゴムテープは本来の長さの2倍以上伸びるブチルゴム素材です。

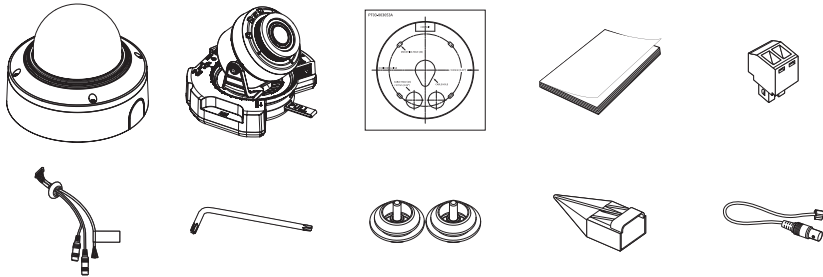
屋内型のドームカメラ

キット内容

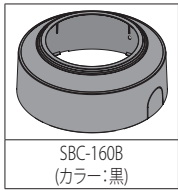
販売国ごとに付属品が異なるため。



<PND-A9081RV>

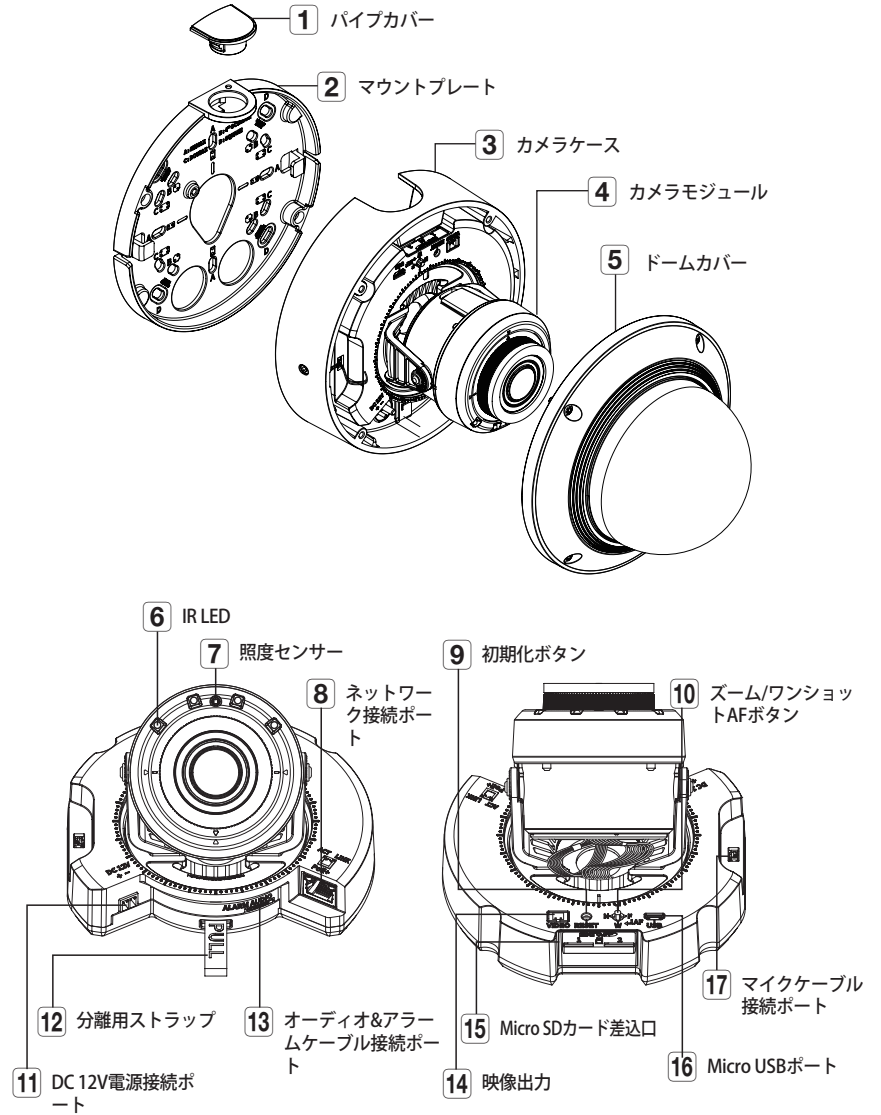


オプション(含まれない)



SBC-160B
(カラー:黒)

概観



屋内型のドームカメラ

取付け

- !** ■ 本カメラは防水であり、IP52仕様に準拠していますが、外部ケーブルに接続されるジャックはそうではありません。ケーブルが外部に突出するのを防止するために軒先の下に本製品をインストールすることをお勧めします。

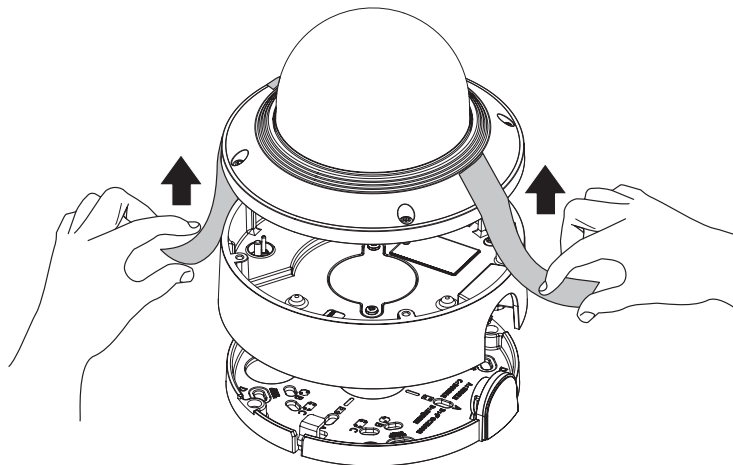
取付けに関する注意事項

カメラを取り付ける前に、以下の指示をよく読んでください。

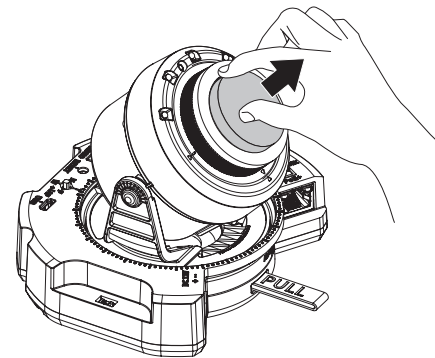
- カメラの重量の5倍以上の重さを固定できる取付け場所を選んでください。
- 引っかかっていたり、はがれたケーブルは製品の損傷または火災の原因となります。
- 安全のため、設置場所に人を近づけないでください。
また、万が一のため持ち物は取付け場所には置かないでください。
- 過剰な力で製品を取り付けると、故障によりカメラが損傷する場合があります。不適切なツールを使用し無理やり組み立てると、製品が損傷する場合があります。

分離する

1. カメラケースを固定するテープを外してください。

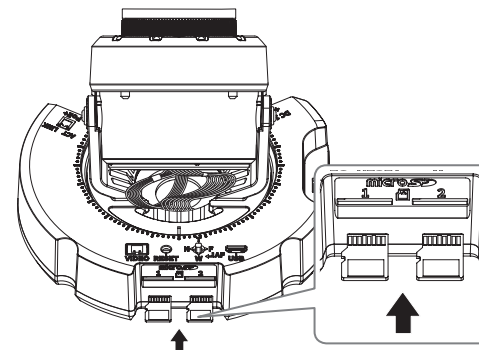


2. カメラレンズ保護用のクッションを取り外してください。



マイクロSDメモ리카ードの挿入

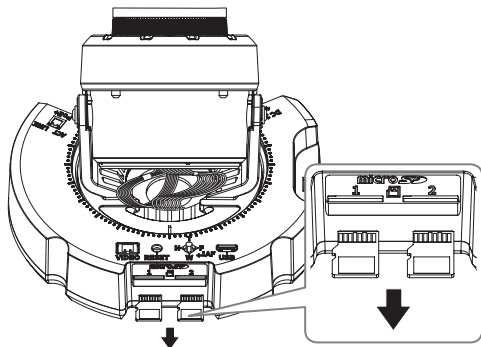
カメラモジュールのMicro SD差込口にMicro SDカードを矢印の方向に押し込んでください。



- !**
- カメラを設置する前に電源と本体を分離した状態でMicro SDメモ리카ードを入れてください。
 - 逆方向で無理に挿入しないでください。Micro SDメモ리카ードと製品が破損するおそれがあります。
 - 雨あるいは高湿度の状態ではMicroSDカードを挿入したり取り出したりすることは推奨されません。
 - Micro SDメモ리카ードを搭載/除去するときには、部品流失&落下事故を防止するために必ず製品本体を平地においてから作業してください。

マイクロSDメモリーカードの取出し

図に示されているように、メモリーカードの露出部分を慎重に押して、スロットからメモリーカードを取り出します。

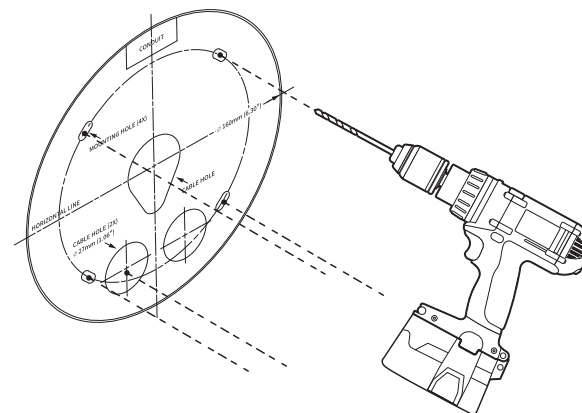


- ❗ ■ MicroSDメモリーカードを取り外す前に、<ストレージ>でデバイスを<Off>に設定し、[適用] ボタンを押してカメラをオフにします。
- カメラのスイッチを切るか、データの入っているマイクロSDメモリーカードを製品から抜くと、データが失われるか、または損傷を受ける場合があります。

設置する(マウントプレート)

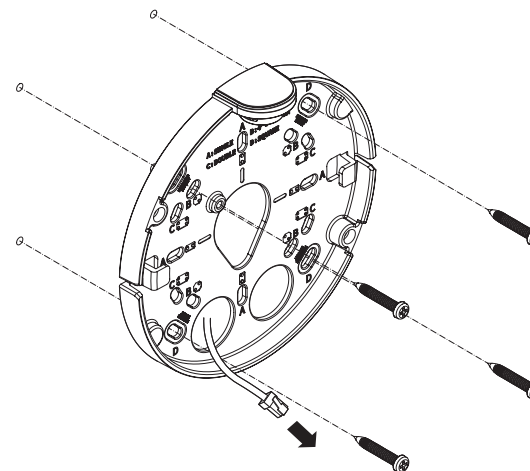
[壁/天井に直接設置]

1-1. 好きな場所に設置用のテンプレートを付着してネジホールとケーブルホールを開けてください。



1-2. 適切なネジを使ってマウントプレートを固定してください。

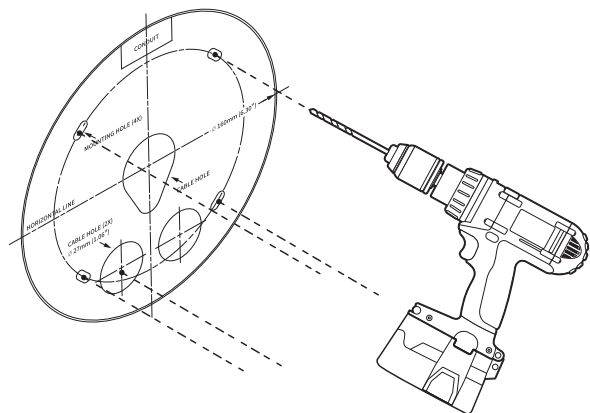
1-3. LAN/電源/オーディオ&アラームケーブルのうち、必要なケーブルをマウントプレートの穴に取り出してください。



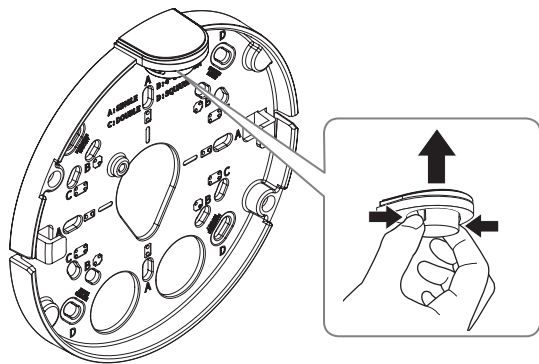
屋内型のドームカメラ

[パイプを接続して設置]

2-1. 好きな場所に設置用のテンプレートを付着してネジホールとケーブルホールを開けてください。



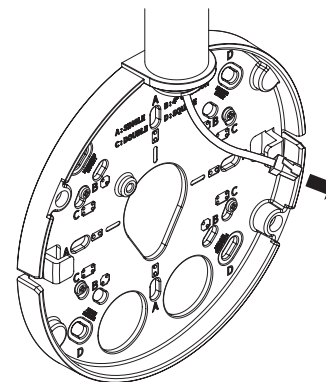
2-2. マウントプレートのパイプカバーを左右に押して分離してください。



2-3. パイプをマウントプレートに据え置きしてください。

2-4. 適切なネジを使ってマウントプレートを固定してください。

2-5. LAN/電源/オーディオ&アラームケーブルのうち、必要なケーブルをパイプから取り出してください。



設置する(カメラケース)

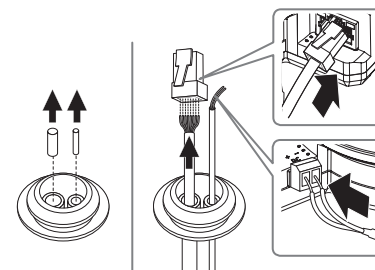
- ! 接続するLANケーブルの規格に合うケーブルブッシュを使用してください。
 - カメラ初期値：直径05-6.5ケーブル使用。
 - 提供構成品：直径05-8.5ケーブル使用。

[LAN/電源ケーブル設置]

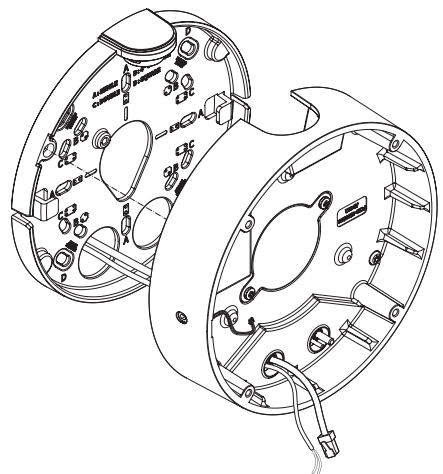
1-1. 使用するブッシュの突出部をはがしてください。

1-2. LANケーブルをブッシュの大きいホールで通過させ、LANコネクタを接続させてください。

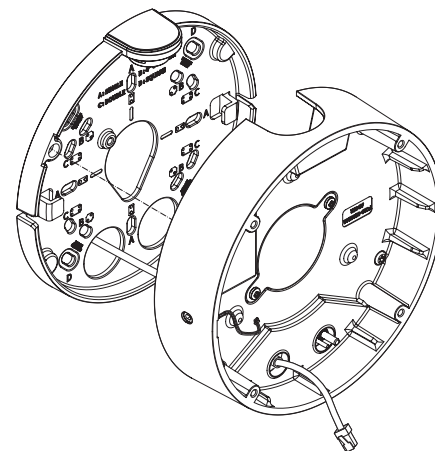
1-3. (電源使用時)電源ケーブルをブッシュの小さいホールで通過させ、提供されたターミナルブロックと接続させてください。



1-4. プッシュをカメラケースにはめてください。



2-3. プッシュをカメラケースにはめてください。

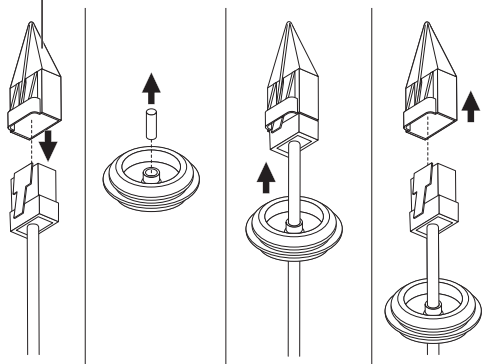


[LANケーブル設置]

2-1. 提供された1ホールプッシュの突出部をはがしてください。

2-2. キャップインストローラーを使用してRJ45ケーブルを通過させてください。

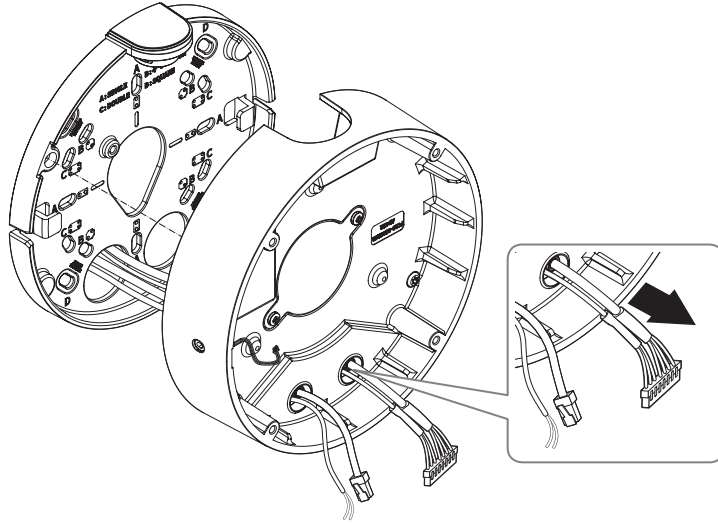
キャップイン
ストローラー



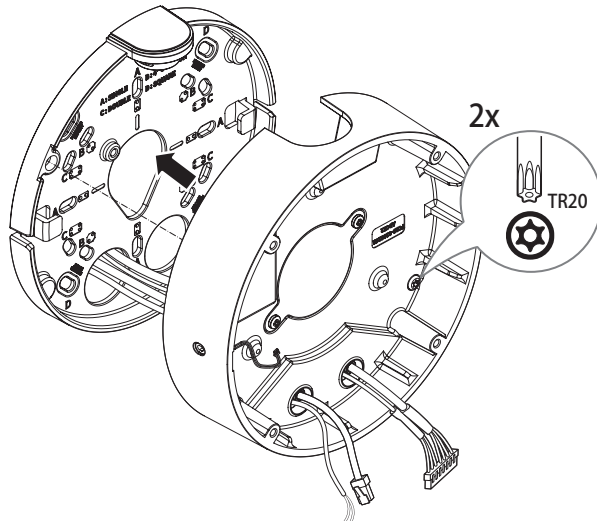
屋内型のドームカメラ

[オーディオ&アラームケーブル設置]

3-1. 提供されたオーディオ&アラームケーブルのプッシュをカメラケースにはめてください。



4. マウントプレートとカメラケースを結合させてください。

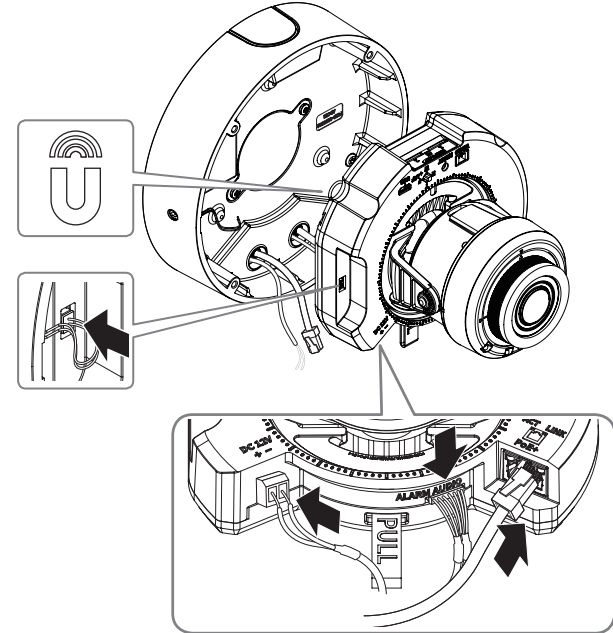


カメラモジュール装着

1. カメラモジュールポートにLAN/電源/オーディオ&アラームケーブルを接続させてください。
2. カメラモジュールをケースに付着してください。

- !
- モジュール底面にマグネットが内蔵されています。
 - 付着面の間に汚れが付かないようにご注意ください。

3. マイクケーブルをカメラモジュールに接続させてください。



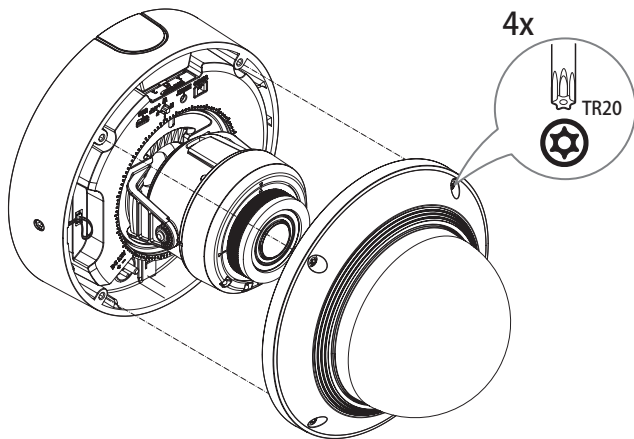
4. 「カメラの監視方向の調整」を参考してレンズを好きな方向に調整してください。(41ページ)

ドームカバーの組み立て

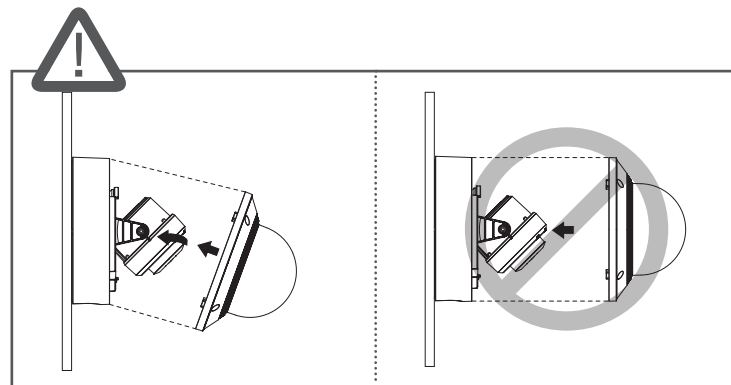
[壁/天井に直接設置]

1. ドームカバーを組み立ててください。

- 締結用のネジは、防水に問題がないようにしっかり締結させてください。



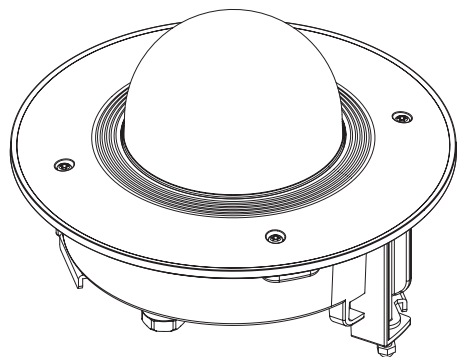
- カメラの監視方向が動かないようにご注意ください。



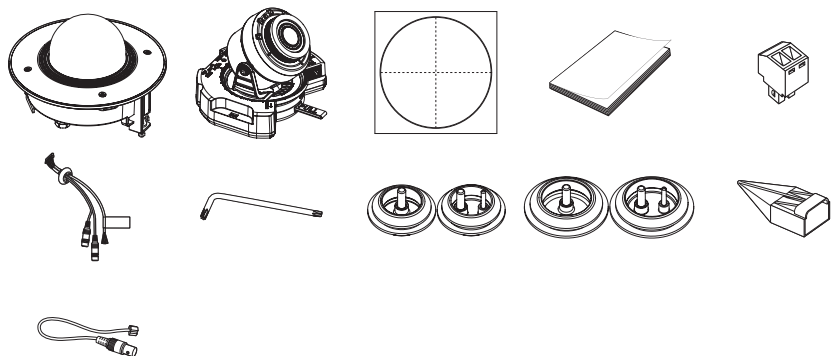
フラッシュ・マウントドームカメラ

キット内容

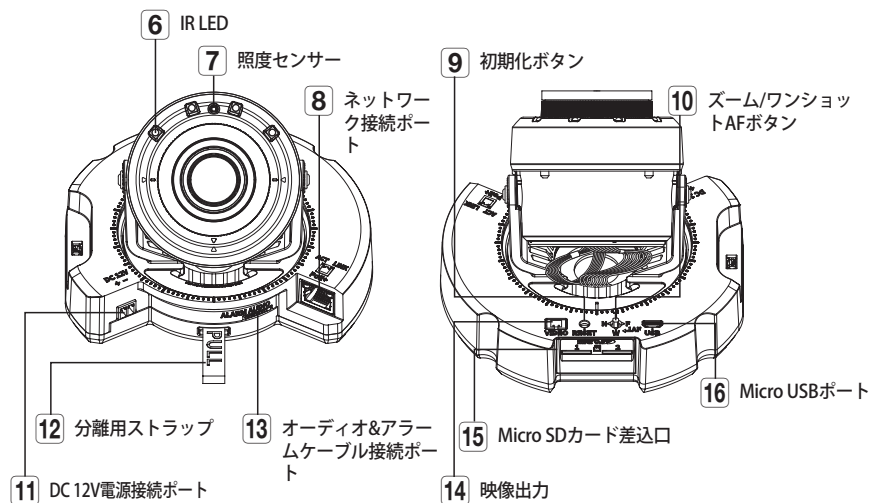
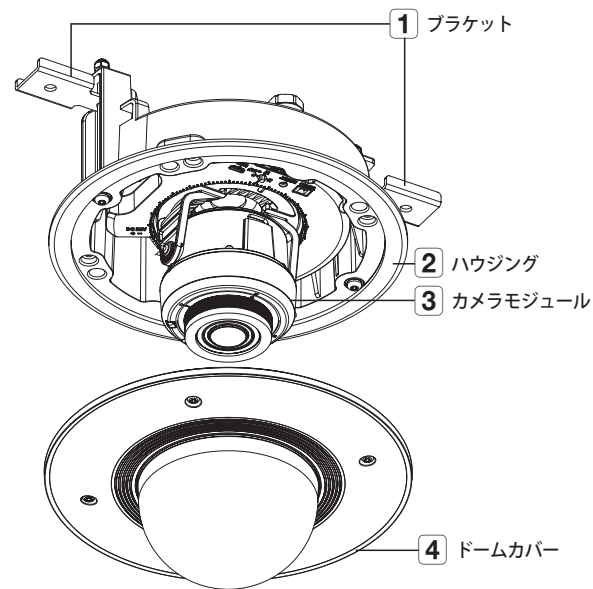
販売国ごとに付属品が異なるため。



<PND-A9081RF>



概観



取付け

- !** ■ 本カメラは防水であり、IP52仕様に準拠していますが、外部ケーブルに接続されるジャックはそうではありません。ケーブルが外部に突出するのを防止するために軒先の下に本製品をインストールすることをお勧めします。

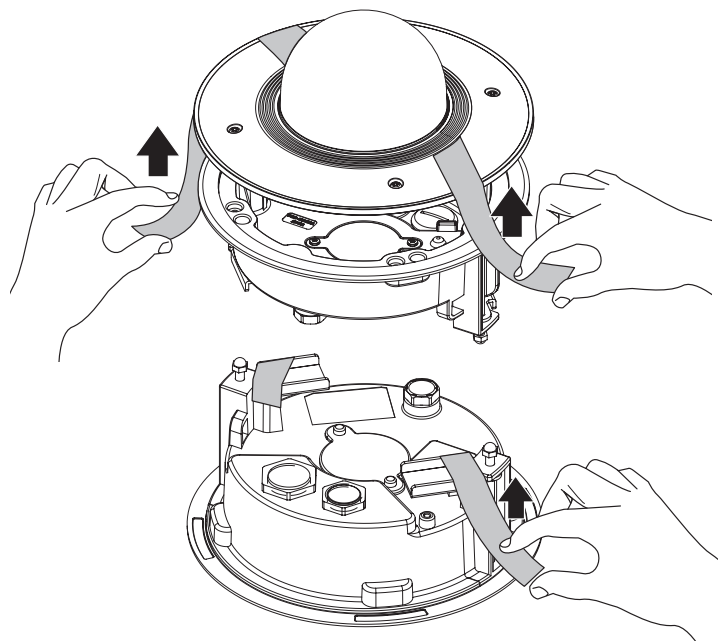
取付けに関する注意事項

カメラを取り付ける前に、以下の指示をよく読んでください。

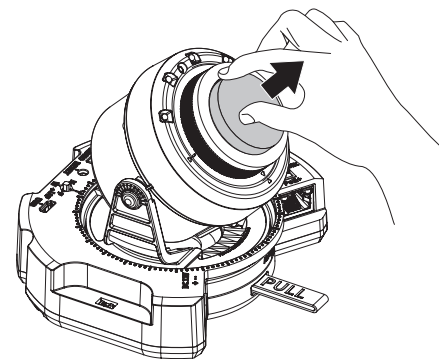
- カメラの重量の5倍以上の重さを固定できる取付け場所を選んでください。
- 引っかかっていたり、はがれたケーブルは製品の損傷または火災の原因となります。
- 安全のため、設置場所に人を近づけないでください。
また、万が一のため持ち物は取付け場所には置かないでください。
- 過剰な力で製品を取り付けると、故障によりカメラが損傷する場合があります。不適切なツールを使用し無理やり組み立てると、製品が損傷する場合があります。

分離する

1. カメラケースを固定するテープを外してください。

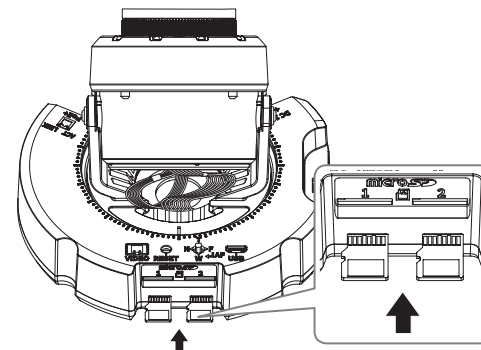


2. カメラレンズ保護用のクッションを取り外してください。



マイクロSDメモ리카ードの挿入

カメラモジュールのMicro SD差込口にMicro SDカードを矢印の方向に押し込んでください。

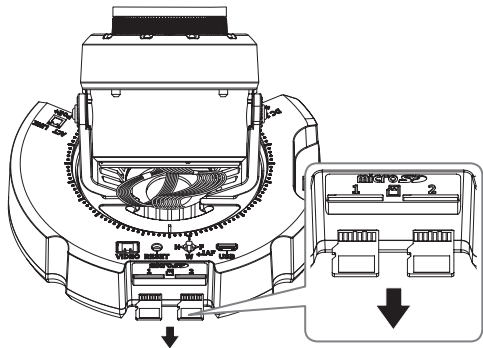


- !**
- カメラを設置する前に電源と本体を分離した状態でMicro SDメモ리카ードを入れてください。
 - 逆方向で無理に挿入しないでください。Micro SDメモ리카ードと製品が破損するおそれがあります。
 - 雨あるいは高湿度の状態ではMicro SDカードを挿入したり取り出したりすることは推奨されません。
 - Micro SDメモ리카ードを搭載/除去するときには、部品流失&落下事故を防止するために必ず製品本体を平地においてから作業してください。

フラッシュ・マウントドームカメラ

マイクロSDメモリーカードの取出し

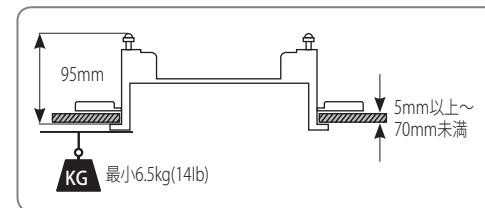
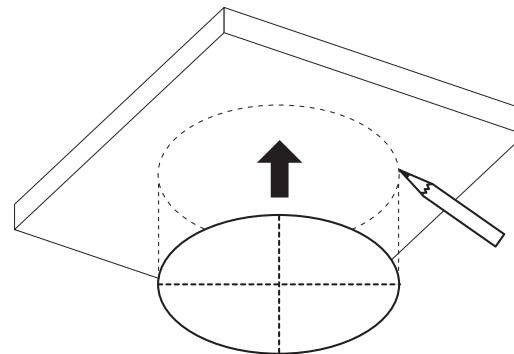
図に示されているように、メモリーカードの露出部分を慎重に押して、スロットからメモリーカードを取り出します。



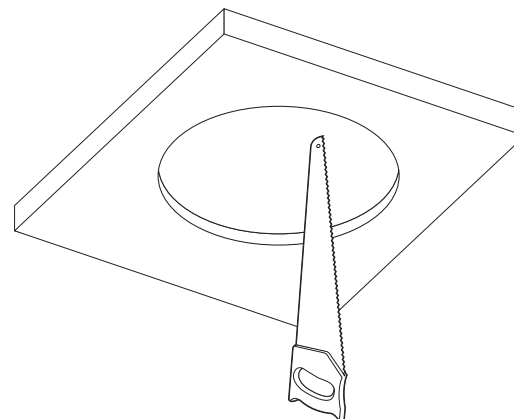
- Micro SDメモリーカードを取り外す前に、<ストレージ>でデバイスを<Off>に設定し、[適用] ボタンを押してカメラをオフにします。
- カメラのスイッチを切るか、データの入っているマイクロSDメモリーカードを製品から抜くと、データが失われるか、または損傷を受ける場合があります。

設置する(ハウジング)

1. 天井に設置用のテンプレートを付着して鉛筆に表示してください。

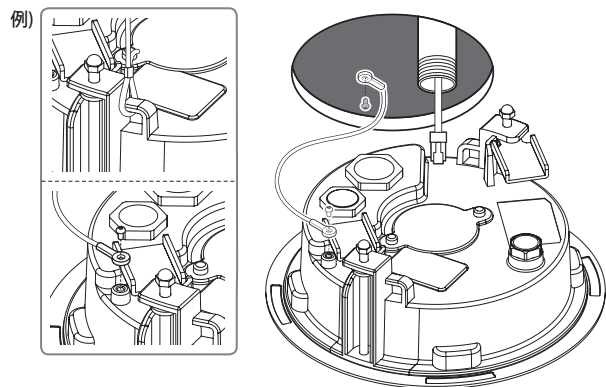


2. 好きな場所に設置用のテンプレートを付着してホールを開けてください。

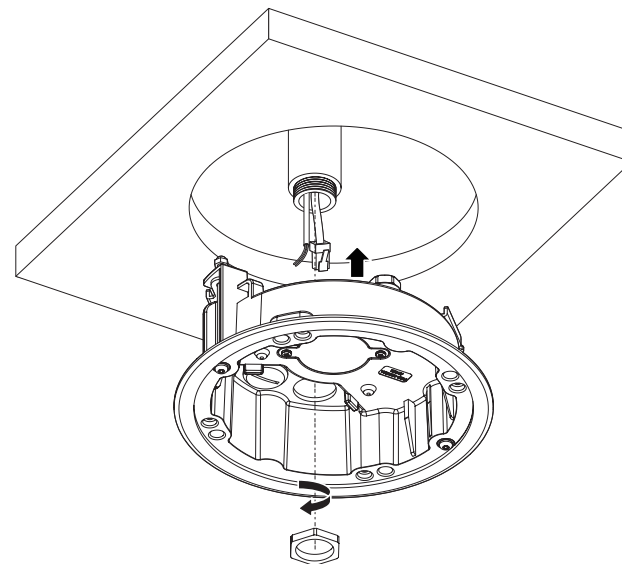


3. 安全ケーブルを接続させてください。

❗ ■ 安全ケーブルは提供しません。

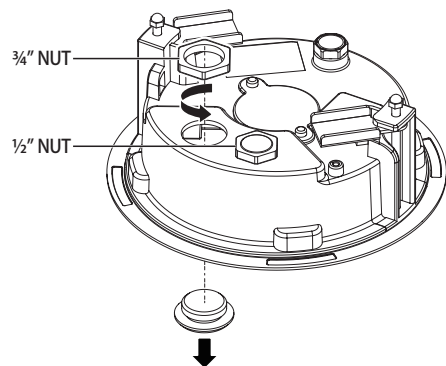


4-2. LAN/電源/オーディオ&アラームケーブルのうち、必要なケーブルをパイプから取り出してください。



[パイプを接続する場合]

4-1. パイプをサイズに合うホールに組み立ててください。



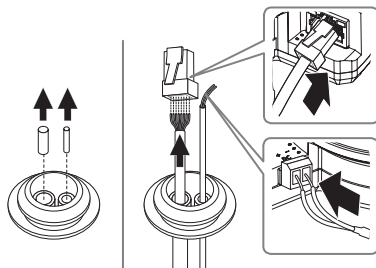
フラッシュ・マウントドームカメラ

設置する(カメラケース)

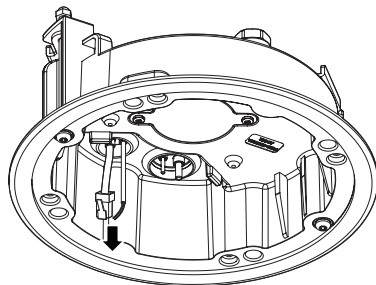
- 接続するLANケーブルの規格に合うケーブルブッシュを使用してください。
 - 提供構成品：直径05-8.5ケーブル使用。

[LAN/電源ケーブル設置]

- 1-1. 使用するブッシュの突出部をはがしてください。
- 1-2. LANケーブルをブッシュの大きいホールで通過させ、LANコネクタを接続させてください。
- 1-3. (電源使用時)電源ケーブルをブッシュの小さいホールで通過させ、提供されたターミナルブロックと接続させてください。



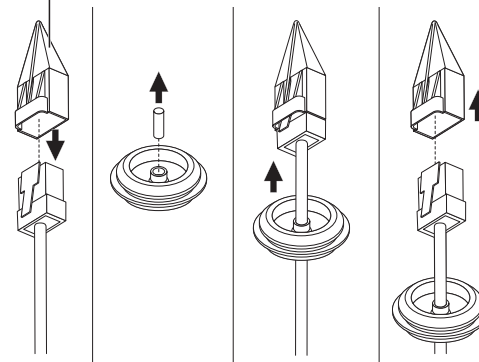
- 1-4. ブッシュをハウジングにはめてください。



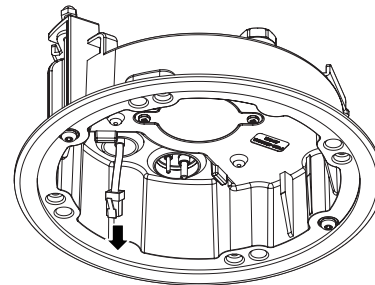
[LANケーブル設置]

- 2-1. 提供された1ホールブッシュの突出部をはがしてください。
- 2-2. キャップインストローラーを使用してRJ45ケーブルを通過させてください。

キャップイン ストローラー

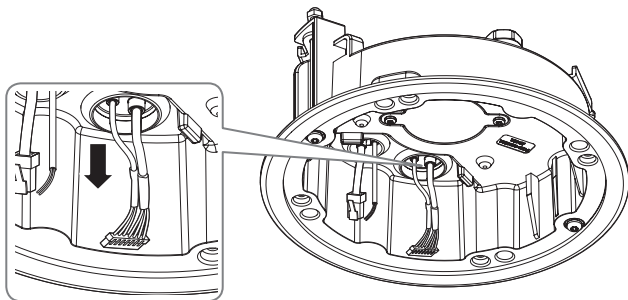


- 2-3. ブッシュをハウジングにはめてください。



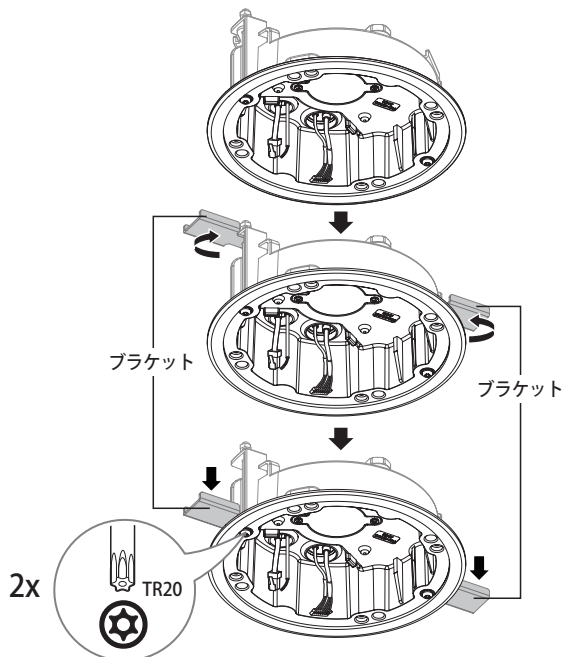
[オーディオ&アラームケーブル設置]

3-1. 提供されたオーディオ&アラームケーブルのプッシュをカメラケースにはめてください。



4. ハウジングのネジを回してハウジングを天井に固定させてください。

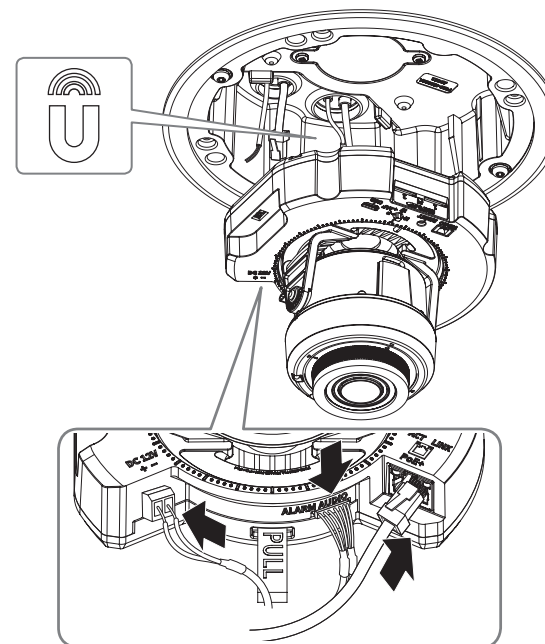
- ❗ ■ ブラケットがハウジングを天井に固定します。
- ハウジングが天井にしっかり固定されたか確認してください。



カメラモジュール装着

1. カメラモジュールポートにLAN/電源/オーディオ&アラームケーブルを接続させてください。
2. カメラモジュールをケースに付着させてください。

- ❗ ■ モジュール底面にマグネットが内蔵されています。
- 付着面の間に汚れが付かないようにご注意ください。



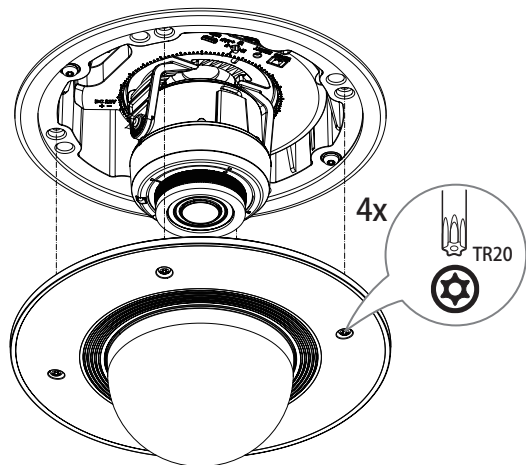
3. 「カメラの監視方向の調整」を参考してレンズを好きな方向に調整してください。(41ページ)

フラッシュ・マウントドームカメラ

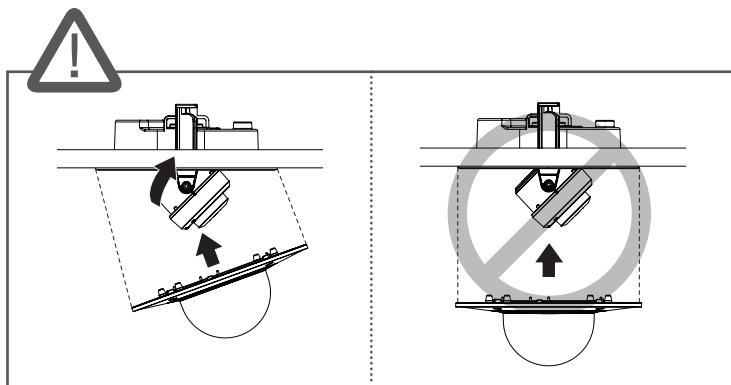
ドームカバーの組み立て

1. ドームカバーを組み立ててください。

- 締結用のネジは、防水に問題がないようにしっかり締結させてください。



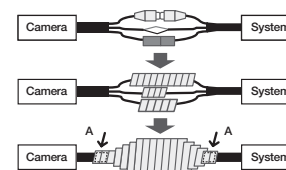
- カメラの監視方向が動かないようにご注意ください。



ケーブル防水処理

ケーブルの隙が湿気に露出される恐れがある場合、下記のように市中に販売している防水プチルゴムテープで防水処理してください。

1. 電源、I/O、およびLANケーブルを接続します。
2. 黒いケーブルジャケット（A部）を含むケーブル接続部までプチルゴムテープの半分以上が重なるように防水テープを巻いてください。

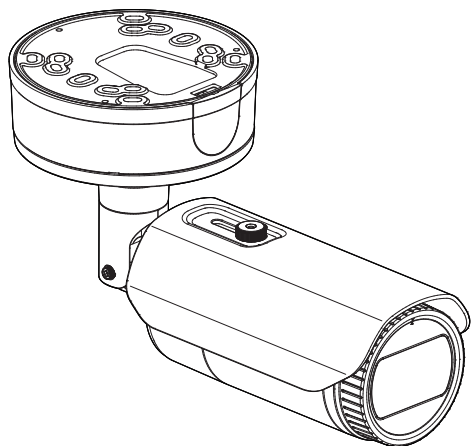


- 接続したケーブルジャケット部分の防水処理が不十分な場合、直接的な水漏れ原因になるため特にしっかりとテーピングをしてください。
- 防水用プチルゴムテープは本来の長さの2倍以上伸びるプチルゴム素材です。

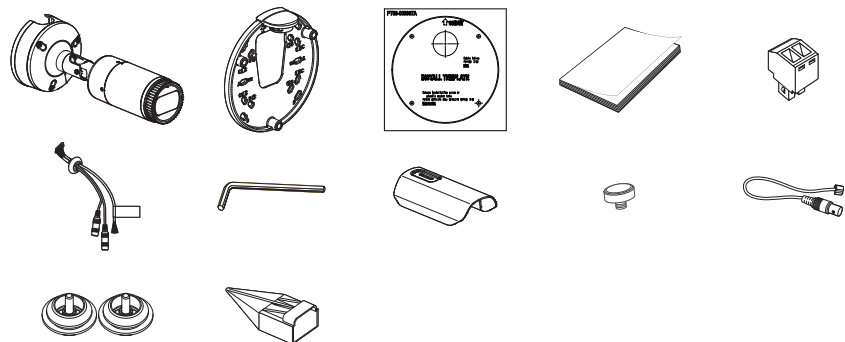
屋外型のブレットカメラ

キット内容

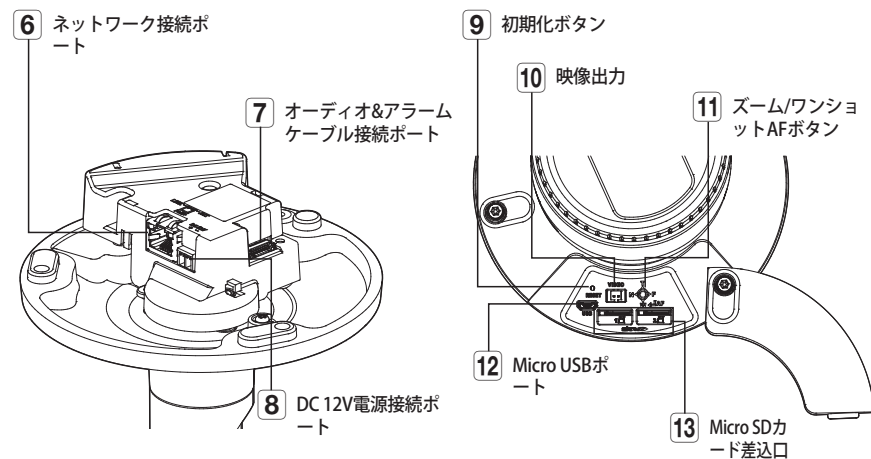
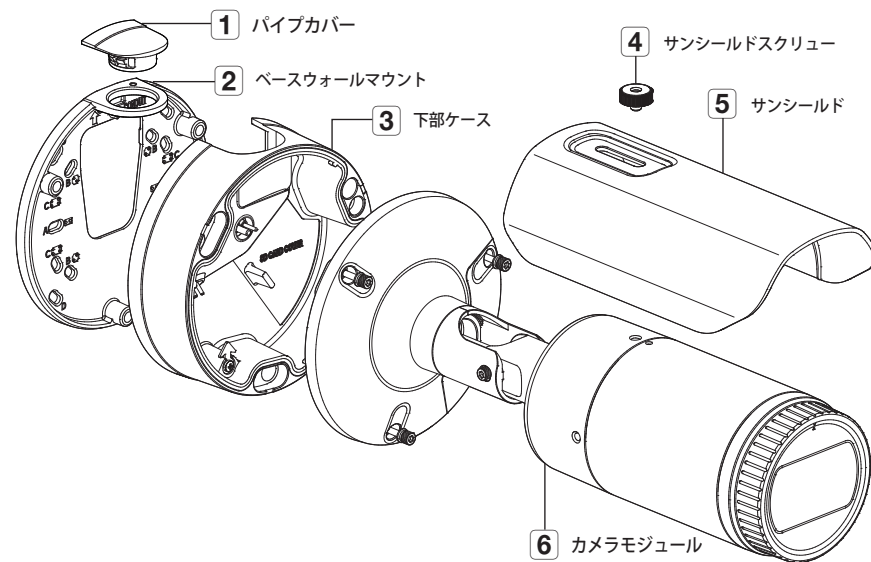
販売国ごとに付属品が異なるため。



<PNO-A9081R>



概観



❗ カメラのレンズ表面が汚れたら、レンズ用のティッシュやコットンにエタノールをつけてレンズ表面をスムーズに拭き取ってください。

屋外型のブレットカメラ

取付け

- 本カメラは防水であり、IP67仕様に準拠していますが、外部ケーブルに接続されるジャックはそうではありません。ケーブルが外部に突出するのを防止するために軒先の下に本製品をインストールすることをお勧めします。

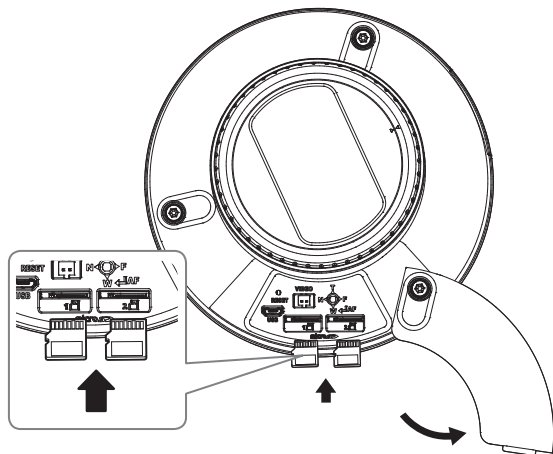
取付けに関する注意事項

カメラを取り付ける前に、以下の指示をよく読んでください。

- カメラの重量の5倍以上の重さを固定できる取付け場所を選んでください。
- 引っかかっていたり、はがれたケーブルは製品の損傷または火災の原因となります。
- 安全のため、設置場所に人を近づけないでください。
また、万が一のため持ち物は取付け場所には置かないでください。
- 過剰な力で製品を取り付けると、故障によりカメラが損傷する場合があります。不適切なツールを使用し無理やり組み立てると、製品が損傷する場合があります。
- サンシールド用ホールは、サンシールドを接続する以外の目的で使用してはなりません。

マイクロSDメモリーカードの挿入

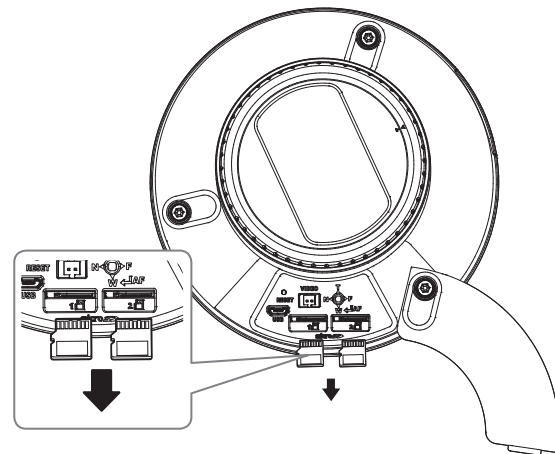
カメラモジュールのMicro SD差込口にMicro SDカードを矢印の方向に押し込んでください。



- カメラを設置する前に電源と本体を分離した状態でMicro SDメモリーカードを入れてください。
- 逆方向で無理に挿入しないでください。Micro SDメモリーカードと製品が破損するおそれがあります。
- 雨あるいは高湿度の状態でMicroSDカードを挿入したり取り出したりすることは推奨されません。
- Micro SDメモリーカードを搭載/除去するときには、部品流失&落下事故を防止するために必ず製品本体を平地においてから作業してください。

マイクロSDメモリーカードの取出し

図に示されているように、メモリーカードの露出部分を慎重に押して、スロットからメモリーカードを取り出します。

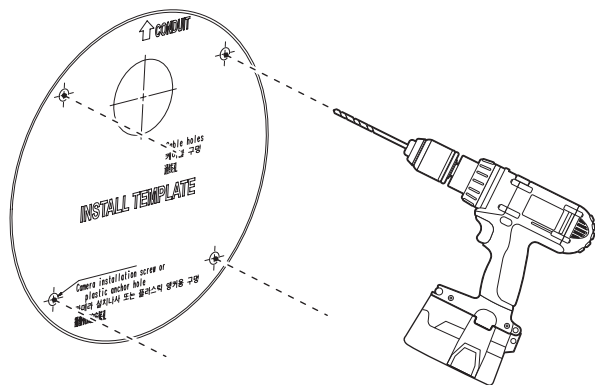


- Micro SDメモリーカードを取り外す前に、<ストレージ>でデバイスを<Off>に設定し、[適用] ボタンを押してカメラをオフにします。
- カメラのスイッチを切るか、データの入っているマイクロSDメモリーカードを製品から抜くと、データが失われるか、または損傷を受ける場合があります。

する(ベースウォールマウント)

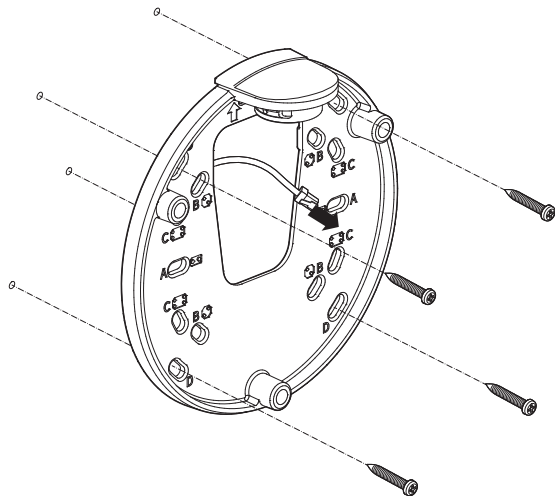
[壁/天井に直接設置]

1-1. 好きな場所に設置用のテンプレートを付着してネジホールとケーブルホールを開けてください。



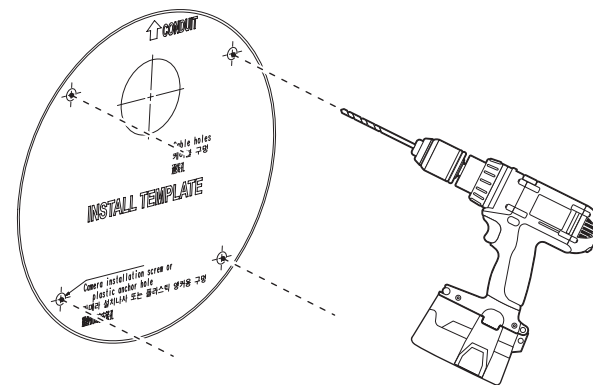
1-2. 適切なネジを使ってベースウォールマウントを固定してください。

1-3. LAN/電源/オーディオ&アラームケーブルのうち、必要なケーブルをベースウォールマウントの穴に取り出してください。

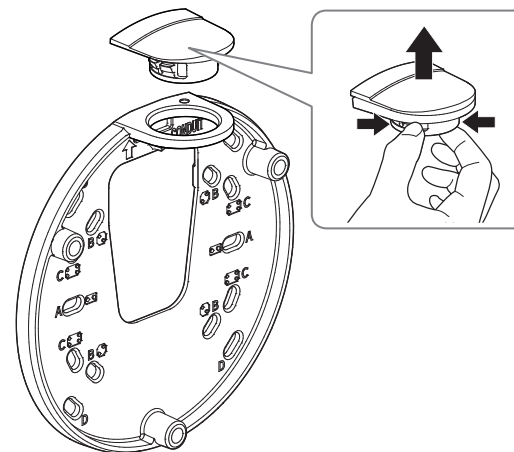


[パイプを接続して設置]

2-1. 好きな場所に設置用のテンプレートを付着してネジホールとケーブルホールを開けてください。

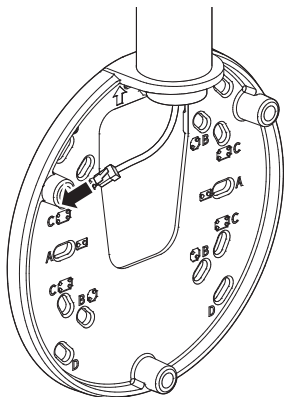


2-2. ベースウォールマウントのパイプカバーを左右に押して分離してください。

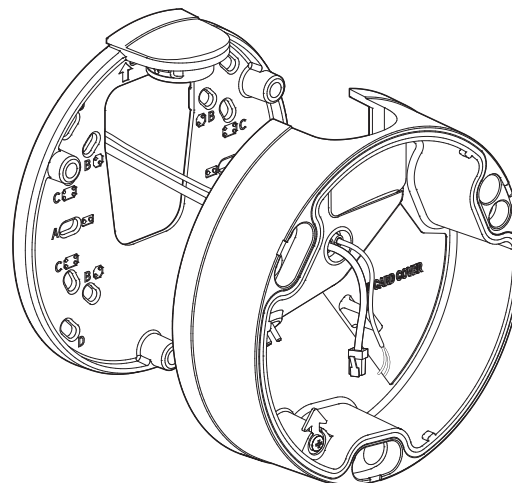


屋外型のプレートカメラ

- 2-3. パイプをベースウォールマウントに据え置きしてください。
- 2-4. 適切なネジを使ってベースウォールマウントを固定してください。
- 2-5. LAN/電源/オーディオ&アラームケーブルのうち、必要なケーブルをパイプから取り出してください。



- 1-4. プッシュを下部ケースにはめてください。

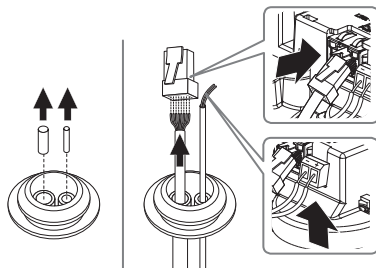


設置する(下部ケース)

- 接続するLANケーブルの規格に合うケーブルプッシュを使用してください。
 - カメラ初期値：直径05-6.5ケーブル使用。
 - 提供構成品：直径05-8.5ケーブル使用。

[LAN/電源ケーブル設置]

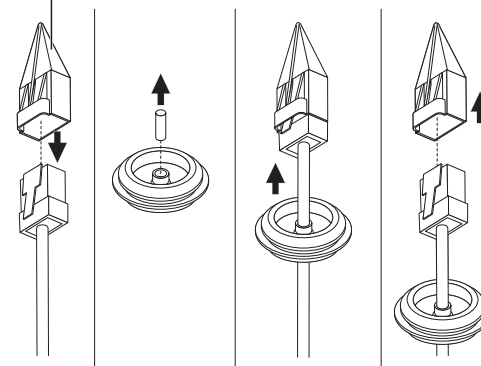
- 1-1. 使用するプッシュの突出部をはがしてください。
- 1-2. LANケーブルをプッシュの大きいホールで通過させ、LANコネクタを接続させてください。
- 1-3. (電源使用時)電源ケーブルをプッシュの小さいホールで通過させ、提供されたターミナルブロックと接続させてください。



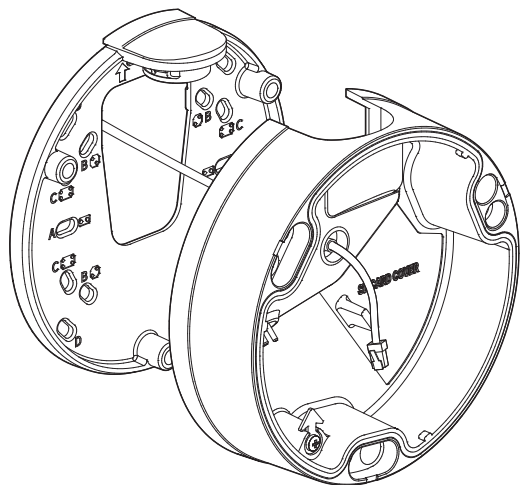
[LANケーブル設置]

- 2-1. 提供された1ホールプッシュの突出部をはがしてください。
- 2-2. キャップインストローラーを使用してRJ45ケーブルを通過させてください。

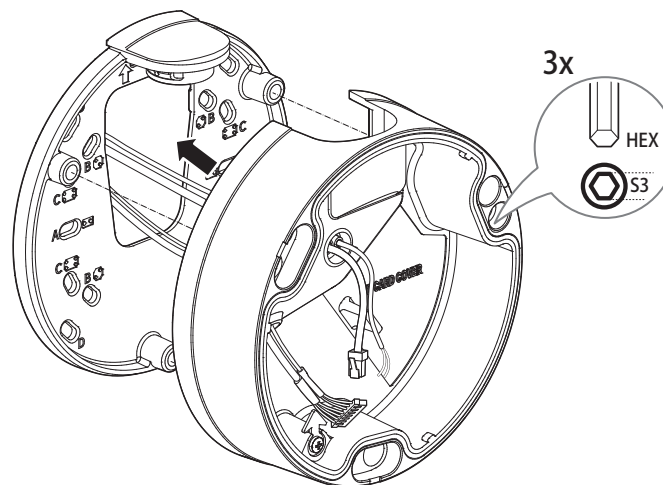
キャップインストローラー



2-3. プッシュを下部ケースにはめてください。

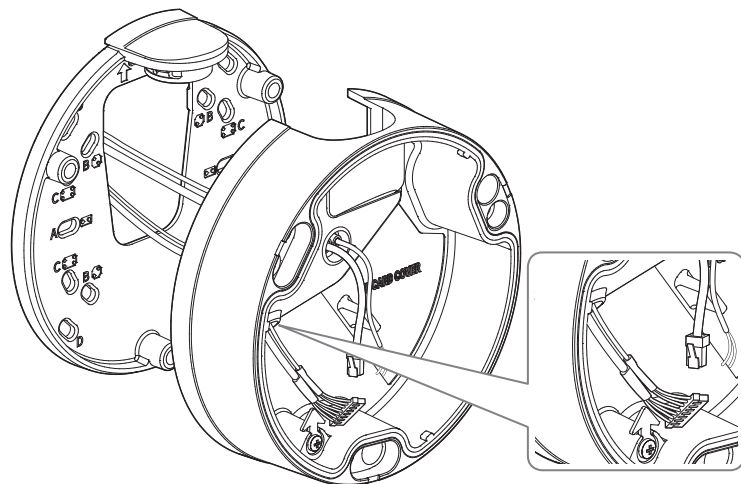


4. ベースウォールマウントと下部ケースを結合してください。



[オーディオ&アラームケーブル設置]

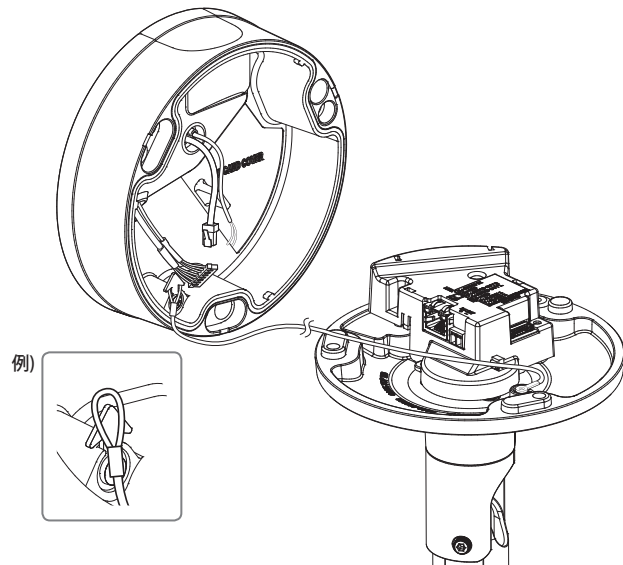
3-1. 提供されたオーディオ&アラームケーブルのプッシュを下部ケースにはめてください。



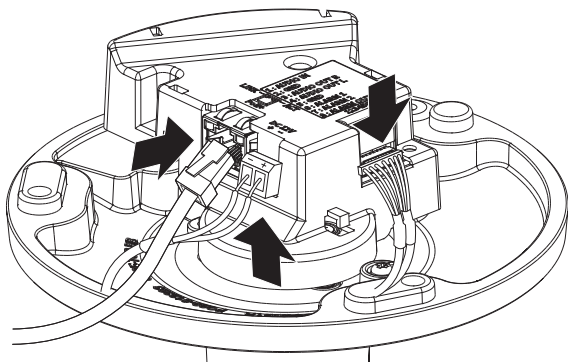
屋外型のプレートカメラ

カメラモジュール装着

1. 安全ケーブルを下部ケースの中にある矢印形のフックにかけてください

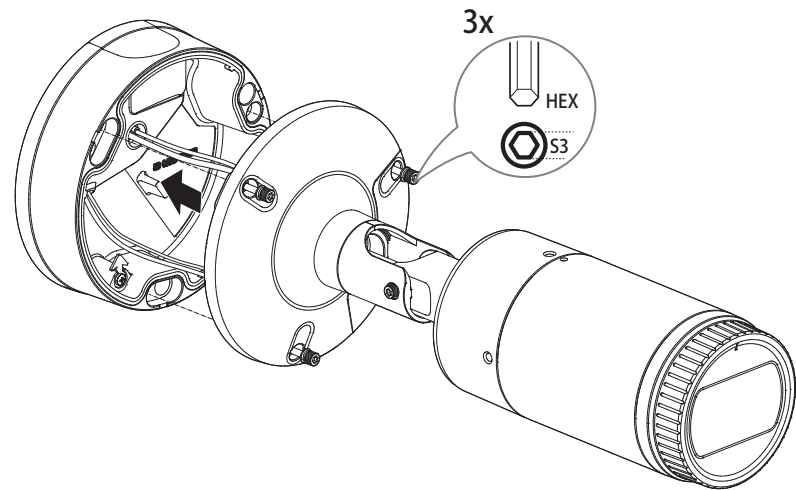


2. カメラモジュールポートにLAN/電源/オーディオ&アラームケーブルを接続させてください。



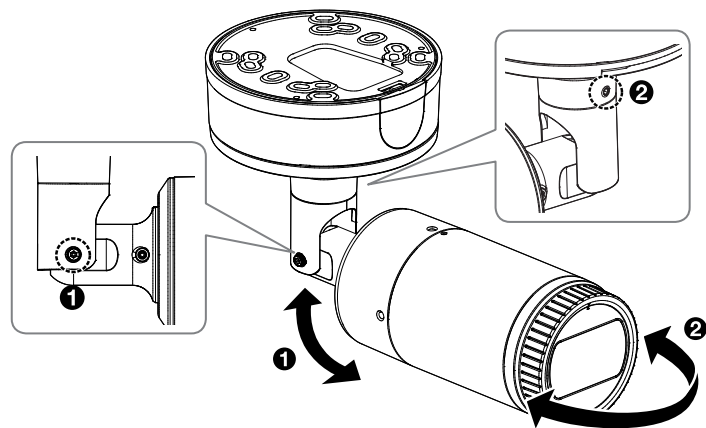
3. カメラモジュールを下部ケースに付着してください。

! ■ 締結用のネジは、防水に問題がないようにしっかり締結させてください。

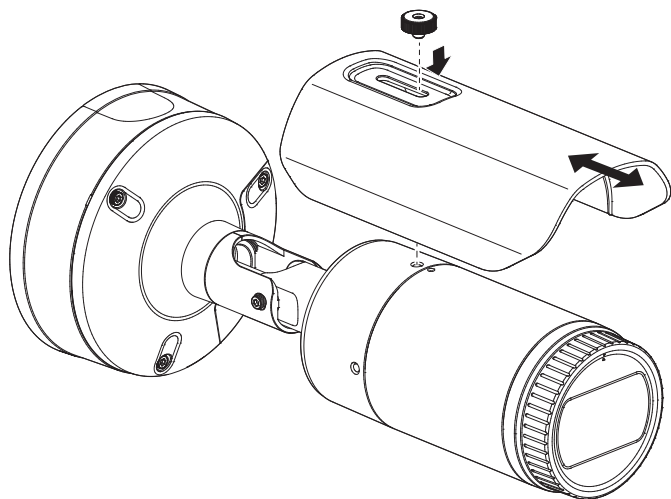


4. 付属のL型レンチを使用してカメラ方向を調節します。

! ■ ブラケットを使用してカメラ位置を調整するとき、ブラケットねじを緩め、カメラを調節し、締め付けます。ねじが固定されている状態で力任せに調節しようとすると、傷がつく恐れがあります。



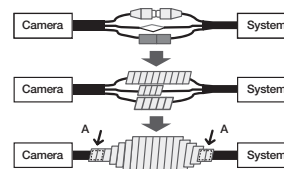
5. サンシールドスクリューを使ってカメラモジュールにサンシールドを組み立ててください。



屋外設置

建物外部に設置時、外部にて接続するケーブルの隙間に水漏れの心配がありますので、次のように市販されている防水プチルゴムテープにて防水処理をしてください。

1. 電源、I/O、およびLANケーブルを接続します。
2. 黒いケーブルジャケット（A部）を含むケーブル接続部までプチルゴムテープの半分以上が重なるように防水テープを巻いてください。

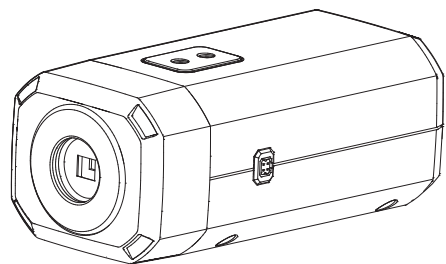


- 接続したケーブルジャケット部分の防水処理が不十分な場合、直接的な水漏れ原因になるため特にしっかりとテーピングをしてください。
- 防水用プチルゴムテープは本来の長さの2倍以上伸びるプチルゴム素材です。

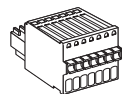
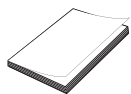
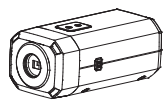
ボックスカメラ

キット内容

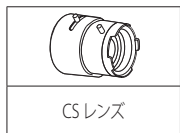
販売国ごとに付属品が異なるため。



<PNB-A9001>

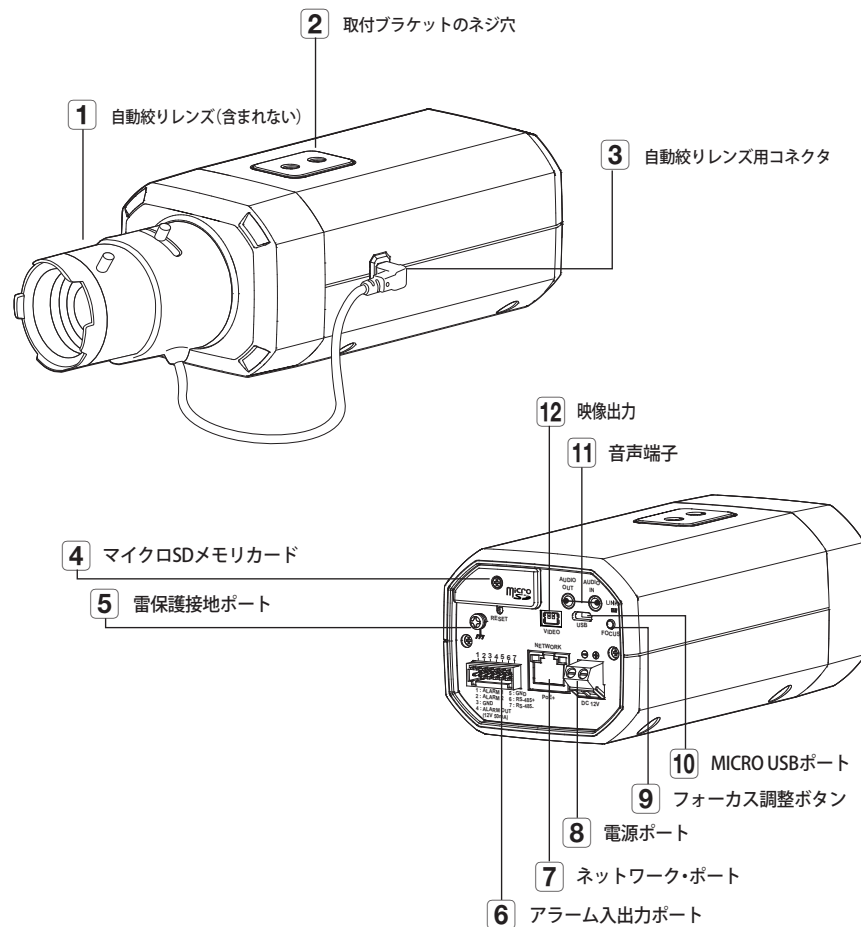


オプション(含まれない)



CSレンズ

概観



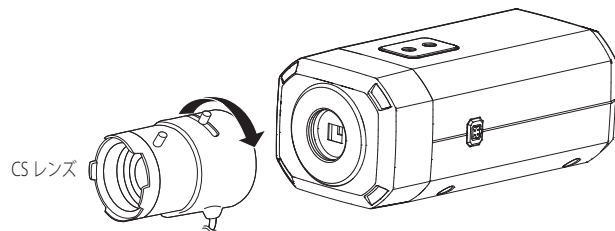
レンズの取付け

取り付ける前に電源をオフにします。

- ☑ ■ CSレンズおよびCマウントアダプターは製品パッケージに含まれていません。このためにもメガレンズを使用する必要があります。

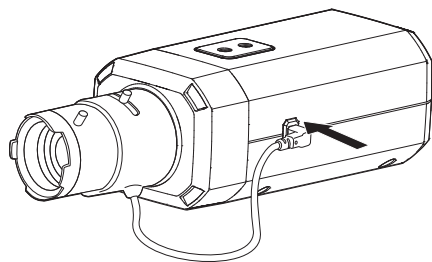
カメラへのCSレンズの取付け

時計回りにCSレンズを回して取り付けます。



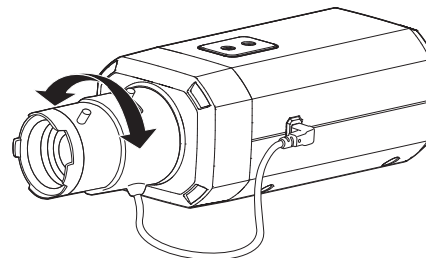
自動絞りレンズ用コネクタの接続

カメラ接続用の溝にレンズのアイリスコネクタを差し込みます。



フォーカス

撮影する対象を選択し、レンズのズームレバーを回し、倍率を調整してから、レンズの焦点を合わせると対象物が明確に表示されます。



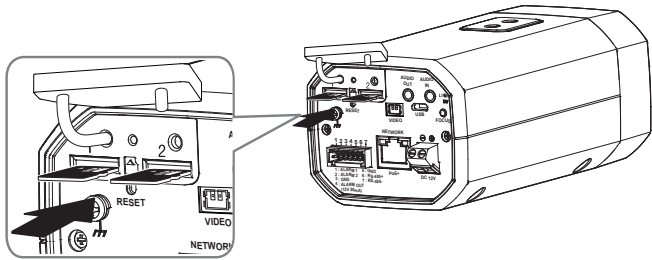
- ☑ ■ レンズのズームレバーでピントを合わせた後、カメラの背面にある[FOCUS]ボタンを押し、さらに鮮明にレンズを調整します。
- i-CSレンズはモーターが付いているため、ズーム/フォーカス、アイリスの開閉をウェブビューアで調整できます。

ボックスカメラ

マイクロSDメモ리카ードの挿入/取出し

マイクロSDメモ리카ードの挿入

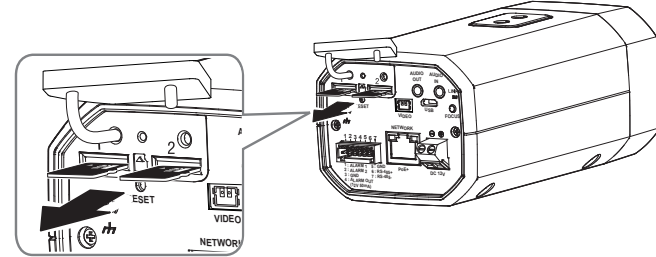
カメラモジュールのMicro SD差込口にMicro SDカードを矢印の方向に押し込んでください。



- カメラを設置する前に電源と本体を分離した状態でMicro SDメモ리카ードを入れてください。
- 逆方向で無理に挿入しないでください。Micro SDメモ리카ードと製品が破損するおそれがあります。
- 雨あるいは高湿度の状態でMicroSDカードを挿入したり取り出したりすることは推奨されません。
- Micro SDメモ리카ードを搭載/除去するときには、部品流失&落下事故を防止するために必ず製品本体を平地においてから作業してください。

マイクロSDメモ리카ードの取出し

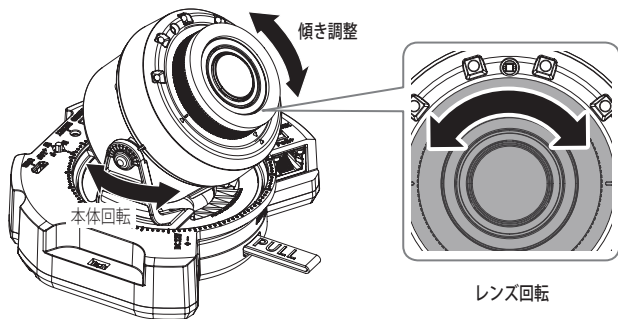
図に示されているように、メモ리카ードの露出部分を慎重に押して、スロットからメモ리카ードを取り出します。



- Micro SDメモリーカードを取り外す前に、<ストレージ>でデバイスを<Off>に設定し、[適用] ボタンを押してカメラをオフにします。
- カメラのスイッチを切るか、データの入っているマイクロSDメモリーカードを製品から抜くと、データが失われるか、または損傷を受ける場合があります。

取付けおよび接続

カメラの監視方向の調整



■ 監視方向の調整

カメラが天井へ固定され地エル状態でカメラの方向を調節することが可能です。この時、カメラの本体を左右に回転させることはPan、傾きを調整することはTiltとします。

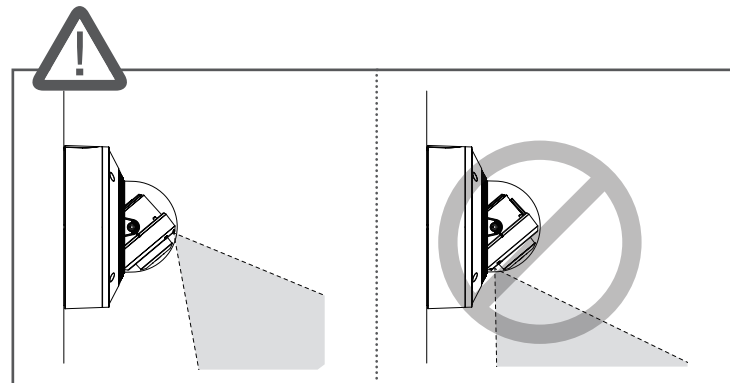
- パン角度は0°～360°です。
- チルト角度は-45°～85°です。
- ローテーション角度は0°～355°です。

- !** ■ チルト角度75°以上では、ズーム倍率によって画面の一部で角が隠される現象が発生したり、画像がぼやけることがあります。
- フォーカス/ズームレンズを強制的に回転させたり、押さないでください。モーター故障でフォーカス不良が発生することがあります。

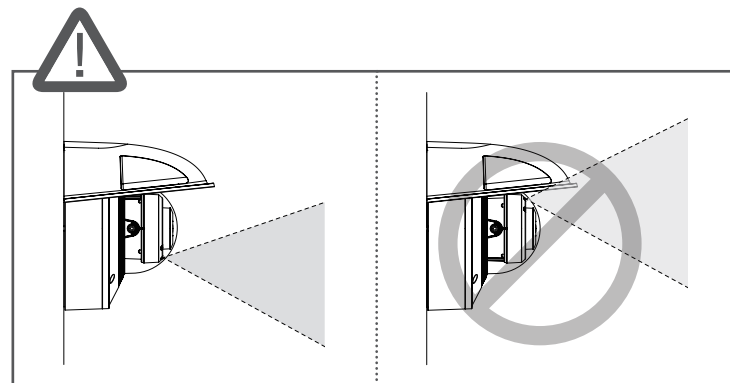
■ 調整方法

1. モニタリングする方向を考えてパン角度を調整してください。
2. ローテーションする時に映像が反転して表示されないように水平角度を合わせてください。
3. チルト角度を調整してモニタリングする方向に向けてください。

- !** ■ IR LEDは、器具物に隠されないように方向を調整してください。

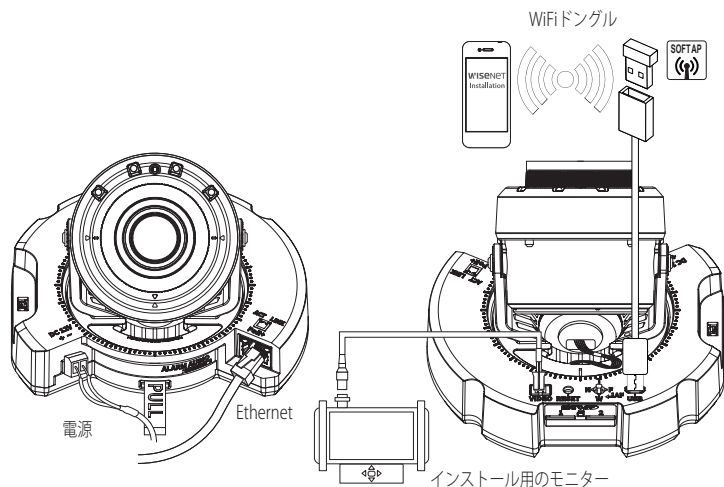


- !** ■ ウェザーキャップを使用する場合、IR-LEDが隠されないように方向を調整してください。

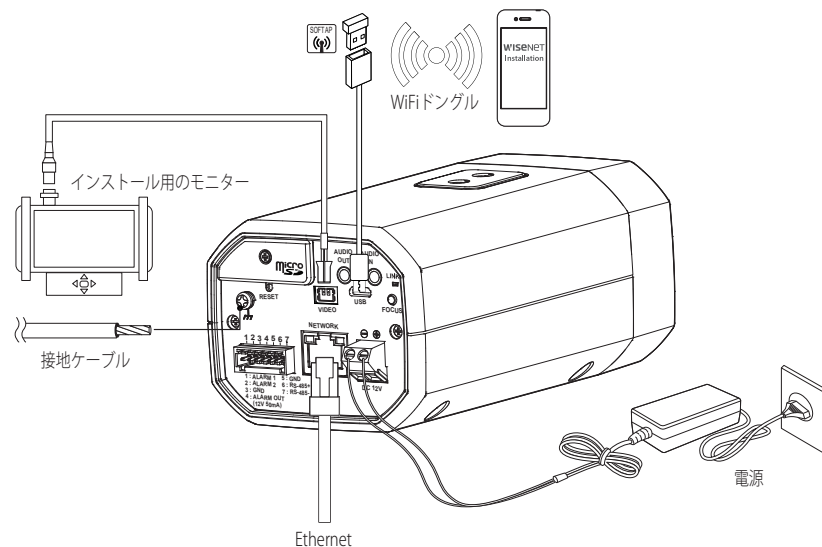


取付けおよび接続

他のデバイスとの接続

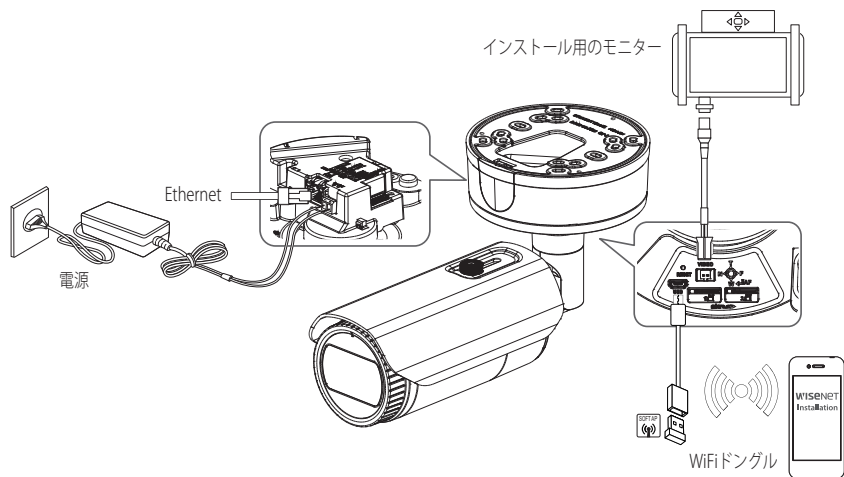


<PNV-A9081R/PND-A9081RV/PND-A9081RF>



<PNB-A9001>

- 製品のCVBS出力ポートは、カメラのインストール利便性のためのポートであり、監視用には不適合です。
- 本製品のMicro USBアウト端子は、簡単なインストールのために提供されており、監視目的にはお勧めできません。



<PNO-A9081R>

イーサネット接続

イーサネットケーブルをローカルネットワークもしくはインターネットに接続します。

WiFi接続

カメラ設定

1. OTGアダプタ (5ピン) とWiFiドングルをMicro USB端子に接続します。

スマートフォン設定

1. Wisenetインストールアプリケーションをインストールします。
2. WiFiをオンにしてからカメラのSSIDを選択します。
3. Wisenetインストールアプリケーションを起動します。
4. カメラにログインすると、ビデオに接続されます。
 - 初期接続中は、ログインしていなくてもビデオが再生されます。
5. スマートフォンでビデオを視聴しながら、画角を調整することができます。

推奨するドングル製造業者

製造業者	モデル
NETIS	WF2123 n300
EDIMAX	EW-7811Un
IP Time	N100mini
TP-LINK	TL-WN823N V1
ASUS	USB-N13
NETGEAR	WNA3100M

電源

電源アダプタの+、-線をドライバを使用してカメラの電源入力端子に接続します。

- !**
- PoE+、DC 12V電源を同時投入すると、デバイス電源はPoE+、DC 12Vに同時動作します。
 - PoE+機能が可能なルータを使用して接続すると、別途の電源を接続しなくても使用が可能です。
 - PoE+はIEEE 802.3at規格に対応した装備を使用します。
 - DC12Vは極性がありますので、注意して接続してください。
 - 外部デバイスを接続する場合は、作業を進める前に外部デバイスの電源を切る必要があります。
 - セットとアダプター電源ラインを最初に接続し、その次に電源ケーブルを壁のコンセントに接続します。

各モデルの電源ケーブルの仕様

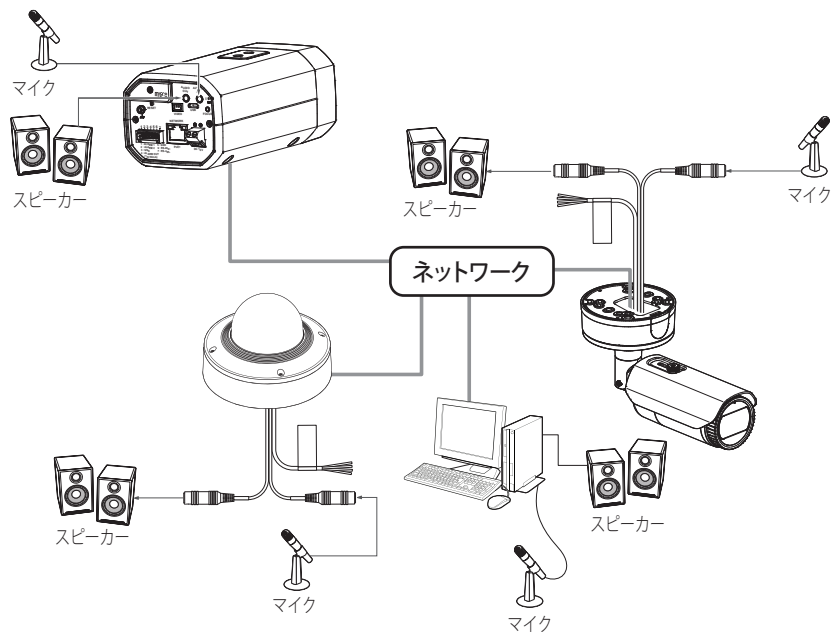
モデル	入力電力	ワイヤータイプ (AWG)	ケーブルの長さ (最長)
PND-A9081RV PND-A9081RF PNV-A9081R	DC 12V	#18	15m
		#16	24m
PNO-A9081R	DC 12V	#18	15m
		#16	24m
PNB-A9001	DC 12V	#18	18m
		#16	29m

ネットワークケーブルの仕様

アイテム	コンテンツ	備考
コネクタ	RJ-45(10/100/1000BASE-T)	
イーサネット	10/100/1000BASE-T	
ケーブル	カテゴリ 6	
最大距離	100M	
PoE サポート	IEEE 802.3at	

取付けおよび接続

音声入力/出力への接続



1. カメラのAUDIO INポートをマイクに接続するか、マイクが接続されているアンプのLINE OUTポートに接続します。

■ 別途の外部マイクを接続しなくてもカメラに内蔵されたマイクを使用することができます。
(PND-A9081RV/PNB-A9001のみ)

2. カメラのAUDIO OUTポートをスピーカーに接続するか、スピーカーが接続されているアンプのLINE INポートに接続します。

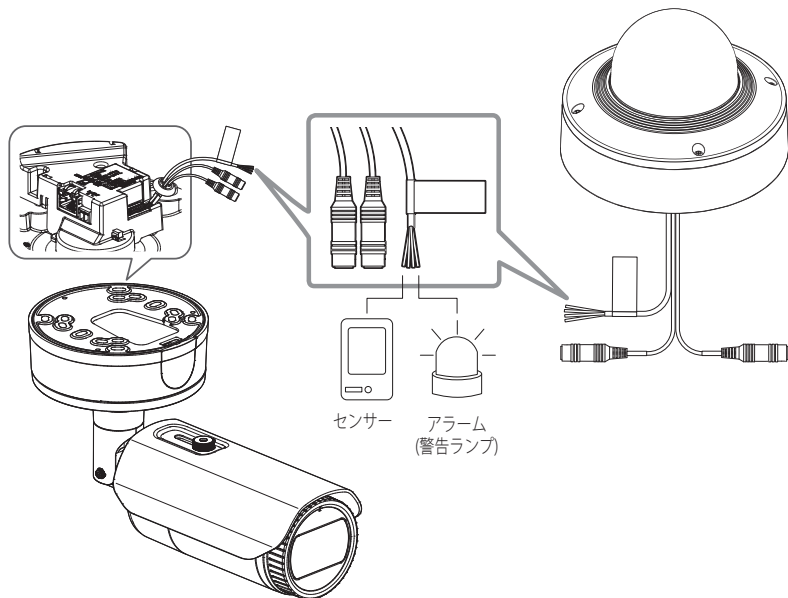
3. 音声入力の仕様を確認します。

- 音声コーデック
 - 音声入力: G.711PCM (ビットレート: 64kbps / サンプリング周波数: 8kHz)、G.726ADPCM (ビットレート: 16Kbps、24Kbps、32Kbps、40Kbps / サンプリング周波数: 8kHz)、AAC (Bit Rate: 48Kbps / Sampling Frequency: 16kHz)
 - 音声出力: G.711PCM (ビットレート: 64kbps / サンプリング周波数: 8kHz)
- 全二重音声
- 音声入力 (PND-A9081RV/PNB-A9001): 選択可能 (マイク/ライン入力/内蔵マイク)、サポートされる電圧: 2.5VDC (4mA)、入力インピーダンス: 2K オーム
- 音声入力 (PNV-A9081R/PND-A9081RF/PNO-A9081R): 選択可能 (マイク/ライン入力)、サポートされる電圧: 2.5VDC (4mA)、入力インピーダンス: 2K オーム
- 音声出力: Line-out (3.5mmモノジャック)、最大出力: 1Vrms
- インピーダンスライン出力: 600Ω

- ! ■ ウェブビューアクセス - <映像&音声> - <音声設定> で音声入力ソースを外部マイクに設定した場合、マイクの推奨仕様は下記の通りです。
- 周波数範囲: 40~16,000Hz
 - インピーダンス: 1,500 Ω
 - 感度: -40±3dB(7.1~14.1mV)
- 下記の場合には、サウンド分類性能が低下されるか誤動作が発生することがある。
- 銃声が単発性の銃声ではなくマシンガンのように連続で音がする場合
 - ノイズと対象サウンドが区別されないぐらいに大きい場合
 - 2つ以上の違うサウンドが同時に入力が入る場合
 - 静かな環境でノイズ除去機能を使用してサウンド分類を適用する場合
 - カメラ近くに(1メートル以内)拍手、叫び声などの音がする場合
 - 飛行機の音、サイレンの音など、サウンド分類のカテゴリーではないサウンドが急に大きく発生する場合
 - 外部マイクが推奨仕様に該当しない場合

I/Oポートボックスへの接続

アラーム入・出ケーブルを、ポートボックスの対応する部分と接続してください。



- ALARM #1: アラーム入力センサーや外部デイ/ナイトセンサーを接続するために使用します。
- ALARM #2: アラーム出力信号の接続に使用します。
- GND: アラーム入出力信号用の共通ポートです。

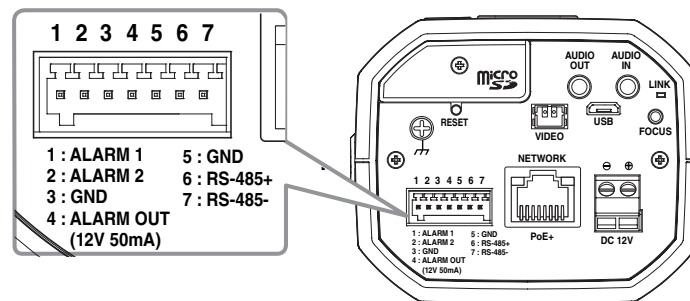
! 電圧と電流が規格外のデバイス（例：閃光灯やサイレン）をオープンコレクタ方式で接続すると、故障の原因となる場合があります。
電圧と現在の仕様内容を上回っているデバイスを接続するときは、「アラーム出力配線図」を参照してください。
(46ページ)

外部センサーの接続

センサーの各信号ライン(2つより)の一方を[ALARM #1]ポートに接続し、もう一方を[GND]ポートに接続します。

I/Oポートボックスへの接続 (PNB-A9001)

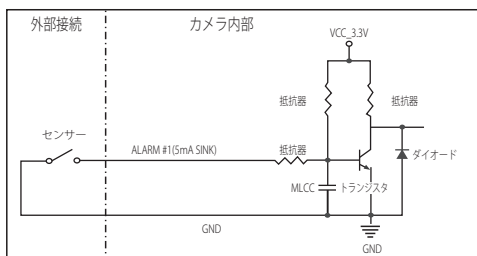
アラーム入出力信号を、背面の対応するポートボックスに接続します。



- ALARM #1: アラーム入力センサーや外部デイ/ナイトセンサーを接続するために使用します。
- ALARM #2: アラーム出力信号の接続に使用します。
- GND: 接地に使用します。
- RS-485+: RS-485レシーバ (+) 用の通信ポートです。
- RS-485-: RS-485レシーバ (-) 用の通信ポートです。

取付けおよび接続

アラーム入力配線図



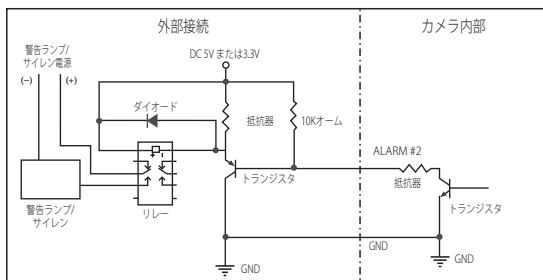
アラーム出力を接続するには

電圧と電流が規格外のデバイス (例: 閃光灯やサイレン) をオープンコレクタ方式で接続すると、故障の原因となる場合があります。

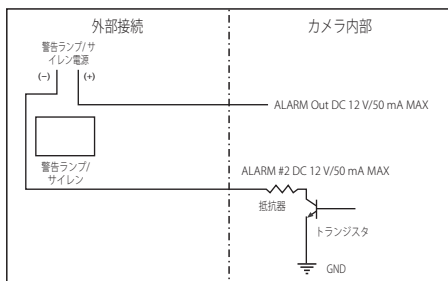
電圧と電流が使用設定値を超えるデバイスを接続する場合は、以下のアラーム出力接続図を参照してください。

アラーム出力配線図

景光灯/サイレンがDC12V/50mAを超過する場合



景光灯/サイレンがDC12V/50mAを超過しない場合



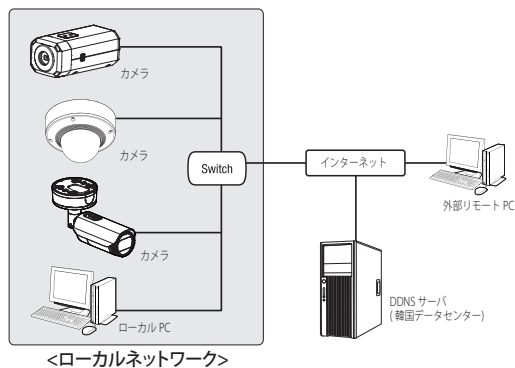
ネットワーク接続と設定

使用中のネットワーク環境に合わせてネットワークを設定することができます。

カメラを直接ローカルネットワークに接続する

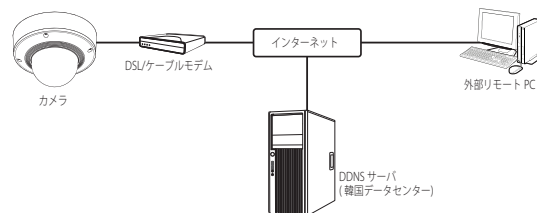
LAN のローカル PC からカメラに接続する

1. ローカル PC でインターネットブラウザを起動します。
2. ブラウザのアドレスバーにカメラの IP アドレスを入力します。



- LAN ネットワーク範囲外の外部インターネットのリモート PC は、ポート転送がきちんと設定されていない場合やファイアウォールが有効の場合には、設置済みカメラとインターネット接続ができない場合があります。この場合、ネットワーク管理者にお問い合わせください。
- 工場出荷時の設定で、IP アドレスが DHCP サーバーから自動的に割り当てられます。使用可能な DHCP サーバーがない場合、IP アドレスは 192.168.1.100 に設定されます。IP アドレスを変更するためには、Device Manager を使用してください。Device Manager の使い方は、「**Device Manager を使用する**」をご参照ください。(48 ページ)

カメラを直接 DHCP ベースの DSL/ケーブルモデムに接続する



1. ユーザーの PC をネットワークカメラに直接接続します。
2. Device Manager を使用してカメラの IP アドレスをユーザーのパソコンからインターネットブラウザで接続できる IP アドレスに変更してください。
3. インターネットブラウザを使用して Web Viewer と接続します。
4. [設定] ページに移動します。
5. [ネットワーク] - [DDNS] に移動し、DDNS の設定を行います。
6. [Basic] - [IP & ポート] へ移動し、IP 方式を [DHCP] に設定します。
7. PC から取り外したカメラを直接モデムに接続します。
8. カメラを再起動します。

- DDNS の設定方法についての情報は、ウェブビューアのオンラインヘルプを参照してください。
- IP フォーマットの設定方法についての情報は、ウェブビューアのオンラインヘルプを参照してください。

ネットワーク接続と設定

DEVICE MANAGERを使用する

- Device Manager プログラムは、ハンファテックウインのウェブサイト(<http://www.hanwha-security.com>)に接続して<技術ガイド>-<Online Tool>でダウンロードすることができます。
- Device Managerの詳しい使い方は、トップの<ヘルプ>メニューで確認することができます。

自動にカメラを検索する

Device ManagerがインストールされたPCと同じネットワークにカメラが接続された場合、検索機能でネットワークカメラを探すことができます。

1. Device Managerのトップで<検索>をクリックしてください。
2. 検索リストで検索したいカメラが表示されているか確認してください。
 - カメラに付着されたステッカーでMACアドレスを確認してください。

IPアドレスを設定する

カメラのネットワーク設定を変更するためには、<状態>項目に<Login OK>と表示される必要があります。Device Managerのトップで<認証>をクリックすると、ログインできます。

Static IPを設定する

IPアドレス&ポート情報を手動で入力して設定します。

1. 検索リストでIP設定を変更するカメラをクリックしてください。
2. Device Managerのトップで<IP割り当て>をクリックしてください。
3. <IPアドレス手動割当>を選択してください。
 - カメラのIP情報が既存に設定されている値で表示されます。
4. IP関連項目&ポート関連項目を入力してください。

ブロードバンドルーターを使用しない場合

ネットワークマネージャーに<IPアドレス>、<Subnet Mask>、<Gateway>の設定値をお問い合わせください。

- HTTP ポート：インターネットブラウザを使用してカメラにアクセスする際に使用します。初期設定は80です。
- RTSPポート：リアルタイム・ストリーミングを制御するポートであり、初期値は554です。

ブロードバンドルーター使用の場合

- IP Address：ブロードバンドルーターによって指定されたIP範囲でアドレスを入力します。
例) 192.168.1.2~254、192.168.0.2~254、192.168.XXX.2~254
- Subnet Mask：ブロードバンドルーターの<Subnet Mask>が、カメラの<Subnet Mask>となります。
- Gateway：ブロードバンドルーターの<Local IP Address>が、カメラの<Gateway>となります。

- 設定は、接続しているブロードバンドルーターのモデルによって異なる場合があります。詳細は、該当するルーターのユーザーマニュアルを参照してください。
- ブロードバンドルーターのポートフォワーディングの詳細については、「ポートフォワード (ポートマッピング)の設定」を参照してください。(50ページ)

ブロードバンドルーターに複数のカメラが接続されている場合

IPに関する設定と、ポートに関する設定は別々に設定します。

例)

	カテゴリ	カメラ #1	カメラ #2
IP設定	IPアドレス Subnet Mask Gateway	192.168.1.100 255.255.255.0 192.168.1.1	192.168.1.101 255.255.255.0 192.168.1.1
ポート設定	HTTP ポート RTSP ポート	8080 554	8081 555

- <HTTP Port>が80以外に設定されている場合、カメラにアクセスするには、インターネットブラウザのアドレスバーで<Port>番号を設定する必要があります。
例) <http://IPアドレス:HTTPポート>
<http://192.168.1.100:8080>

5. [適用]ボタンをクリックしてください。
6. 成功確認メッセージが表示されたら、[OK]ボタンをクリックしてください。

ダイナミックIPを設定する

IPアドレスをDHCPで自動的に割り当てられます。

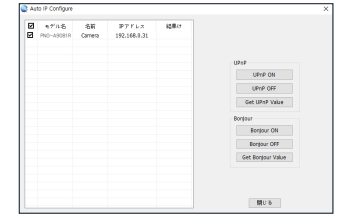
- 動的IP環境の例
 - カメラに接続しているブロードバンドルーターが、DHCPサーバーでIPアドレスを割り当てられている場合
 - DHCPプロトコルを使用して直接カメラをモデムに接続する場合
 - IPがLAN経由で内部DHCPサーバーに割り当てられている場合

1. 検索リストでIP設定を変更するカメラをクリックしてください。
2. Device Managerのトップで<IP割り当て>をクリックしてください。
3. <IPアドレス自動割当(DHCP)>を選択してください。
4. [適用]ボタンをクリックしてください。
5. 成功確認メッセージが表示されたら、[OK]ボタンをクリックしてください。



自動にIPを設定する

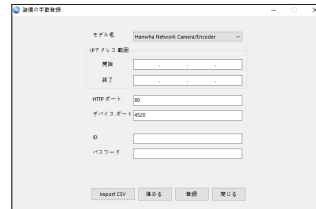
1. 検索リストでIPを自動に設定するカメラをクリックしてください。
2. Device Managerのトップで<+>をクリックしてください。
 - デバイス設定メニューが表示されます。
3. デバイス設定メニューで<Auto IP Configure (IP自動設定)>をクリックしてください。
4. [閉じる]ボタンをクリックしてください。



手動でカメラを登録する

検索機能でカメラを探せなかったり、外部ネットワークにカメラを接続した場合、IP情報を手動で入力してリモートでカメラを探して登録することができます。

1. Device Managerのトップで<デバイス追加>-<装備の手動登録>をクリックしてください。
2. 検索するIPアドレス範囲を入力してください。
3. 登録するカメラの<モデル名>を選択してHTTPポート、ID、パスワードを入力してください。
4. [登録]ボタンをクリックしてください。
5. リストでカメラが登録されているか確認してください。
 - カメラに付着されたステッカーでMACアドレスを確認してください。



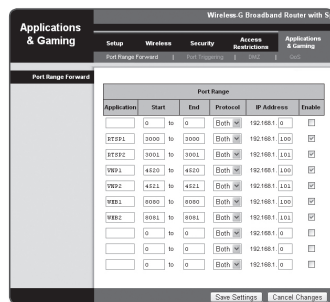
ネットワーク接続と設定

ポートフォワード(ポートマッピング)の設定

カメラを接続したままブロードバンドルーターをインストールした場合は、ブロードバンドルーター上でポート範囲フォワードを設定し、ルーター内のカメラにリモートPCからアクセスできるようにする必要があります。

手動ポートフォワード

- ブロードバンドルーターの設定メニューから**Applications & Gaming** - **Port Range Forward**を選択します。サードパーティのブロードバンドルーター用にポートフォワードを設定するには、ブロードバンドルーターのユーザーマニュアルを参照してください。
- ブロードバンドルーターに接続されている各カメラ用の、**TCP**と**UDP Port**を選択します。IPルーターに設定する各ポートの数字は、カメラWeb Viewerの**設定** - **Basic** - **IP & ポート**に指定されるポート番号に合わせて設定しなければなりません。
- 完了後、**[Save Settings]**をクリックします。設定が保存されます。

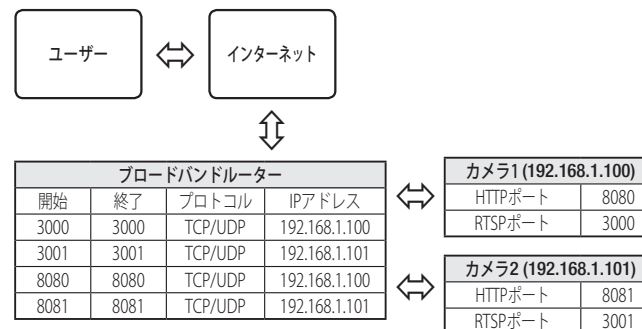


- ポートフォワーディング設定の説明は、CISCO IPのルーターで設定した例示です。
- 設定は、接続しているブロードバンドルーターのモデルによって異なる場合があります。詳細は、該当するルーターのユーザーマニュアルを参照してください。

複数のネットワークカメラに関するポートフォワード範囲設定

- ブロードバンドルーターデバイスの設定Webページで、ポートフォワーディングのルールを設定することができます。
- ユーザーは、カメラ設定画面を使って各ポートを変更できます。


カメラ1とカメラ2がルーターに接続されている場合:



- ルーターがUPnP (ユニバーサルプラグアンドプレイ) 機能をサポートしている場合、ポートフォワーディングを追加ルーターの設定なしで行うことができます。ネットワークカメラ接続後、メニューから、**設定** -> **ネットワーク** -> **DDNS**の**Wisenet DDNS**の**クイック接続**のチェックボックスを選択します。

共有ローカルPCからカメラへの接続

1. Device Managerを起動してください。
接続されているカメラをスキャンし、そのリストを表示します。
2. アクセスするカメラをダブルクリックします。
インターネットブラウザが起動し、カメラに接続されます。

 ■ インターネットブラウザのアドレスバーに検出されたカメラのIPアドレスを入力し、カメラにアクセスすることもできます。

リモートPCからインターネット経由でのカメラへの接続

IPルーターのネットワーククラスター外部のリモートパソコンでは、ユーザーがカメラのDDNS URLを用いてIPルーターのネットワーク内部にあるカメラにアクセスすることができます。

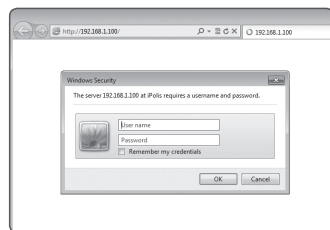
1. ブロードバンドルーターのネットワーク内のカメラへアクセスする前に、ブロードバンドルーターにポートフォワードを設定しておく必要があります。
2. リモートPCから、インターネットブラウザを起動しカメラのDDNS URLアドレスを入力するか、アドレスバーでブロードバンドルーターのIPアドレスを入力します。
例) `http://ddns.hanwha-security.com/ID`

 ■ Wisenet DDNSを有効にするためには、Wisenet DDNSのウェブサイト(<http://ddns.hanwha-security.com>)で会員登録した後、**[My DDNS]>[製品登録]**で先に製品を登録する必要があります。

カメラへの接続

通常の方法

1. インターネットブラウザを起動します。
2. アドレスバーにカメラのIPアドレスを入力します。
例) IPアドレス(IPv4) : 192.168.1.100 → http://192.168.1.100
- ログインダイアログが表示されます。
 - IPアドレス(IPv6) : 2001:230:abcd:ffff:0000:0000:ffff:1111
→ http://[2001:230:abcd:ffff:0000:0000:ffff:1111] - ログインダイアログが表示されます。



HTTPポートが80以外の場合

1. インターネットブラウザを起動します。
2. アドレスバーにカメラのIPアドレスとHTTPのポート番号を入力します。
例) IPアドレス : 192.168.1.100:HTTPのポート番号(8080)
→ http://192.168.1.100:8080 - ログインダイアログが表示されます。

URLを使用する場合

1. インターネットブラウザを起動します。
2. アドレスバーにカメラのDDNS URLを入力します。
例) URLアドレス : http://ddns.hanwha-security.com/ID
- ログインダイアログが表示されます。

! ■ ネットワーク接続はLANのみの環境では無効になります。

UPnPを介した接続

1. UPnPプロトコルをサポートするために、クライアントまたはオペレーティングシステムを実行します。
2. 検索するカメラ名をクリックします。
Windowsオペレーティングシステムでは、ネットワークメニューから検索したカメラ名をクリックします。
 - ログインウィンドウが表示されます。

Bonjourを介した接続

1. Bonjourプロトコルをサポートするためにクライアントまたはオペレーティングシステムを実行します。
2. 検索するカメラ名をクリックします。
Macのオペレーティングシステムでは、SafariのBonjourタブから検索したカメラ名をクリックします。
 - ログインウィンドウが表示されます。

DDNSアドレスを確認するには

カメラを直接DHCPベースのケーブルモデムまたはDSLモデムに接続すると、ISP(ユーザーが契約する会社)に接続を試行する度にIPアドレスが変更されます。
その場合、DDNSによるIPアドレスの変更は通知されません。

動的なIPベースのデバイスをDDNSサーバーに登録すると、そのデバイスにアクセスするときに、変更されたIPを簡単に確認することができます。
使用するデバイスを<DDNS>サーバーに登録するには、http://ddns.hanwha-security.comにアクセスして最初にデバイスを登録し、Web Viewerの<ネットワーク> - <DDNS>を<Wisenet DDNS>に設定し、DDNS登録に使用した<製品ID>を指定します。

パスワード設定

本製品を初めて使用する場合、ログインパスワードを登録する必要があります。

- 新しいパスワードが8~9桁の場合、以下のうち3種類以上を使用する必要があります：大文字/小文字、数字、特殊文字。パスワードが10~15桁の場合、2種類以上を使用する必要があります。
 - 認められている特別文字：~!@\$%^&*()_+=[]{}?/
- 安全性を高めるため、同じ文字を繰り返したり、キーボード上の連続した文字を入力したりするのはお勧めしません。
- パスワードをなくした場合、[RESET]を押して製品を初期化します。そのため、メモ帳を利用したり、記憶したりして、パスワードをなくさないようにしてください。

ログイン

カメラにアクセスするたびに、ログインウィンドウが表示されます。ユーザーIDとパスワードを入力してカメラにアクセスします。

1. <User name>入力ボックスに"admin"と入力します。
管理者ID"admin"は、確定されており変更できません。
2. <Password>入力欄に入力します。
3. [OK]をクリックします。
正常にログインすると、Live Viewerの画面が表示されます。

- カメラのWebビューアーにアクセスする場合は、画像データが暗号化されているか確認し、セキュリティに特にご注意ください。

- 入力完了時に、"Remember my credentials"オプションをチェックしておくと、次回からはログイン情報の入力を求められることなく自動的にログインします。
- 画面サイズが100%である場合、映像画質が最高の状態になります。倍率を小さくすると、境界線上の画像がカットされます。

カメラ・ウェブビューアーの設定

1. [設定 (⚙️)]アイコンをクリックします。
2. 設定画面が現れます。
3. カメラの基本情報、ビデオ、オーディオ、ネットワーク、イベント、分析、ネットワーク全体のシステムの設定を構成することができます。
4. <ヘルプ (📖)>をクリックして、それぞれの機能の詳細説明を表示します。

付録

仕様

項目		説明
		PNV-A9081R
映像	撮像素子	1/1.8" 8MP CMOS
	有効画素数	3864(H) x 2180(V)
	最低照度	色: 0.05 Lux(F1.6, 1/30sec) B/W: 0 Lux(IR LED on)
	ビデオ出力	CVBS: 1.0 Vp-p / 75Ω composite, 720x480(N), 720x576(P)インストール用 USB: Micro USBタイプB, 1280X720、インストール用
レンズ	焦点距離(ズーム倍率)	4.5~10mm(2.2倍、可変フォーカスレンズ)
	最大口径比	F1.6(広角)~F2.65(望遠)
	画角	H: 101.4°(広角) ~ 45.5°(望遠) V: 53.6°(広角) ~ 25.5°(望遠) D: 120.7°(広角) ~ 52.3°(望遠)
	最短被写体距離	0.5m (1.64ft)
	焦点制御	単一フォーカス
	レンズタイプ	DCオートアイリス、Pアイリス
パン/チルト/回転	パン/チルト/回転範囲	0°~360° / -45°~85° / 0°~355°
操作関係	夜間可視距離	30 m(98.42 ft)
	カメラタイトル	オン/オフ(最大85文字表示)
	昼/夜	オート(ICR)
	逆光補正	BLC, WDR, SSSDR
	ワイドダイナミックレンジ	120dB
	デジタルノイズリダクション	SSNR V
	デジタル手ブレ補正	対応(ビルドインジャイロセンサー)
	モーション検知	8つ、多角形対応

項目	説明	
	PNV-A9081R	
操作関係	プライバシーマスク	6つ、四角対応 - カラー: グレー/グリーン/レッド/ブルー/ブラック/ホワイト
	利得調整	低/中/高
	ホワイトバランス	ATW/AWC/手動/屋内/屋外
	LDC	対応
	電子シャッター速度	最小値/最大値/ちらつき防止 (1/5~1/12,000秒)
	デジタルPTZ	サポート (プリセット、グループ)
	映像角度	フリップ、ミラー、玄関ビュー(90°/270°)
	インテリジェント分析	- 対象物タイプ分類: 人/顔/車両/ナンバープレート、アトリビュート含み、対象物別のベストショット - AI engineベース分析イベント: 対象物検知、方向検知、デジタルオートトラッキング、出/入検知、うろつく、パーチャルライン - 分析イベント: 焦点ぼけ検知、モーション検知、発生/消滅検知、タンパリング、音声検知、サウンド分類、衝撃検知
	ビジネスインテリジェンス	人数カウント、キュー管理、ヒートマップ(AI engine)
	アラーム入出力	入力1つ / 出力1つ / 12V電源(Max. 50mA) 1つ
	アラームトリガー	インテリジェント分析、ネットワーク切断、アラーム入力
	アラームイベント	<ul style="list-style-type: none"> FTP、電子メールによるファイルのアップロード 電子メール、による通知 アラームトリガー発生時、SD/SDHC/SDXCまたはNASに録画 外部アラーム出力 ハンドオーバー
	オーディオ入力	選択可能(マイク入力/ライン入力) 供給電圧: 2.5VDC (4mA)、入力インピーダンス: 約2Kオーム
	オーディオ出力	ライン出力端子、最大出力: 1Vrms

項目	説明	
	PNV-A9081R	
イーサネット	RJ-45 (10/100BASE-T)	
ビデオ圧縮	H.265/H.264: Main/High、MJPEG	
解像度	3840x2160, 3072x1728, 2592x1944, 2688x1520, 2560x1440, 2048x1536, 1920x1080, 1600x1200, 1280x1024, 1280x960, 1280x720, 1024x768, 800x600, 800x448, 720x576, 720x480, 640x480, 640x360	
最大フレームレート	H.265/H.264: 最大30fps/25fps(60Hz/50Hz) MJPEG: 最大15fps/12fps(60Hz/50Hz)	
スマートコーデック	マニュアル(5つエリア)、WiseStream II	
ビデオ品質調整	H.264/H.265: ターゲットビットレートレベル制御 MJPEG: 画質レベル制御	
ビットレート制御	H.264/H.265: CBR または VBR MJPEG: VBR	
ストリーミング	Unicast(20 users) / Multicast Multiple streaming(Up to 3 profiles)	
オーディオ圧縮	G.711 μ-法/G.726 選択可 G.726 (ADPCM) 8KHz、G.711 8KHz G.726: 16Kbps、24Kbps、32Kbps、40Kbps AAC-LC: 16KHzで48Kbps	

ネットワーク

項目	説明		
	PNV-A9081R		
ネットワーク	プロトコル	IPv4, IPv6, TCP/IP, UDP/IP, RTP(UDP), RTP(TCP), RTCP, RTSP, NTP, HTTP, HTTPS, SSL/TLS, DHCP, FTP, SMTP, ICMP, IGMP, SNMPv1/v2c/v3(MIB-2), ARP, DNS, DDNS, QoS, UPnP, Bonjour, LLDP, SRTP (TCP, UDP Unicast)	
	セキュリティ	HTTPS (SSL) ログイン認証 ダイジェストログイン認証 IPアドレスフィルタリング ユーザーアクセスログ 802.1X認証方式 (EAP-TLS, EAP-LEAP) デバイス証明書(Hanwha Techwin Root CA)	
	エッジストレージ	Micro SD/SDHC/SDXC 2スロット 512GB	
	アプリケーション・プログラミング・インターフェース	ONVIF Profile S/G/T SUNAPI(HTTP API) Wisenet Open Platform	
	Webページの言語	英語、韓国語、中国語、フランス語、イタリア語、スペイン語、ドイツ語、日本語、ロシア語、スウェーデン語、ポルトガル語、チェコ語、ポーランド語、トルコ語、オランダ語、ハンガリー語、ギリシャ語	
	Web Viewer	対応OS: Windows 8.1, 10, Mac OS X 10.12, 10.13, 10.14 推奨するブラウザ: Google Chrome 対応ブラウザ: MS Explorer11, MS Edge, Mozilla Firefox (Windows 64ビットのみ), Apple Safari (Mac OS Xでのみサポート)	
	メモリー	4096MB RAM, 512MB Flash	
	環境関係	動作温度/湿度	-40°C ~ +55°C (-40°F ~ +131°F) / RH90%以下 * 起動は-30°C以上の環境で行わなければなりません
		保存温度/湿度	-50°C ~ +60°C (-58°F ~ +140°F) / RH90%以下
		規格認証	IP66/IP67/IP6K9K, IK10+, NEMA4X
電気関係	電源	PoE+(IEEE802.3at), 12VDC	
	消費電力	PoE+: 最大20.0 W、標準17.0 W 12VDC: 最大18.7 W、標準15.0 W	
メカニカル	色/材質	白/アルミ	
	RALコード	RAL9003	
	製品サイズ/重量	Ø180 x 125 mm(7.09 x 4.92"), 1.90 kg(4.19 lb)	

項目	説明	
	PND-A9081RV	
映像	撮像素子	1/1.8" 8MP CMOS
	有効画素数	3864(H) x 2180(V)
	最低照度	色:0.05 Lux(F1.6, 1/30sec) B/W:0 Lux(IR LED on)
	ビデオ出力	CVBS: 1.0 Vp-p / 75Ω composite, 720x480(N), 720x576(P)インストール用 USB: Micro USBタイプB, 1280X720, インストール用
レンズ	焦点距離(ズーム倍率)	4.5~10mm(2.2倍、可変フォーカスレンズ)
	最大口径比	F1.6(広角)~F2.65(望遠)
	画角	H: 101.4°(広角) ~ 45.5°(望遠) V: 53.6°(広角) ~ 25.5°(望遠) D: 120.7°(広角) ~ 52.3°(望遠)
	最短被写体距離	0.5m (1.64ft)
	焦点制御	単一フォーカス
	レンズタイプ	DCオートアイリス、Pアイリス
パン/チルト/回転	パン/チルト/回転範囲	0°~360° / -45°~85° / 0°~355°
操作関係	夜間可視距離	30 m(98.42 ft)
	カメラタイトル	オン/オフ(最大85文字表示)
	昼/夜	オート(ICR)
	逆光補正	BLC, WDR, SDR
	ワイドダイナミックレンジ	120dB
	デジタルノイズリダクション	SSNR V
	デジタル手ブレ補正	対応(ビルドインジャイロセンサー)
	モーション検知	8つ、多角形対応

項目	説明	
	PND-A9081RV	
操作関係	プライバシーマスク	6つ、四角対応 - カラー: グレー/グリーン/レッド/ブルー/ブラック/ホワイト
	利得調整	低/中/高
	ホワイトバランス	ATW/AWC/手動/屋内/屋外
	コントラスト	レベル調整
	LDC	対応
	電子シャッター速度	最小値/最大値/ちらつき防止 (1/5~1/12,000秒)
	デジタルPTZ	サポート (プリセット、グループ)
	映像角度	フリップ、ミラー、玄関ビュー(90°/270°)
	インテリジェント分析	- 対象物タイプ分類: 人/顔/車両/ナンバープレート、アトリビュート含み、対象物別のベストショット - AI engineベース分析イベント: 対象物検知、方向検知、デジタルオートトラッキング、出/入検知、うろつく、バーチャルライン - 分析イベント: 焦点ぼけ検知、モーション検知、発生/消滅検知、タンパリング、音声検知、サウンド分類、衝撃検知
	ビジネスインテリジェンス	人数カウント、キュー管理、ヒートマップ(AI engine)
	アラーム入出力	入力1つ / 出力1つ / 12V電源(Max. 50mA) 1つ
	アラームトリガー	インテリジェント分析、ネットワーク切断、アラーム入力
	アラームイベント	<ul style="list-style-type: none"> FTP、電子メールによるファイルのアップロード 電子メールによる通知 アラームトリッカー発生時、SD/SDHC/SDXCまたはNASに録画 外部アラーム出力 ハンドオーバー
	オーディオ入力	選択可能(マイク入力/ライン入力/内蔵マイク) 供給電圧: 2.5VDC (4mA)、入力インピーダンス: 約2Kオーム
オーディオ出力	ライン出力端子、最大出力: 1Vrms	

項目	説明	
	PND-A9081RV	
イーサネット	RJ-45 (10/100BASE-T)	
ビデオ圧縮	H.265/H.264: Main/High、MJPEG	
解像度	3840x2160, 3072x1728, 2592x1944, 2688x1520, 2560x1440, 2048x1536, 1920x1080, 1600x1200, 1280x1024, 1280x960, 1280x720, 1024x768, 800x600, 800x448, 720x576, 720x480, 640x480, 640x360	
最大フレームレート	H.265/H.264: 最大30fps/25fps(60Hz/50Hz) MJPEG: 最大15fps/12fps(60Hz/50Hz)	
スマートコーデック	マニュアル(5つエリア)、WiseStream II	
ビデオ品質調整	H.264/H.265: ターゲットビットレートレベル制御 MJPEG: 画質レベル制御	
ビットレート制御	H.264/H.265: CBR または VBR MJPEG: VBR	
ストリーミング	Unicast(20 users) / Multicast Multiple streaming(Up to 3 profiles)	
オーディオ圧縮	G.711 μ法/G.726 選択可 G.726 (ADPCM) 8KHz、G.711 8KHz G.726: 16Kbps、24Kbps、32Kbps、40Kbps AAC-LC: 16KHzで48Kbps	

ネットワーク

項目	説明	
	PND-A9081RV	
ネットワーク	プロトコル	IPv4, IPv6, TCP/IP, UDP/IP, RTP(UDP), RTP(TCP), RTCP, RTSP, NTP, HTTP, HTTPS, SSL/TLS, DHCP, FTP, SMTP, ICMP, IGMP, SNMPv1/v2c/v3(MIB-2), ARP, DNS, DDNS, QoS, UPnP, Bonjour, LLDP, SRTP (TCP, UDP Unicast)
	セキュリティ	HTTPS (SSL) ログイン認証 ダイジェストログイン認証 IPアドレスフィルタリング ユーザーアクセスログ 802.1X認証方式 (EAP-TLS, EAP-LEAP) デバイス証明書(Hanwha Techwin Root CA)
	エッジストレージ	Micro SD/SDHC/SDXC 2スロット 512GB
	アプリケーション・プログラミング・インターフェース	ONVIF Profile S/G/T SUNAPI(HTTP API) Wisenet Open Platform
	Webページの言語	英語、韓国語、中国語、フランス語、イタリア語、スペイン語、ドイツ語、日本語、ロシア語、スウェーデン語、ポルトガル語、チェコ語、ポーランド語、トルコ語、オランダ語、ハンガリー語、ギリシャ語
	Web Viewer	対応OS: Windows 8.1, 10, Mac OS X 10.12, 10.13, 10.14 推奨するブラウザ: Google Chrome 対応ブラウザ: MS Explorer11, MS Edge, Mozilla Firefox (Windows 64ビットのみ), Apple Safari (Mac OS Xでのみサポート)
	メモリー	4096MB RAM, 512MB Flash
環境関係	動作温度/湿度	-25°C ~ +50°C (-13°F ~ +122°F) / RH90%以下(IR LEDオン) -25°C ~ +55°C (-13°F ~ +131°F) / RH90%以下(IR LEDオフ)
	保存温度/湿度	-50°C ~ +60°C (-58°F ~ +140°F) / RH90%以下
	規格認証	IP52, IK10
電気関係	電源	PoE+(IEEE802.3at), 12VDC
	消費電力	PoE+: 最大20.0 W、標準16.0 W 12VDC: 最大17.7 W、標準14.0 W
メカニカル	色/材質	白/アルミ
	RALコード	RAL9003
	製品サイズ/重量	Ø160 x 125 mm(6.30 x 4.92"), 1.60 kg(3.53 lb)

項目	説明	
	PND-A9081RF	
映像	撮像素子	1/1.8" 8MP CMOS
	有効画素数	3864(H) x 2180(V)
	最低照度	色:0.05 Lux(F1.6, 1/30sec) B/W:0 Lux(IR LED on)
	ビデオ出力	CVBS: 1.0 Vp-p / 75Ω composite, 720x480(N), 720x576(P)インストール用 USB: Micro USBタイプB, 1280X720, インストール用
レンズ	焦点距離(ズーム倍率)	4.5~10mm(2.2倍、可変フォーカスレンズ)
	最大口径比	F1.6(広角)~F2.65(望遠)
	画角	H: 101.4°(広角) ~ 45.5°(望遠) V: 53.6°(広角) ~ 25.5°(望遠) D: 120.7°(広角) ~ 52.3°(望遠)
	最短被写体距離	0.5m (1.64ft)
	焦点制御	単一フォーカス
	レンズタイプ	DCオートアイリス、Pアイリス
パン/チルト/回転	パン/チルト/回転範囲	0°~360° / -45°~85° / 0°~355°
操作関係	夜間可視距離	30 m(98.42 ft)
	カメラタイトル	オン/オフ(最大85文字表示)
	昼/夜	オート(ICR)
	逆光補正	BLC, WDR, SDR
	ワイドダイナミックレンジ	120dB
	デジタルノイズリダクション	SSNR V
	デジタル手ブレ補正	対応(ビルドインジャイロセンサー)
	モーション検知	8つ、多角形対応

項目	説明	
	PND-A9081RF	
操作関係	プライバシーマスク	6つ、四角対応 - カラー: グレー/グリーン/レッド/ブルー/ブラック/ホワイト
	利得調整	低/中/高
	ホワイトバランス	ATW/AWC/手動/屋内/屋外
	コントラスト	レベル調整
	LDC	対応
	電子シャッター速度	最小値/最大値/ちらつき防止 (1/5~1/12,000秒)
	デジタルPTZ	サポート (プリセット、グループ)
	映像角度	フリップ、ミラー、玄関ビュー(90°/270°)
	インテリジェント分析	- 対象物タイプ分類: 人/顔/車両/ナンバープレート、アトリビュート含み、対象物別のベストショット - AI engineベース分析イベント: 対象物検知、方向検知、デジタルオートトラッキング、出/入検知、うろつく、バーチャルライン - 分析イベント: 焦点ぼけ検知、モーション検知、発生/消滅検知、タンパリング、音声検知、サウンド分類、衝撃検知
	ビジネスインテリジェンス	人数カウント、キュー管理、ヒートマップ(AI engine)
	アラーム入出力	入力1つ / 出力1つ / 12V電源(Max. 50mA) 1つ
	アラームトリガー	インテリジェント分析、ネットワーク切断、アラーム入力
アラームイベント	<ul style="list-style-type: none"> FTP、電子メールによるファイルのアップロード 電子メールによる通知 アラームトリガー発生時、SD/SDHC/SDXCまたはNASに録画 外部アラーム出力 ハンドオーバー 	
オーディオ入力	選択可能(マイク入力/ライン入力) 供給電圧: 2.5VDC (4mA)、入力インピーダンス: 約2Kオーム	
オーディオ出力	ライン出力端子、最大出力: 1Vrms	

項目	説明	
	PND-A9081RF	
イーサネット	RJ-45 (10/100BASE-T)	
ビデオ圧縮	H.265/H.264: Main/High、MJPEG	
解像度	3840x2160, 3072x1728, 2592x1944, 2688x1520, 2560x1440, 2048x1536, 1920x1080, 1600x1200, 1280x1024, 1280x960, 1280x720, 1024x768, 800x600, 800x448, 720x576, 720x480, 640x480, 640x360	
最大フレームレート	H.265/H.264: 最大30fps/25fps(60Hz/50Hz) MJPEG: 最大15fps/12fps(60Hz/50Hz)	
スマートコーデック	マニュアル(5つエリア)、WiseStream II	
ビデオ品質調整	H.264/H.265: ターゲットビットレートレベル制御 MJPEG: 画質レベル制御	
ビットレート制御	H.264/H.265: CBR または VBR MJPEG: VBR	
ストリーミング	Unicast(20 users) / Multicast Multiple streaming(Up to 3 profiles)	
オーディオ圧縮	G.711 μ-法/G.726 選択可 G.726 (ADPCM) 8KHz、G.711 8KHz G.726: 16Kbps、24Kbps、32Kbps、40Kbps AAC-LC: 16KHzで48Kbps	

ネットワーク

項目	説明		
	PND-A9081RF		
ネットワーク	プロトコル	IPv4, IPv6, TCP/IP, UDP/IP, RTP(UDP), RTP(TCP), RTCP, RTSP, NTP, HTTP, HTTPS, SSL/TLS, DHCP, FTP, SMTP, ICMP, IGMP, SNMPv1/v2c/v3(MIB-2), ARP, DNS, DDNS, QoS, UPnP, Bonjour, LLDP, SRTP (TCP, UDP Unicast)	
	セキュリティ	HTTPS (SSL) ログイン認証 ダイジェストログイン認証 IPアドレスフィルタリング ユーザーアクセスログ 802.1X認証方式 (EAP-TLS, EAP-LEAP) デバイス証明書(Hanwha Techwin Root CA)	
	エッジストレージ	Micro SD/SDHC/SDXC 2スロット 512GB	
	アプリケーション・プログラミング・インターフェース	ONVIF Profile S/G/T SUNAPI(HTTP API) Wisenet Open Platform	
	Webページの言語	英語、韓国語、中国語、フランス語、イタリア語、スペイン語、ドイツ語、日本語、ロシア語、スウェーデン語、ポルトガル語、チェコ語、ポーランド語、トルコ語、オランダ語、ハンガリー語、ギリシャ語	
	Web Viewer	対応OS: Windows 8.1, 10, Mac OS X 10.12, 10.13, 10.14 推奨するブラウザ: Google Chrome 対応ブラウザ: MS Explorer11, MS Edge, Mozilla Firefox (Windows 64ビットのみ), Apple Safari (Mac OS Xでのみサポート)	
	メモリー	4096MB RAM, 512MB Flash	
	環境関係	動作温度/湿度	-25°C ~ +50°C (-13°F ~ +122°F) / RH90%以下(IR LEDオン) -25°C ~ +55°C (-13°F ~ +131°F) / RH90%以下(IR LEDオフ)
		保存温度/湿度	-50°C ~ +60°C (-58°F ~ +140°F) / RH90%以下
		規格認証	IP52, IK10, Plenum rate
電気関係	電源	PoE+(IEEE802.3at), 12VDC	
	消費電力	PoE+: 最大20.0 W、標準16.0 W 12VDC: 最大17.7 W、標準14.0 W	
メカニカル	色/材質	白/アルミ	
	RALコード	RAL9003	
	製品サイズ/重量	Ø205 x 163 mm(8.07 x 6.42"), 1.95 kg(4.30 lb)	

項目	説明	
	PNO-A9081R	
映像	撮像素子	1/1.8" 8MP CMOS
	有効画素数	3864(H) x 2180(V)
	最低照度	色:0.05 Lux(F1.6, 1/30sec) B/W:0 Lux(IR LED on)
	ビデオ出力	CVBS: 1.0 Vp-p / 75Ω composite, 720x480(N), 720x576(P)インストール用 USB: Micro USBタイプB, 1280X720、インストール用
レンズ	焦点距離(ズーム倍率)	4.5~10mm(2.2倍、可変フォーカスレンズ)
	最大口径比	F1.6(広角)~F2.65(望遠)
	画角	H: 101.4°(広角) ~ 45.5°(望遠) V: 53.6°(広角) ~ 25.5°(望遠) D: 120.7°(広角) ~ 52.3°(望遠)
	最短被写体距離	0.5m (1.64ft)
	焦点制御	単一フォーカス
	レンズタイプ	DCオートアイリス、Pアイリス
	操作関係	夜間可視距離
カメラタイトル		オン/オフ(最大85文字表示)
昼/夜		オート(ICR)
逆光補正		BLC, WDR, SDR
ワイドダイナミックレンジ		120dB
デジタルノイズリダクション		SSNR V
デジタル手ブレ補正		対応(ビルドインジャイロセンサー)
モーション検知		8つ、多角形対応

項目	説明	
	PNO-A9081R	
操作関係	プライバシーマスク	6つ、四角対応 - カラー: グレー/グリーン/レッド/ブルー/ブラック/ホワイト
	利得調整	低/中/高
	ホワイトバランス	ATW/AWC/手動/屋内/屋外
	コントラスト	レベル調整
	LDC	対応
	電子シャッター速度	最小値/最大値/ちらつき防止 (1/5~1/12,000秒)
	デジタルPTZ	サポート (プリセット、グループ)
	映像角度	フリップ、ミラー、玄関ビュー(90°/270°)
	インテリジェント分析	- 対象物タイプ分類: 人/顔/車両/ナンバープレート、アトリビュート含み、対象物別のベストショット - AI engineベース分析イベント: 対象物検知、方向検知、デジタルオートトラッキング、出/入検知、うろつく、バーチャルライン - 分析イベント: 焦点ぼけ検知、モーション検知、発生/消滅検知、タンパリング、音声検知、サウンド分類、衝撃検知
	ビジネスインテリジェンス	人数カウント、キュー管理、ヒートマップ(AI engine)
	アラーム入出力	入力1つ / 出力1つ / 12V電源(Max. 50mA) 1つ
	アラームトリガー	インテリジェント分析、ネットワーク切断、アラーム入力
	アラームイベント	<ul style="list-style-type: none"> FTP、電子メールによるファイルのアップロード 電子メールによる通知 アラームトリッカー発生時、SD/SDHC/SDXCまたはNASに録画 外部アラーム出力 ハンドオーバー
	オーディオ入力	選択可能(マイク入力/ライン入力) 供給電圧: 2.5VDC (4mA)、入力インピーダンス: 約2Kオーム
オーディオ出力	ライン出力端子、最大出力: 1Vrms	

項目	説明	
	PNO-A9081R	
イーサネット	RJ-45 (10/100BASE-T)	
ビデオ圧縮	H.265/H.264: Main/High、MJPEG	
解像度	3840x2160, 3072x1728, 2592x1944, 2688x1520, 2560x1440, 2048x1536, 1920x1080, 1600x1200, 1280x1024, 1280x960, 1280x720, 1024x768, 800x600, 800x448, 720x576, 720x480, 640x480, 640x360	
最大フレームレート	H.265/H.264: 最大30fps/25fps(60Hz/50Hz) MJPEG: 最大15fps/12fps(60Hz/50Hz)	
スマートコーデック	マニュアル(5つエリア)、WiseStream II	
ビデオ品質調整	H.264/H.265: ターゲットビットレートレベル制御 MJPEG: 画質レベル制御	
ビットレート制御	H.264/H.265: CBR または VBR MJPEG: VBR	
ストリーミング	Unicast(20 users) / Multicast Multiple streaming(Up to 3 profiles)	
オーディオ圧縮	G.711 μ-法/G.726 選択可 G.726 (ADPCM) 8KHz、G.711 8KHz G.726: 16Kbps、24Kbps、32Kbps、40Kbps AAC-LC: 16KHzで48Kbps	

ネットワーク

項目	説明	
	PNO-A9081R	
ネットワーク	プロトコル	IPv4, IPv6, TCP/IP, UDP/IP, RTP(UDP), RTP(TCP), RTCP, RTSP, NTP, HTTP, HTTPS, SSL/TLS, DHCP, FTP, SMTP, ICMP, IGMP, SNMPv1/v2c/v3(MIB-2), ARP, DNS, DDNS, QoS, UPnP, Bonjour, LLDP, SRTP (TCP, UDP Unicast)
	セキュリティ	HTTPS (SSL) ログイン認証 ダイジェストログイン認証 IPアドレスフィルタリング ユーザーアクセスログ 802.1X認証方式 (EAP-TLS, EAP-LEAP) デバイス認証書(Hanwha Techwin Root CA)
	エッジストレージ	Micro SD/SDHC/SDXC 2スロット 512GB
	アプリケーション・プログラミング・インターフェース	ONVIF Profile S/G/T SUNAPI(HTTP API) Wisenet Open Platform
	Webページの言語	英語、韓国語、中国語、フランス語、イタリア語、スペイン語、ドイツ語、日本語、ロシア語、スウェーデン語、ポルトガル語、チェコ語、ポーランド語、トルコ語、オランダ語、ハンガリー語、ギリシャ語
	Web Viewer	対応OS: Windows 8.1, 10, Mac OS X 10.12, 10.13, 10.14 推奨するブラウザ: Google Chrome 対応ブラウザ: MS Explorer11, MS Edge, Mozilla Firefox (Windows 64ビットのみ)、Apple Safari (Mac OS Xでのみサポート)
	メモリー	4096MB RAM, 512MB Flash
環境関係	動作温度/湿度	-40°C ~ +55°C (-40°F ~ +131°F) / RH90%以下 * 起動は-30°C以上の環境で行わなければなりません
	保存温度/湿度	-50°C ~ +60°C (-58°F ~ +140°F) / RH90%以下
	規格認証	IP66/IP67, IK10, NEMA4X
電気関係	電源	PoE+(IEEE802.3at), 12VDC
	消費電力	PoE+: 最大20.0 W、標準17.0 W 12VDC: 最大18.0 W、標準16.0 W
メカニカル	色/材質	ダークグレー/アルミ
	製品サイズ/重量	Ø91.0x368.6mm (3.58"x14.51") (サンシールド除外)、重量: 2.48Kg (5.47lb)

付録

項目	説明	
	PNB-A9001	
映像	撮像素子	1/1.8" 8MP CMOS
	有効画素数	3864(H) x 2180(V)
	最低照度	色:0.065 Lux(F1.2, 1/30sec)
	ビデオ出力	CVBS: 1.0 Vp-p / 75Ω composite, 720x480(N), 720x576(P)インストール用 USB: Micro USBタイプB, 1280X720, インストール用
レンズ	焦点制御	単一フォーカス
	レンズタイプ	DCオートアイリス、Pアイリス、マニュアル、I-CS
	マウントタイプ	C/CS
操作関係	カメラタイトル	オン/オフ(最大85文字表示)
	昼/夜	オート(ICR)
	逆光補正	BLC, WDR, SDR
	ワイドダイナミックレンジ	120dB
	デジタルノイズリダクション	SSNR V
	デジタル手ブレ補正	対応(ビルドインジャイロセンサー)
	モーション検知	8つ、多角形対応
	プライバシーマスク	6つ、四角対応 - カラー: グレー/グリーン/レッド/ブルー/ブラック/ホワイト
	利得調整	低/中/高
	ホワイトバランス	ATW/AWC/手動/屋内/屋外
	LDC	対応

項目	説明	
	PNB-A9001	
操作関係	電子シャッター速度	最小値/最大値/ちらつき防止 (1/5~1/12,000秒)
	デジタルPTZ	サポート (プリセット、グループ)
	映像角度	フリップ、ミラー、玄関ビュー(90°/270°)
	インテリジェント分析	- 対象物タイプ分類: 人/顔/車両/ナンバープレート、アトリビュート含み、対象物別のベストショット - AI engineベース分析イベント: 対象物検知、方向検知、デジタルオートトラッキング、出/入検知、うろつく、バーチャルライン - 分析イベント: 焦点ぼけ検知、モーション検知、発生/消滅検知、タンパリング、音声検知、サウンド分類、衝撃検知
	ビジネスインテリジェンス	人数カウント、キュー管理、ヒートマップ(AI engine)
	シリアルインターフェイス	RS-485(Samsung-T, Pelco-D/P, Panasonic, Bosch, AD, GE, Vicon, Honeywell)
	アラーム入出力	入力1つ / 出力1つ / 12V電源(Max. 50mA) 1つ
	アラームトリガー	インテリジェント分析、ネットワーク切断、アラーム入力
	アラームイベント	<ul style="list-style-type: none"> FTP、電子メールによるファイルのアップロード 電子メールによる通知 アラームトリッカー発生時、SD/SDHC/SDXCまたはNASに録画 外部アラーム出力 ハンドオーバー
	オーディオ入力	選択可能(マイク入力/ライン入力/内蔵マイク) 供給電圧: 2.5VDC(4mA)、入力インピーダンス: 約2Kオーム
	オーディオ出力	ライン出力端子、最大出力: 1Vrms

項目	説明	
	PNB-A9001	
イーサネット	RJ-45 (10/100BASE-T)	
ビデオ圧縮	H.265/H.264: Main/High、MJPEG	
解像度	3840x2160, 3072x1728, 2592x1944, 2688x1520, 2560x1440, 2048x1536, 1920x1080, 1600x1200, 1280x1024, 1280x960, 1280x720, 1024x768, 800x600, 800x448, 720x576, 720x480, 640x480, 640x360	
最大フレームレート	H.265/H.264: 最大30fps/25fps(60Hz/50Hz) MJPEG: 最大15fps/12fps(60Hz/50Hz)	
スマートコーデック	マニュアル(5つエリア)、WiseStream II	
ビデオ品質調整	H.264/H.265: ターゲットビットレートレベル制御 MJPEG: 画質レベル制御	
ビットレート制御	H.264/H.265: CBR または VBR MJPEG: VBR	
ストリーミング	Unicast(20 users) / Multicast Multiple streaming(Up to 3 profiles)	
オーディオ圧縮	G.711 μ-法/G.726 選択可 G.726 (ADPCM) 8KHz、G.711 8KHz G.726: 16Kbps、24Kbps、32Kbps、40Kbps AAC-LC: 16KHzで48Kbps	
プロトコル	IPv4, IPv6, TCP/IP, UDP/IP, RTP(UDP), RTP(TCP), RTCP, RTSP, NTP, HTTP, HTTPS, SSL/TLS, DHCP, FTP, SMTP, ICMP, IGMP, SNMPv1/v2c/v3(MIB-2), ARP, DNS, DDNS, QoS, UPnP, Bonjour, LLDP, SRTP (TCP, UDP Unicast)	
セキュリティ	HTTPS(SSL) ログイン認証 ダイジェストログイン認証 IPアドレスフィルタリング ユーザーアクセスログ 802.1X認証方式 (EAP-TLS, EAP-LEAP) デバイス証明書(Hanwha Techwin Root CA)	
エッジストレージ	Micro SD/SDHC/SDXC 2スロット 512GB	

ネットワーク

項目	説明	
	PNB-A9001	
ネットワーク	アプリケーション・プログラミング・インターフェース	ONVIF Profile S/G/T SUNAPI(HTTP API) Wisenet Open Platform
	Webページの言語	英語、韓国語、中国語、フランス語、イタリア語、スペイン語、ドイツ語、日本語、ロシア語、スウェーデン語、ポルトガル語、チェコ語、ポーランド語、トルコ語、オランダ語、ハンガリー語、ギリシャ語
	Web Viewer	対応OS: Windows 8.1, 10, Mac OS X 10.12, 10.13, 10.14 推奨するブラウザ: Google Chrome 対応ブラウザ: MS Explorer11, MS Edge, Mozilla Firefox (Windows 64ビットのみ), Apple Safari (Mac OS Xでのみサポート)
	メモリー	4096MB RAM, 512MB Flash
環境関係	動作温度/湿度	-10°C ~ +55°C (+14°F ~ +131°F) / RH90%以下
	保存温度/湿度	-50°C ~ +60°C (-58°F ~ +140°F) / RH90%以下
電気関係	電源	PoE+(IEEE802.3at), 12VDC
	消費電力	PoE+: 最大16.5 W、標準12.5 W 12VDC: 最大13.5 W、標準10.8 W
メカニカル	色/材質	黒/アルミ
	製品サイズ/重量	81 x 67 x 165 mm (3.19 x 2.64 x 6.48"), 重量: 0.88 kg(1.94 lb)

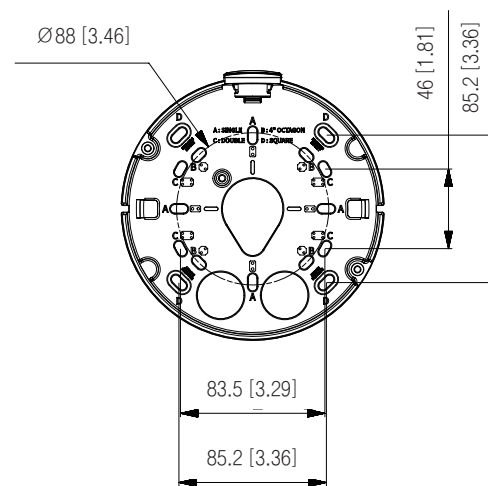
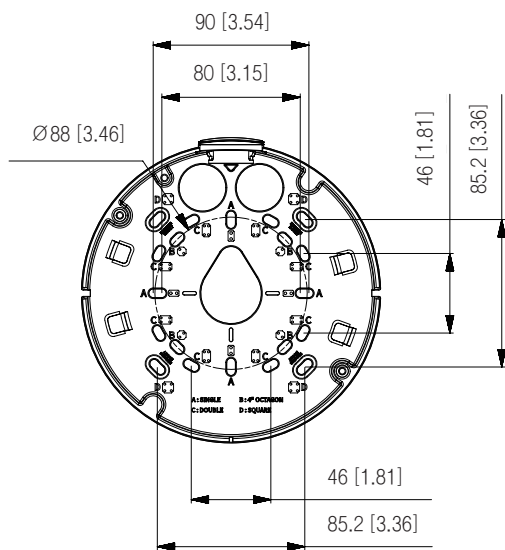
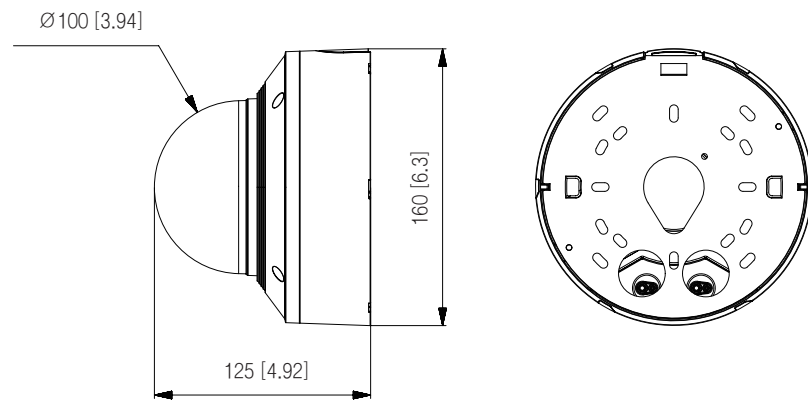
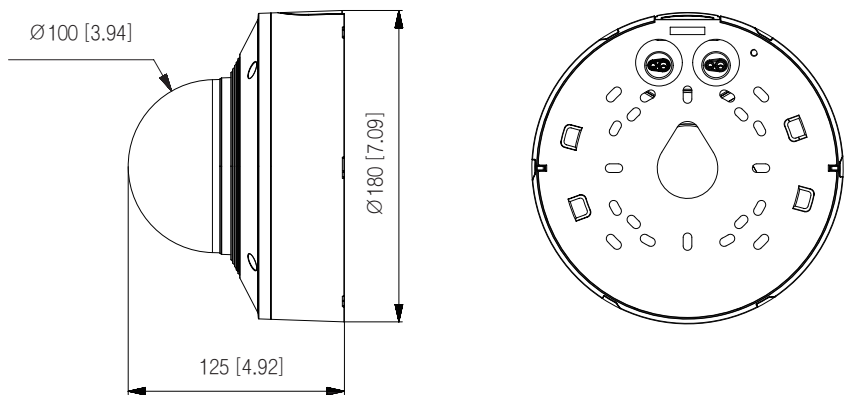
製品ビュー

PND-A9081RV

単位: mm[インチ]

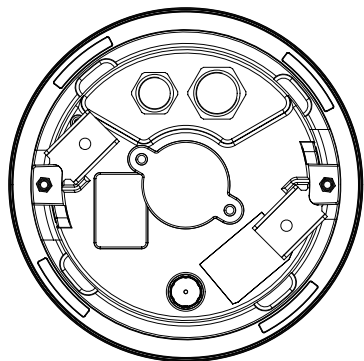
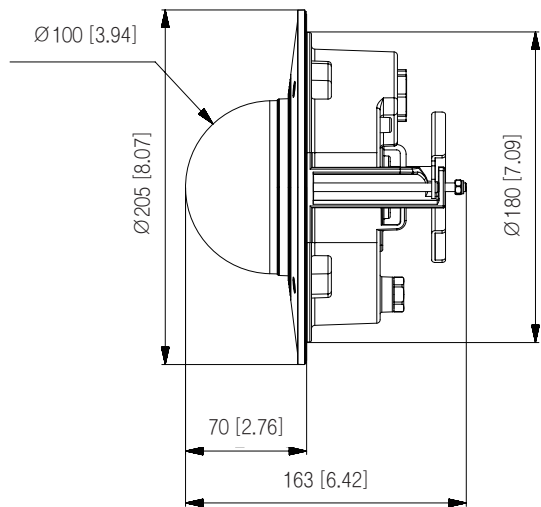
PNV-A9081R

単位: mm[インチ]



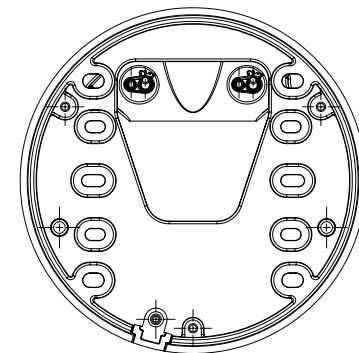
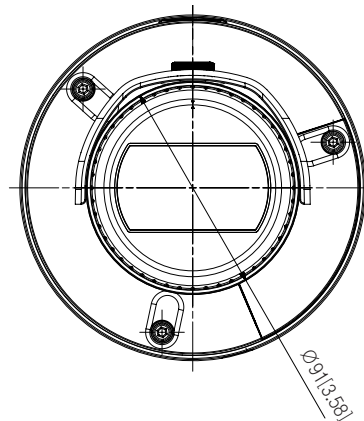
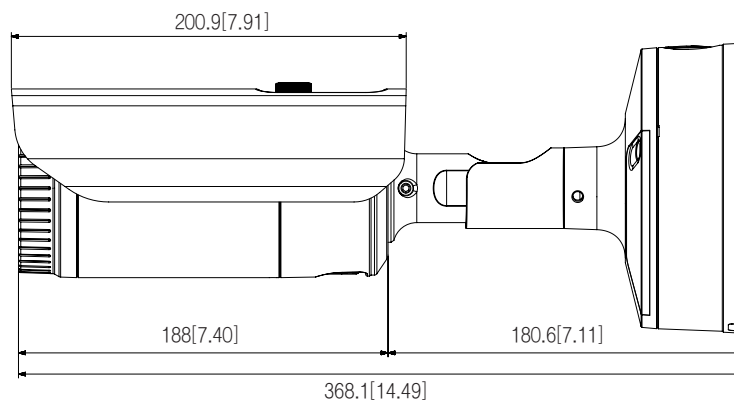
PND-A9081RF

単位: mm[インチ]



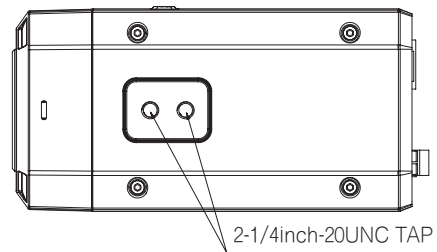
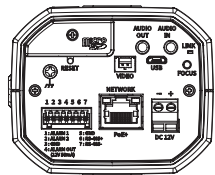
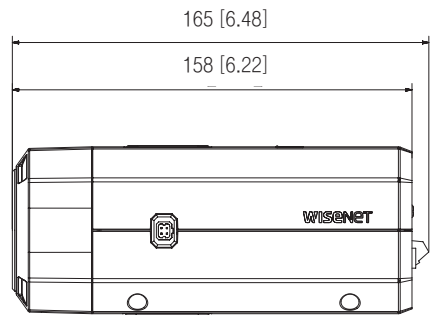
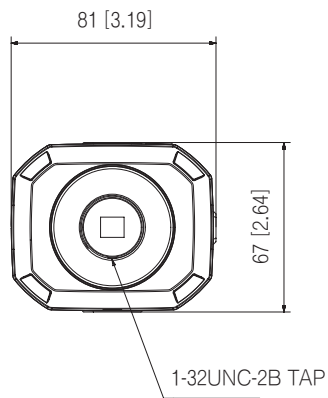
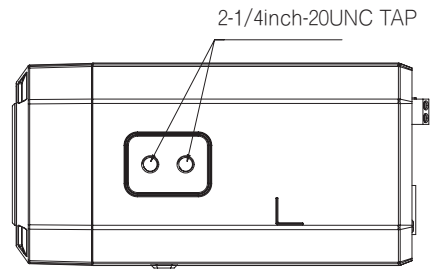
PNO-A9081R

単位: mm[インチ]



PNB-A9001

単位: mm[インチ]



トラブルシューティング

問題	解決策
Windows 10ユーザーがChromeまたはFirefoxからウェブビューアにアクセスする場合、マイクロフォンの音声ボリュームは周期的に変わります。	<ul style="list-style-type: none"> これは、マイクロフォンのドライバをRealtekドライバに設定している場合に生じます。High Definition Audioデバイス(Windowsの標準ドライバ)またはサードパーティ製のドライバをマイクロフォン用のドライバとしてインストールします。
イベントの時にオーディオ再生に必要なWAVEファイル仕様は何ですか？	<ul style="list-style-type: none"> サンプリングレート(sampling rate)は、48000KHz以下に使用することをお勧めします。 サンプル当たりビット(bits per sample, bps)は、8/16bitまでお勧めします。 PCMでエンコーディングされたタイプのみ対応します。
Safariを使用してHTTPS経由でプラグインフリーのWeb Viewerにアクセスすると、映像は表示されません。	<ul style="list-style-type: none"> https初回接続時に表示されるウェブサイトの認証ポップアップで<証明書の表示>をクリックした後、<Webビューアの設定IPに接続する際、常に信頼する>の項目のチェックボックスを選択してください。 以下のメッセージウィンドウで「次へ」を選択した後にWeb Viewerでの表示に失敗する場合は、commandキー + Qを押してSafariブラウザを終了し、再度アクセスして上述の手順に従います。
ウェブブラウザからカメラにアクセスできない。	<ul style="list-style-type: none"> カメラのネットワーク設定が適切を確認します。 ネットワークケーブルがすべてきちんと接続されているか確認します。 DHCPを使用して接続した場合、カメラが問題なく動的IPアドレスを取得できたか確認します。 カメラがブロードバンドルーターに接続している場合、ポート転送がきちんと設定されているか確認します。
閲覧中にビューアが遮断された。	<ul style="list-style-type: none"> カメラまたはネットワーク設定に変更が生じた場合、接続済みビューアは遮断されます。 ネットワーク接続をすべて確認します。
Device Managerプログラムでネットワークに接続されたカメラが検索できません。	<ul style="list-style-type: none"> 使用中のPCのファイアウォールを無効にし、カメラを再検索してください。
画像がオーバーラップする。	<ul style="list-style-type: none"> 複数のカメラが個々のアドレスではなく、単一のマルチキャストアドレスに設定されているか確認します。複数のカメラが単一アドレスを使用すると、画像がオーバーラップする原因になります。
画像が表示されない。	<ul style="list-style-type: none"> 送信方法がマルチキャストに設定されている場合、カメラが接続しているLANにマルチキャストに対応しているルータがあるか確認します。

問題	解決策
音声入力を設定している場合でも、音声は録音されません。	<ul style="list-style-type: none"> <基本> - <ビデオプロファイル> の <音声入力> チェックボックスを有効にしなければなりません。
<アナリティクス>の<モーション検知>は<イベント>に設定されていますが、分析イベントが発生したときであっても、通知用のEメールは到着しません。	<ul style="list-style-type: none"> 設定を次の順序で確認します。 <ul style="list-style-type: none"> A. <日付 & 時間>設定をチェックします。 B. <モーション検知>が<使用>に設定されていることを確認します。 C. <イベント設定>メニューの<E-mail>オプションが選択されて使用可能になっているかどうか確認してください。
インテリジェント映像分析イベントが生成されていても、アラーム出力ポートに信号が検出されません。	<ul style="list-style-type: none"> アラーム出力ポートの設定をチェックしてください。
Micro SDメモ리카ードに録画できません。	<ul style="list-style-type: none"> メモ리카ードに問題がないか確認してください。
Micro SDメモ리카ードを挿入しても、カメラが正しく動作しません。	<ul style="list-style-type: none"> メモ리카ードが正しい方向で挿入されているか確認してください。他のデバイスで初期化されたメモ리카ードの場合は、このカメラ装置で正常に動作しない可能性があります。 メモ리카ードを<設定> → <イベント> → <ストレージ>メニューで再度初期化してください。
NASに記録できません。	<ul style="list-style-type: none"> NASに登録した情報が正しいことを確認します。
NAS設定が失敗したと報告が出ています。	<ul style="list-style-type: none"> NASのIPアドレスが有効であること。 NASのID/パスワードが有効であること。 NASのIDを使う基本フォルダに指定したフォルダにアクセスできること。 NAS SMB/CIFSの項目をチェックしていないこと。 NAS IPアドレスとカメラIPアドレスが同じフォーマットであることを確認します。例) NASとカメラのサブネットマスク値は255.255.255.0です。IPアドレスが192.168.20.32である場合、NAS IPアドレスは192.168.20.1~192.168.20.255の範囲にある必要があります。 保存または使用する基本フォルダを初期化せずに、別のユーザーとして利用しようとしていたかを確認します。 推奨されているNAS装置を使用したかどうか確認します。

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GPL SW

Component Name	License	URL
Base Kernel	GPL 2.0	
Busybox	GPL 2.0	http://www.busybox.net/downloads/snapshots
iproute2-4.3.0	GPL 2.0	
iptables-1.4.21	GPL 2.0	http://ftp.netfilter.org/pub/iptables
ethtool-4.2	GPL 2.0	
mtid-1.5.2	GPL 2.0	ftp://ftp.infradead.org/pub/mtid-utils
mi-diag-2.11	GPL 2.0	
rp-pppoe-3.11	GPL 2.0	http://www.roaringpenguin.com/pppoe/
wpa_supplicant-2.5	GPL 2.0	
bash-4.3.30	GPL 3.0	
zeroconf	GPL 2.0	

LGPL SW

Component Name	License	URL
glibc	LGPL 2.0	
inetutils	LGPL 3.0	
neon-0.29.6	LGPL 2.0	http://www.webdav.org/neon/

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lighttpd is a secure, fast, compliant, and very flexible webserver that has been optimized for high-performance environments. It has a very low memory footprint compared to other web servers and takes care of cpuload. Its advanced feature-set (FastCGI, CGI, Auth, Output-Compression, URL-Rewriting and many more) make lighttpd the perfect webserver software for every server that suffers load problems. Simple Network Management Protocol (SNMP) is an Internetstandard protocol for managing devices on IP networks. It is used mostly in network management systems to monitor the devices attached to the network for conditions that need administrative attention. Net-SNMP is a suite of applications used to implement SNMP v1, SNMP v2c and SNMP v3 using both IPv4 and IPv6. For more additional information, send email to help.cctv@hanwha.com.

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- Version 1.1

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It appears that the arithmetic coding option of the JPEG spec is covered by patents owned by IBM, AT&T, and Mitsubishi. Hence arithmetic coding cannot legally be used without obtaining one or more licenses. For this reason, support for arithmetic coding has been removed from the free JPEG software. (Since arithmetic coding provides only a marginal gain over the unpatented Huffman mode, it is unlikely that very many implementations will support it.) So far as we are aware, there are no patent restrictions on the remaining code.

The IJG distribution formerly included code to read and write GIF files. To avoid entanglement with the Unisys LZW patent, GIF reading support has been removed altogether, and the GIF writer has been simplified to produce "uncompressed GIFs". This technique does not use the LZW algorithm; the resulting GIF files are larger than usual, but are readable by all standard GIF decoders.

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established by T-Engine Forum
on January 23, 2004
revised on June 17, 2004
revised on December 21, 2006
revised on March 24, 2009

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1. This License Agreement sets forth copyrights and the terms and conditions of use applicable to the source code of T-Kernel distributed by T-Engine Forum and any derivative work created therefrom.

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1. "T-Kernel" means a real-time operating system controlled and distributed by T-Engine Forum on behalf of the copyright holder thereof.
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8. "Ported Source Code" means a source program produced from the Source Code by modifying only its Hardwaredependent Part and/or Compiler-dependent Part to enable it to be operated on the T-Engine Hardware or the Similar Hardware to T-Engine Hardware. The Ported Source Code which is registered with T-Engine Forum shall be included in the Source Code.
9. "Modified Source Code" means a source program modified from the Source Code for the purpose of improving its performance, increasing or decreasing its function, and the like. The Ported Source Code shall not be included in the Modified Source Code.
10. "Binary Code" means an executable code form which is created by compiling programs, which include all or part of the Source Code or the Modified Source Code.
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2. to transmit a work to the general public through the Internet communication, broadcasting, and the like automatically in response to a request from the public; and
3. to distribute a copy of a work to the general public or a large number of specific persons.

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1. The copyrights of the Source Code shall be owned by Ken Sakamura.

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2. to run the Source Code provided by T-Engine Forum hereunder for its own research, development and the like.
3. to run the Source Code modified in accordance with the provision of Article 4.3 (1) above for its own research, development and the like.
4. to distribute the Binary Code created from the Source Code provided by T-Engine Forum hereunder or from the Source Code modified in accordance with the provision of Article 4.3 (1) above.

4. In accordance with the license granted under Article 4.1 above, the System Developer may perform the following acts:

1. to perform any and all acts set forth in the Article 4.3 above.
2. to develop and manufacture the Embedded Product containing the Binary Code, and, whether with or without payment, provide the End User with the same and make the Binary Code available to the End User on the Embedded Product.

5. The Source Code User and the System Developer shall be obligated to give a notice that the Source Code is used, in such a way as separately specified by T-Engine Forum, when they use the Source Code or the Binary Code, or make the Binary Code available for the End User on the Embedded Product.

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1. Any of A- members of T-Engine Forum may become the Distributor of Modification by obtaining the approval of T-Engine Forum through the registration procedure as prescribed by the Forum provided that only the department of the A- member which has taken the registration procedure may distribute the Modified Source Code in such a way as provided for in this Article as long as it holds the Amembership.

2. The Distributor of Modification may create the Modified Source Code based on the Source Code provided by T-Engine Forum and the Patch for Modification to be applied to create such Modified Source Code from the Source Code.

3. The Distributor of Modification shall, prior to the distribution, inform T-Engine Forum of and register a name and description of the Modified Source Code in such a way as specified by T-Engine Forum.

4. The Distributor of Modification shall determine the name of the Modified Source Code subject to the rules separately established by T-Engine Forum and publish an appropriate notice as required by the rules on the Patch for Modification and the Modified Source Code.

5. The Distributor of Modification may distribute the Modified Source Code to a third party, whether with or without payment, provided that the Distributor of Modification shall take the necessary measures to prohibit the third party from making the re-Distribution of the Modified Source Code.

6. Developer with the Patch for Modification. Provided, however, that the Distributor of Modification shall be obligated to confirm that the System Developer is the Source Code User duly licensed under Article 4.1.

7. The Distributor of Modification may perform the Vicarious Execution of Patch Processing for the System Developer.

8. The System Developer shall not distribute the Modified Source Code in further modified form to any third party as a stand-alone software product.

9. The System Developer may, under the same obligation as imposed in Article 4.5, make the Embedded Product available for the End User through use of the Patch for Modification distributed by the Distributor of Modification or the Derivative Works obtained through the Vicarious Execution of Patch Processing.

Article 6. Distribution and Registration of the Ported Source Code

1. The Source Code User and the System Developer may, whether with or without charge, distribute to any third party only the following parts of the Ported

Source Code on the T-Engine Hardware or the Similar Hardware to T-Engine Hardware:

1. The Hardware-dependent Part and/or Compiler-dependent Part; provided that the Source Code User and the System Developer shall inform T-Engine Forum of, and T-Engine Forum may publish, a method for distributing said Part(s) to third parties.

2. The Header File; provided that the Header File shall be distributed together with the Binary Code of the Ported Source Code.

2. Any member of T-Engine Forum may request T-Engine Forum to register and distribute, as an original source code for T-Kernel, the Ported Source Code on the T-Engine Hardware or the Similar Hardware to T-Engine Hardware.

3. Any member of T-Engine Forum who requests the distribution mentioned in the preceding paragraph shall accede to the following conditions:

1. The member shall confirm that the object hardware is the T-Engine Hardware or the Similar Hardware to T-Engine Hardware.
2. The member shall provide T-Engine Forum with a complete set of operational environment for the object hardware and T-Kernel free of charge when requesting the distribution.
3. The member shall submit test results of the Ported Source Code to T-Engine Forum when requesting the distribution.

4. In the event that T-Engine Forum accepts the request mentioned in Article 6.2, T-Engine Forum shall register and distribute the Ported Source Code as the Source Code for T-Kernel. Provided, however, that the Ported Source Code may be treated in the same way as the Modified Source Code until the time of registration hereunder.

5. The provision set forth in Article 3 shall apply to the Ported Source Code registered in accordance with this Article.

Article 7. Use for Other Purpose

1. Any use of the Source Code, the Modified Source Code or the Ported Source Code other than those stipulated in Articles 4, 5 and 6 shall be subject to the prior approval of T-Engine Forum.

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2. In case of breach of this License Agreement by a member of T-Engine Forum, T-Engine Forum may take appropriate measures against the member; for example, the member is disqualified from membership, depending on what kind of breach has been committed by it.

3. Any legal dispute which may arise in relation to any breach of this License Agreement shall be subject to the exclusive jurisdiction of the Tokyo District Court.

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2. This License Agreement is executed in both Japanese text and English text provided that the Japanese text shall govern the interpretation and performance of this License Agreement.

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iperf performance test

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The data format used by the zlib library is described by RFCs (Request for Comments) 1950 to 1952 in the files <http://www.ietf.org/rfc/rfc1950.txt> (zlib format), [rfc1951.txt](http://www.ietf.org/rfc/rfc1951.txt) (deflate format) and [rfc1952.txt](http://www.ietf.org/rfc/rfc1952.txt) (gzip format).

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