

Compumedics Graef Wiring Diagram Information Guide



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Compumedics Grael Wiring Diagram Guide

Abstract

This Document explains the wiring diagrams to install the Compumedics Grael System in a Hospital or a Free Standing facility.

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Facility Room Preparations

Patient Rooms:

- One single-gang 110v electrical outlet completed below ceiling tile level for each camera
- One Single Gang electrical Box for each Compumedics system low voltage wiring at bedside*
- Finished Drop Ceilings and baseboards
- Furnishings in patient rooms: Bed, Night Stands, etc...
- Availability of ancillary devices (CPAP etc.)
- Network Data cables pulled from control room to patient room and terminated*

Control Room:

- Network Data cables pulled from Server to control room (where applicable)*
- Audio, Video and Data cables pulled from patient room to control room and terminated*
- One Single Gang electrical box for each Compumedics system low voltage wiring*
- Adequate power outlets for each system
- Computer ready furnishings set up in room

Copy of Certificate of Occupancy (when applicable) sent to Compumedics USA, Inc.

**Unless otherwise purchased at time of sale.*

Compumedics GraeL and AV System: Power and Dimension

GraeL Components:

GraeL Patient Interface Box (PIB):	9.4 in x 5.6 in x 2.0 in	29.2 oz
Data Logger:	7.3 in x 3.0 in x 1.5 in	8.5 oz
POE Injector:	5.5 in x 3.0 in x 1.5 in	6.0 oz
Network:	100 Mbps Ethernet, RJ-45	
Protocols:	IPv4, TC/IP, PPPoE	



GraeL Power:

Compumedics GraeL requires POE (Power over Ethernet) Injector or POE Switch. The GraeL is fully compliant with 802.3af and can be powered by either a mid-span power injector or POE switch. The required voltage is 48v (as specified in 802.3af) while the maximum power consumption is < 10 Watts (The GraeL typically draws 6 to 7 Watts).

XLINK DC Input Component:

XLINK16 DC Input Analog inputs

Input connectors:	1/8in or 3.5mm Mono Jack
Inputs:	±1 Volts or ± 10Volts
Power Requirements:	POE injector, 802.3af
Dimensions:	5.4 D x 4.1 W x 1.5 H in. 13.81D x 10.48W x 3.81H cm.



HD IP JVC-VN-H557U PTZ Camera Components:

Lens:	ADL 10X lens, 10x digital zoom
Angle of View:	(Camera+LENS) WIDE H:41.5°
Illumination B/W:	0.7 lx (F1.8, 50IRE, 1/30)
Illumination Color:	0.9 lx (F1.8, 50IRE, 1/30)
Video Compression:	H.264: Up to 30/25 fps at 720x480 (NTSC) MPEG-4: Up to 30/25 fps at 720x480 (NTSC) MJPEG: Up to 30/25 fps at 720x480 (NTSC)
Audio:	Built-in Microphone External Microphone input Audio Output
Network:	RJ-45 (100BASE-TX/10BASE-T) 、 AUTO NEGOTIATION/MANUAL (100Base/10Base.FULL/HALF)
Protocols:	IPv4, HTTP, TCP, RTSP/RTCP/RTP, ICMP, UDP, IGMP, DNS, DHCP, ARP, FTP Client, SMTP, NTP, RTSP/RTCP/RTP
Weight:	664g
Power:	12V DC or 24 AC, 45W
Maximum	1920x1080 Resolution at 30fps (FullHD+720P or Full HD+CIF+CIF)



IP IP8161 VIVOTEK Fixed Camera Components:

Lens: 8X optical zoom, Auto Iris
Angle of View: 1.2°
Illumination: 0.1 Luz / F1.6
Video Compression: H.264: Up to 30/25 fps at 720x480 (NTSC)
MPEG-4: Up to 30/25 fps at 720x480 (NTSC)
MJPEG: Up to 30/25 fps at 720x480 (NTSC)
Audio: Built-in Microphone
External Microphone input
Audio Output
Network: 10/100 Mbps Ethernet, RJ-45
Protocols: IPv4, TC/IP, HTTP, HTTPS, UPnP, PPPoE
Weight: 664g
Power: 12V DC or 24 AC, 45W



Infrared LED illuminators Components:

LED Array: 3 Led Array
Power: 12VDC or 24 VAC. 700mA (Max)
LED Wavelengths: Non Cover: 850nm
**Emits a slight red visible glow
Weight: 1.0 lbs. (454g)



Louroe Intercom and Microphone Components:

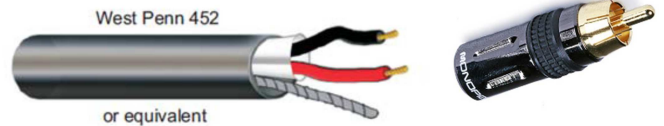
Speaker / Mic Specifications:

Output: Line Level 90 dB @ 1KΩ
 Sensitivity Mic: -65 dB ± 4 dB
 Current drain: 4 mA
 Speaker: 4", 8Ω w/70V Transformer
 Power Rating: 4W
 Face Plate Dimensions: 6 1/2" H x 8" W
 Backbox for TLM-W:
 Surface Mount Box (metal): 6 1/2" H x 8" W x 2 3/4" D
 Flush Mount Box (Plastic): 5" H X 6 7/8" W x 2 7/8"D
 Total including Flange: 6 1/4" x 8" W X 2 7/8" D



Base Station Specifications:

Input Sensitivity: .78 Vrms
 Monitor power Output: 1.5W @8Ω
 Talk back power Output: 1.5W into 70V line
 Input sensitivity: -55dB
 Audio Line output imped: 600Ω or Higher
 Audio input impedance: 10KΩ
 Audio frequency response: 100 Hz to 10 kHz
 Power input: 24Vdc, 1A or 24 Vdc, 1.5A
 Dimensions: 8" W x 10" D x 2 1/4" H
 Shipping Weight: 10lbs (4.5 Kg)



Intercom/Audio Cable:

Intercom Cable: West Penn 356 or equivalent

One (1) 4 Conductor Shielded with Ground wire, 20AWG cable, Non-twisted Pair and Stranded Coming out into a single gang box.

Audio Cable: West Penn 452 or equivalent

One (1) 2 Conductor Shielded with Ground wire, 20AWG cable, Non-twisted Pair and Stranded

- Cables above Ceiling: Direct Runs**
- 10ft. Service Loop in the Patient Room and Control Room
- Soldered to a RCA Connector with 10 ft of Service Loop
- Red: Source
- Back: Negative
- Drain: Negative

Cable Requirements Graef Sleep System:

Compumedics Amplifiers and AUX:

Graef: Compumedics PSG System

One (1) CAT 5e Plenum Cable for each bed, Terminated TIA/EIA568B

Must have a Static IP Address

Power over Ethernet (POE)

XLINK or Data Logger: 8 Analog Signals

One (1) CAT 5e Plenum Cable for each Device, Terminated TIA/EIA568B

Must have a Static IP Address

3rd Party CPAP Equipment:

CPAP Remote Cable: (Respironics, ResMed, etc...)

One (1) CAT 5e Plenum Cable for each bed, Terminated TIA/EIA568B

CPAP controller may require desktop space if not controlled by software

May need a Static IP Address

- Customer Responsible for Setting up a time for the CPAP Manufacturer Representative to install and Train on their System

Digital Video Camera Cabling:

IP Camera with Pan, Tilt, and Zoom (PTZ):

One (1) CAT5e Plenum Cable in the Ceiling

Terminated TIA/EIA568B in an **External Single Gang Box (Required)**

Must have a Static IP Address

10ft. Service Loop

Mark the location of the Cabling in Ceiling

IP Camera Fixed:

One (1) CAT5e Plenum Cable in the Ceiling

Terminated TIA/EIA568B in an **External Single Gang Box**

Must have a Static IP Address

10ft. Service Loop

Mark the location of the Cabling in Ceiling



Intercom Cable:

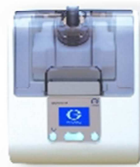
4 Conductor Shielded with Drain wire, 18AWG cable, Non-twisted Pair and Stranded coming out into a single gang box.

- Cables above Ceiling
- 10ft. Service Loop in the Patient Room and Control Room
- Mark the location of the Cabling in Ceiling

Sleep Equipment Wiring: *Grael, Datalogger, CPAP to Direct Runs*

Patient Room

CPAP Unit



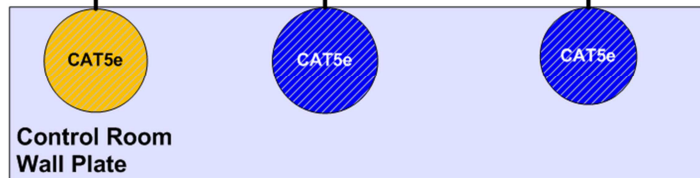
Grael
PSG Equipment



XLINK
16DC Inputs



Control Room

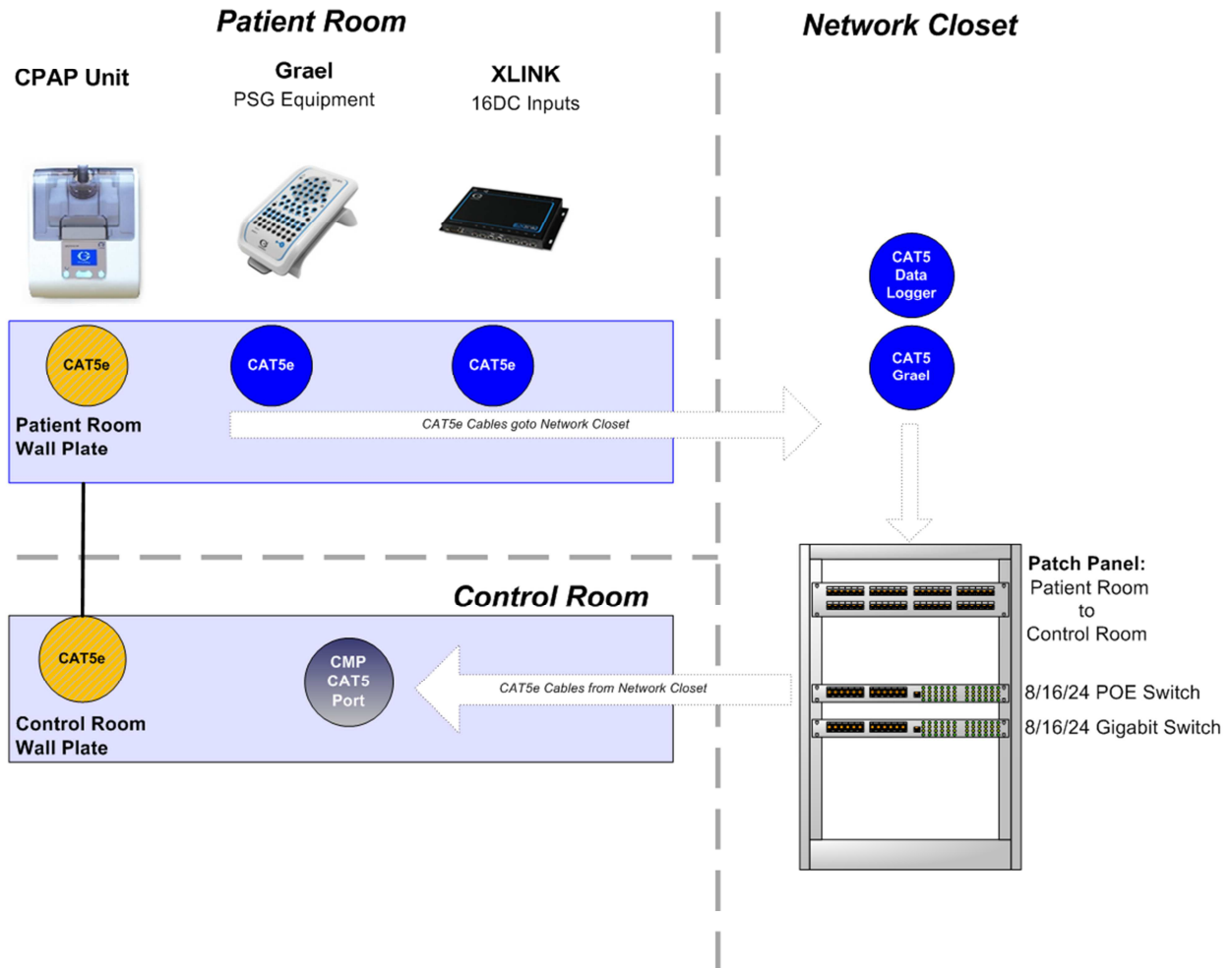


Cable Drops Description:

Sleep Equipment:	CAT5e PLENUM RATED
X-Link:	CAT5e PLENUM RATED
CPAP Equipment:	CAT5e PLENUM RATED

****All Cables must meet your State Building, Electrical, and Fire Code. Contact your local Building Inspector and Electrician for Further Information****

Sleep Equipment Wiring: *Grael, Datalogger, CPAP to Network Closet*



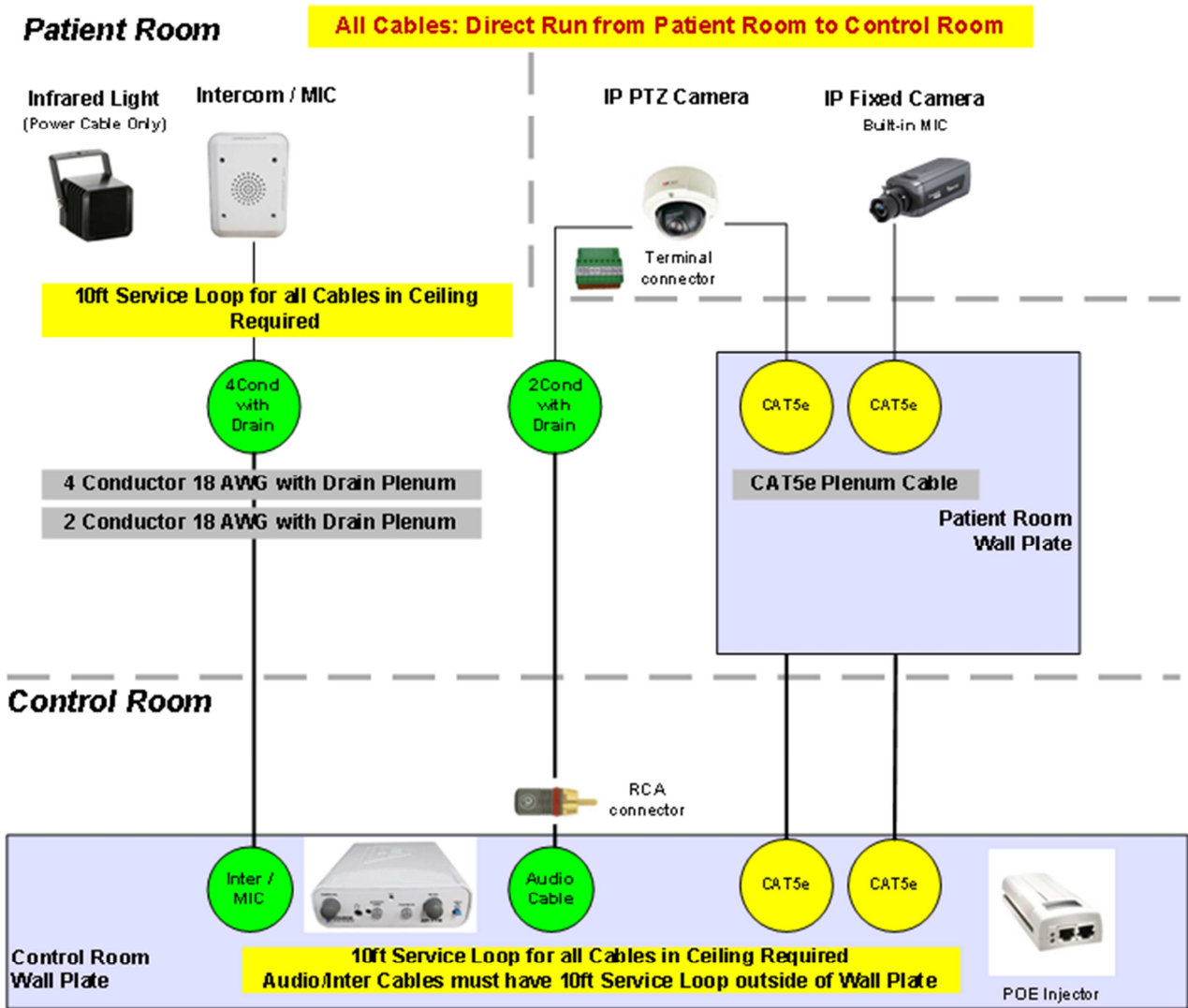
Cable Drop Descriptions:

Sleep Equipment:	CAT5e PLENUM RATED
X-Link:	CAT5e PLENUM RATED
CPAP Equipment:	CAT5e PLENUM RATED

****All Cables must meet your State Building, Electrical, and Fire Code. Contact your local Building Inspector and Electrician for Further Information****

Audio, Video, Infrared Wiring:

Camera (Fixed and PTZ), Infrared Light, Intercom/MIC



Cable Drops Description:

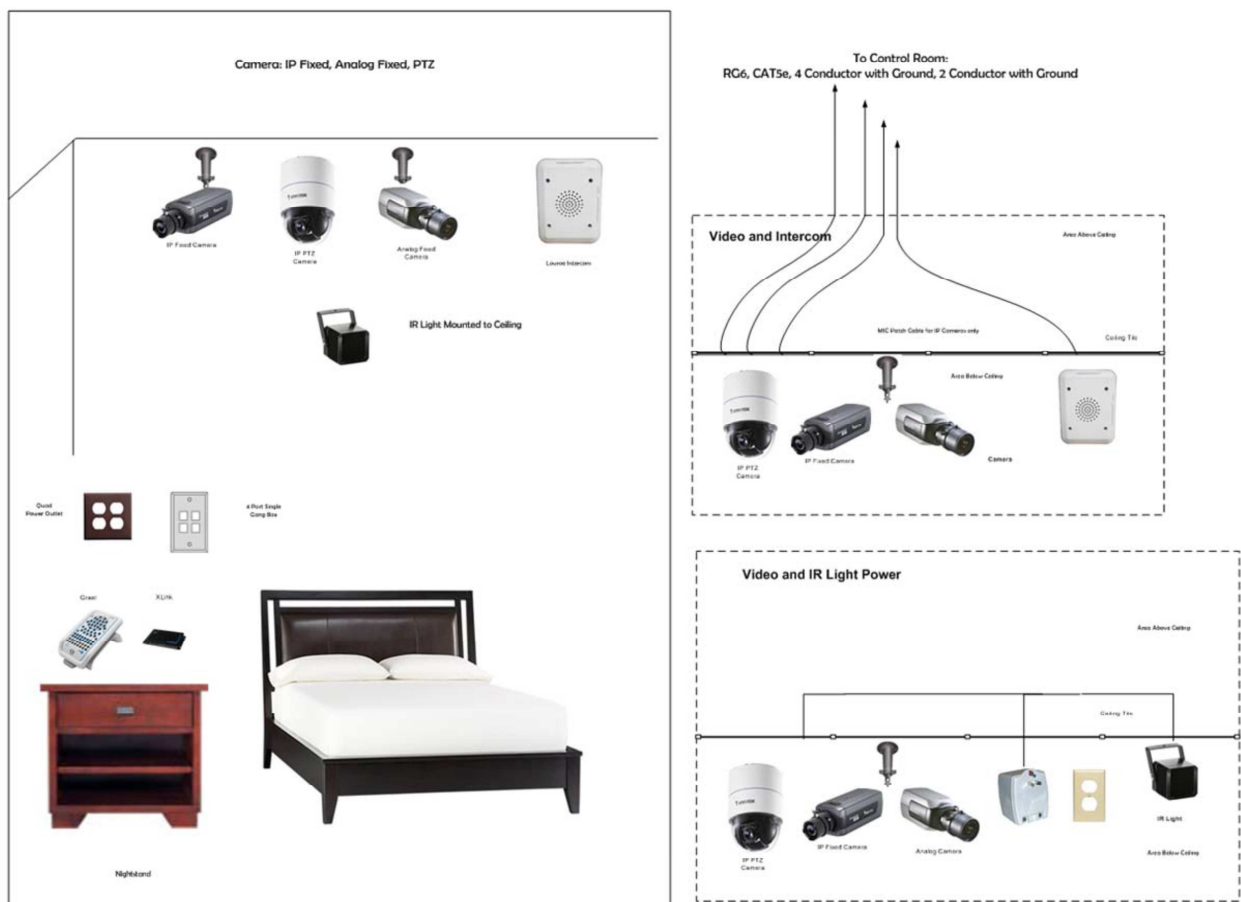
- IP Video/PTZ: CAT5e PLENUM RATED
- IP CPAP Equipment: CAT5e PLENUM RATED
- Intercom: 4 Cond with Drain wire, Shielded, non-twisted, PLENUM Rated
- Audio: 2 Cond with Drain wire, Shielded, non-twisted, PLENUM Rated
 - RCA Connector Soldered with 10 ft. Service Loop



****All Cables must meet your State Building, Electrical, and Fire Code. Contact your local Building Inspector and Electrician for Further Information****

Patient Room Layout

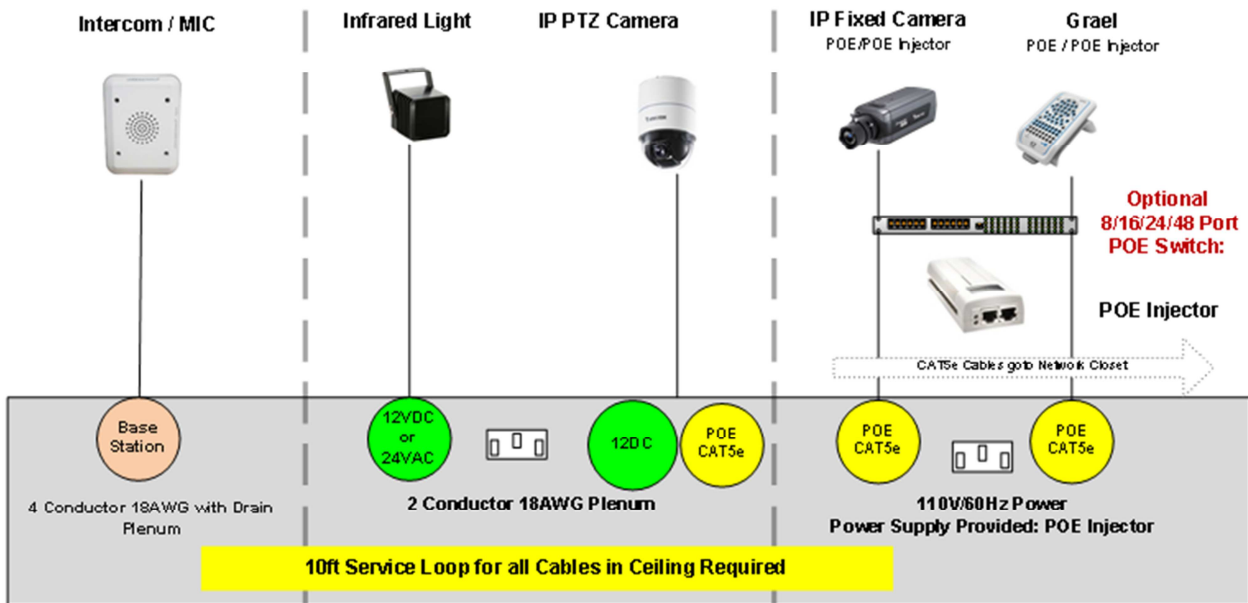
Grael, Data Logger, Camera, IR Light, Louroe, Power



Power Wiring

Grael, Camera (Fixed or PTZ), Infrared Light, Intercom/MIC

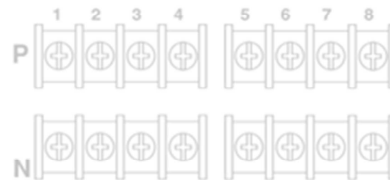
Patient Room



Control Room



Optional: Central Power Supply: IP Camera and Infrared Light
2 Conductor 18AWG Plenum run back to Central Power Location



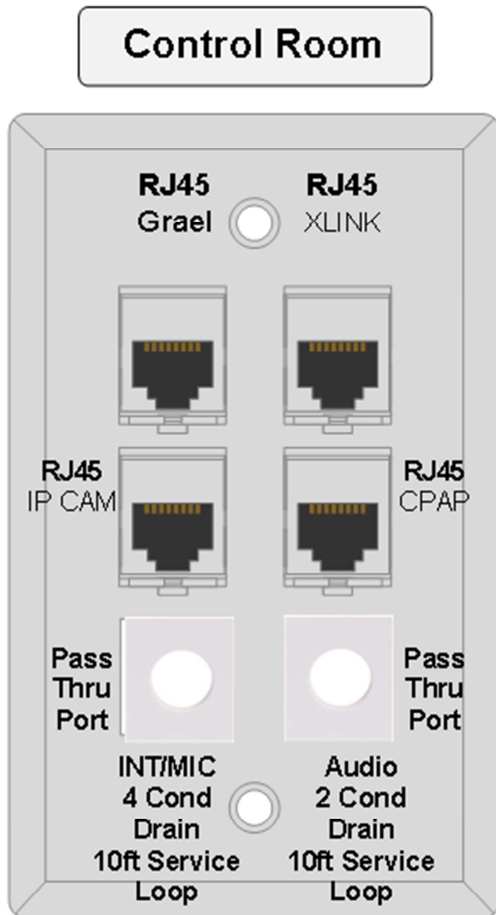
Power Cables Drops:

- Grael Data:** POE Injector Power Supply will be provided
- Camera:** CAT5e using Class 3 POE or 2 Conductor 18AWG non-twisted PLENUM
- Infrared Light:** 2 Conductor 18AWG non-twisted PLENUM
- MIC-Intercom:** 4 Conductor 18AWG with Drain wire PLENUM and Shielded non-twisted
- Central Power Supply:** Customer Supplied: Compumedics will provide Specs

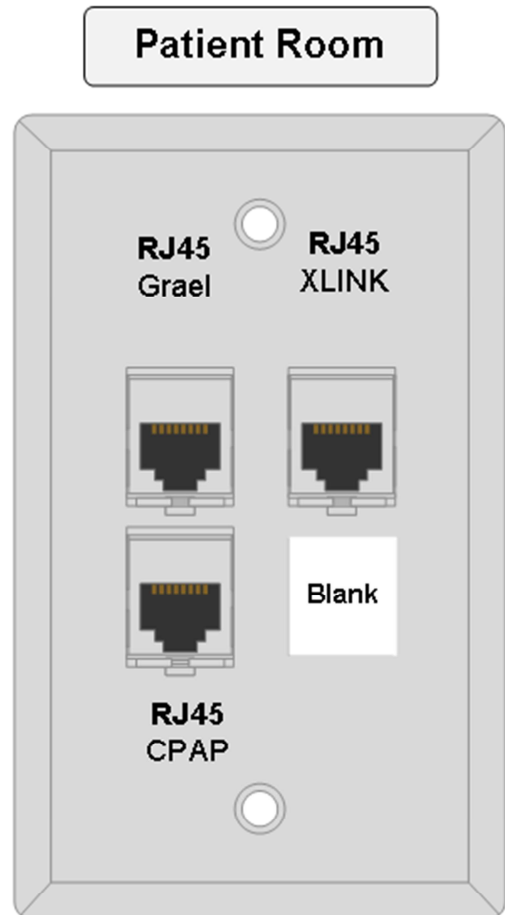
****All Cables must meet your State Building, Electrical, and Fire Code. Contact your local Building Inspector and Electrician for Further Information****

Single Gang Keystone Wall-Plate: Direct Runs

Patient Room to Control Room: Direct Cable Runs



**6 Port Keystone Wall-Plate
(Single Gang Box)**



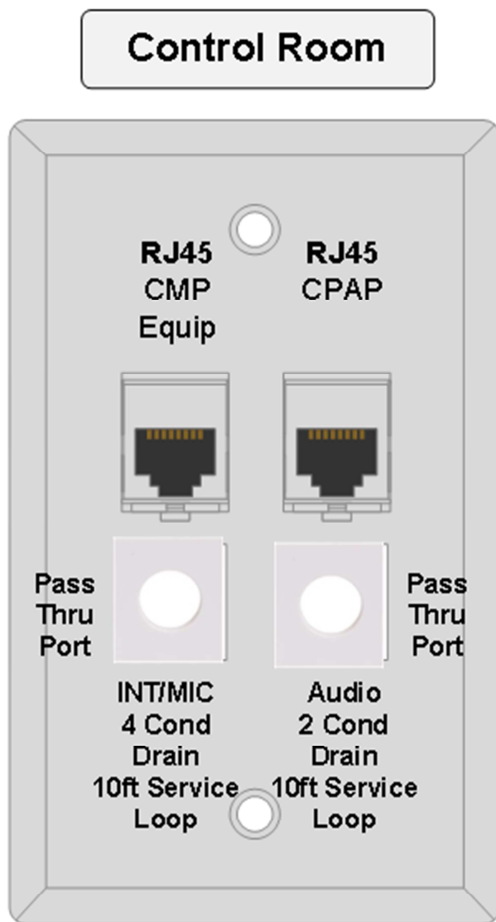
**4 Port Keystone Wall-Plate
(Single Gang Box)**

Snap-In-Modules

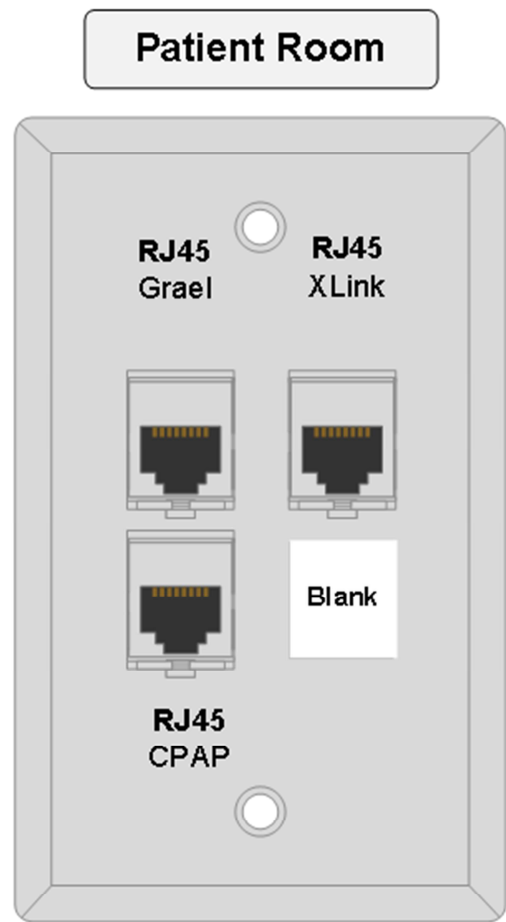
Wall Plates: Leviton Telcom (4 and 6 Ports)
RJ45 Snap-In-Module: CAT5e Jack (Leviton)
Blanks Snap-In-Modules: Leviton Telcom for Pass Thru

Single Gang Keystone Wall-Plate: Network Closet

Compumedics Equipment in a Common or POE Switch



4 Port Keystone Wall-Plate (Single Gang Box)



4 Port Keystone Wall-Plate (Single Gang Box)

Snap-In-Modules

Wall Plates: Leviton Telcom (4 and 6 Ports)
RJ45 Snap-In-Modules: CAT5e Jack (Leviton)
Blanks Snap-In-Modules: Leviton Telcom

LAN Networking Requirements

Each Facility is responsible for providing LAN Network Drops and Connection to each Workstation computer.

Network Requirements:

- CAT5e Drop per Computer in a Workgroup or Domain Environment
- Switch / Ports Speed configured for:
 - Static 100 Mbs Full Duplex: Grael
 - Static 1000 Mbs Full Duplex Auto Sensing: LAN
- Workgroup or Domain Environment

Workstation:

- Assign HOST Name for each Computer
- Each Workstation needs to establish on the Workgroup or Domain
- Static IP Address for all Workstations and Readerstations

IP Cameras:

- Static IP Address for each Camera from Domain or Workgroup

User Account: Create in Active Directories or Local Users and Groups

- Individual Staff Domain Accounts
- Two Global Groups(NeXus LMS Only): GLNeXus-Admin and GLNeXus-Users
- Domain Vendor User Account: Local Admin on Workstation Computer
- Workgroup User Account: Compumedics will setup onsite

Third Party Software:

- Antivirus Protection: Scheduled when not Acquiring Data.
 - Exclusion List: See Compumedics Antivirus Exclusion List Documentation
- Microsoft Updates: See Compumedics Software Update Validation List documentation
- Service Pack Updates: See Compumedics Software Update Validation List documentation

Remote Access Support:

- Compumedics Provides Internet Remote Support via GoToAssist.
 - White List www.gotoassist.com/ph/compumedics
- Vendor Client VPN