# NETDIMMER – MESH NETWORK **INSTALLATION EXAMPLES**

- MESH Gateways
  - Span large distances (several miles)
  - Scalable deployment
  - Master/Slave (up to 16 slaves per Gateway)
  - Low cost slave direct LED drivers (TRIAC, PWM, 0-10VDC, AC Switched)
  - Optional sensor inputs (Motion detect, energy use, environment, light levels)
  - Fault detection and alerting
  - Stand alone (isolated) operation option
  - Local monitoring and control via browser device
  - Cloud base monitoring and reporting

# NETDIMMER MESH GATEWAY

- Central wireless gateway controller
  - Interface to local internet access point via Wireless or Ethernet
  - Links up to 16 separate wireless driver modules
  - Mixed driver options (TRIAC, 0-10VDC, Direct DC PWM)
- Distributed LED drivers
  - Self-healing network (continues to operate if node is off-line)
  - Spans very large distances (up to 100 miles)
  - Multiple lights per module (up to 24 depending on wattage)
  - Off-line detection
  - Amp sensor in each driver reports back to central gateway



WIRELESS MESH NETWORK Mesh Wireless Mesh Wireless Driver (range to Driver (range to 4000 ft) 4000 ft) netDimmer Mesh Wireless Mesh Wireless Driver (range to 4000 ft) 4000 ft) wireless Mesh Wireless Mesh Wireless Driver (range to Driver (range to 4000 ft) mesh 4000 ft) Mesh Wireless Mesh Wireless gateway Driver (range to Driver (range to 4000 ft) 4000 ft) Mesh Wireless Mesh Wireless Driver (range to Driver (range to 4000 ft) 4000 ft)

# NETDIMMER – MESH NETWORK

netDimmer Mesh gateway





Light Control and monitoring Interface



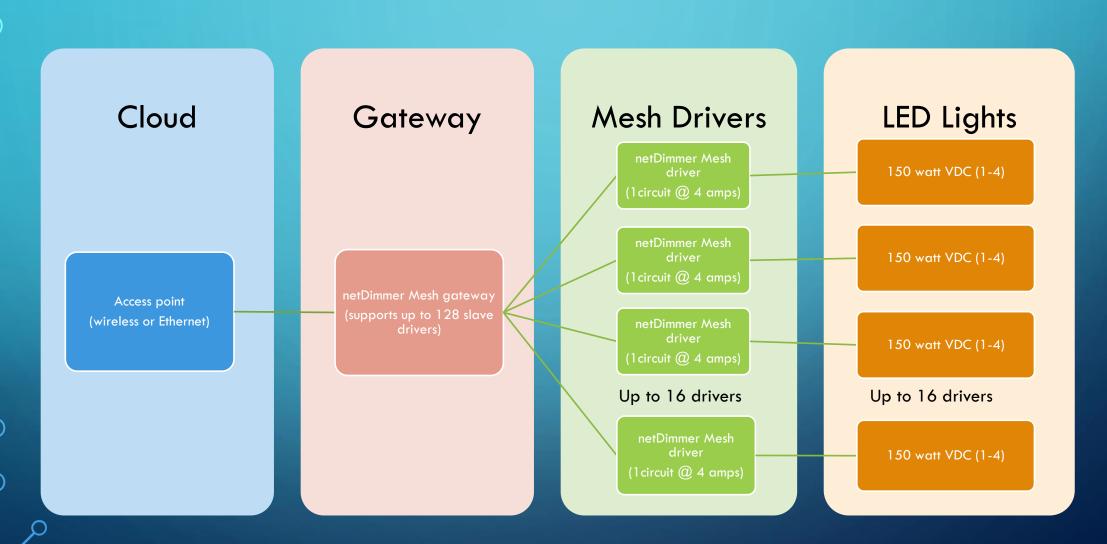
Internet access point

netDimmer Mesh gateway





# NETDIMMER MESH GATEWAY



- MESH Dimmer Modules
  - Support many types of LED drivers (VDC, PWM, AC Switched, TRIAC)
  - Indoor and Outdoor rated (NEMA 7 option)
  - Master/Slave (up to 16 slaves per Gateway)
  - Provides operational status to gateway
  - Zigbee style wireless for link redundancy
  - Can function as stand alone controller without gateway
  - Fits into single gang electrical box
  - Direct AC powered to 480 VAC



# NETDIMMER - WIRELESS TRIAC DRIVERS (HIGHBAY)

netDimmer mesh Zigbee 150 watt 150 watt 150 watt 277 VAC 150 watt module highbay highbay highbay highbay TRIAC wireless driver 6 Up to 8 Lights per driver Amps max AC IN netDimmer mesh Gateway netDimmer mesh 150 watt 150 watt 150 watt 150 watt Zigbee module highbay highbay highbay highbay TRIAC wireless driver 6 WiFi or Ethernet Amps max AC IN Up to 8 Lights per driver Access point to Zigbee wireless network netDimmer mesh 150 watt 150 watt 150 watt 150 watt Zigbee module highbay highbay highbay highbay TRIAC wireless driver 6 Amps max AC IN

Up to 16 mesh modules per gateway

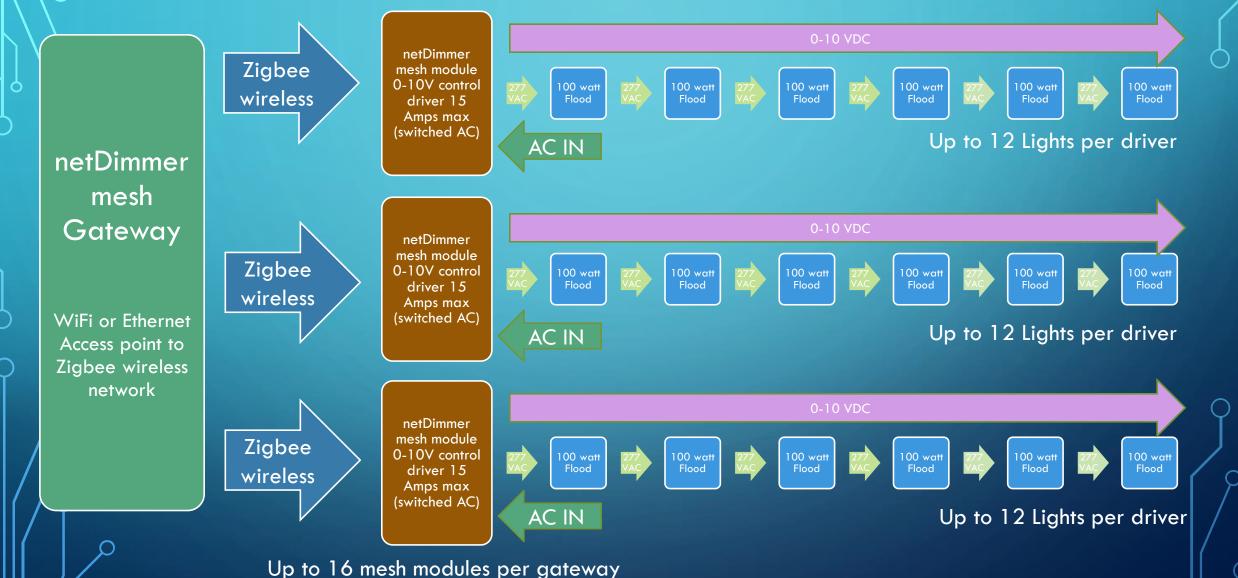
Up to 8 Lights per driver

# NETDIMMER - WIRELESS PWM DRIVERS (DC)

netDimmer Zigbee 10 watt BR30 mesh module DC PWM wireless driver 6 Amps max Up to 24 Lights per driver 12 to 36 VDC IN netDimmer mesh Gateway netDimmer 10 watt BR30 10 watt BR30 10 watt BR30 mesh module BR30 Zigbee DC PWM driver 6 Amps wireless max Up to 24 Lights per driver 12 to 36 VDC IN WiFi or Ethernet Access point to Zigbee wireless network netDimmer 10 watt BR30 10 watt BR30 10 watt BR30 10 watt mesh module DC PWM Zigbee driver 6 Amps wireless max Up to 24 Lights per driver 12 to 36 VDC IN

Up to 128 mesh modules per gateway

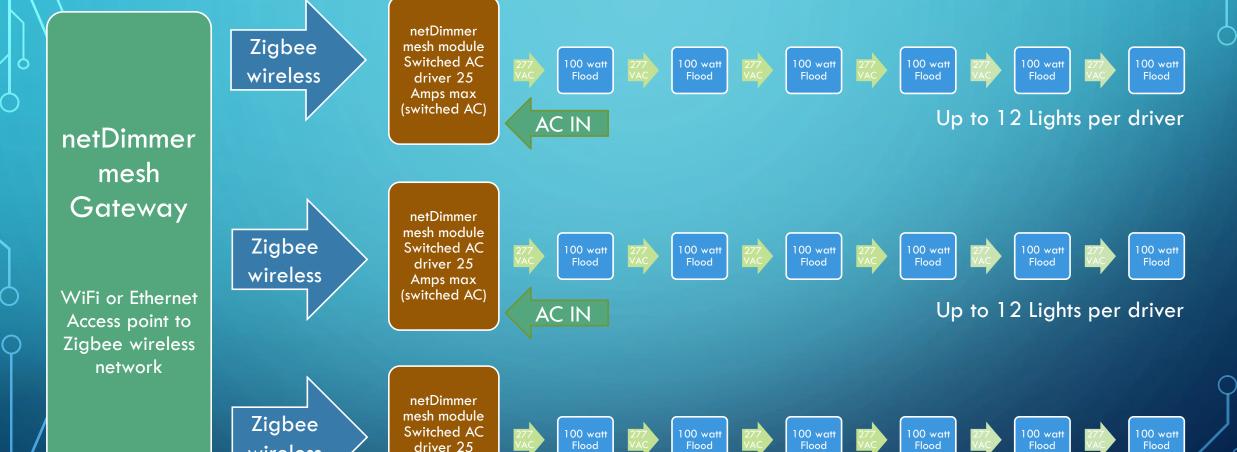
## NETDIMMER – WIRELESS LED DRIVERS (0-10V CONTROL)



- Wireless AC Switched drivers
  - Span large distances (several miles)
  - Scalable deployment
  - Master/Slave (up to 16 slaves per Gateway)
  - Simple On/Off for all types of LED Lights/drivers
  - Power loss option keeps lights on in case of failure
  - Dual relay option for bank switching (0%, 50%, 100%)
  - Stand alone (isolated) operation option
  - Local monitoring and control via browser device
  - Cloud base monitoring and reporting



# NETDIMMER – WIRELESS LED DRIVERS (AC SWITCHED ONLY)



AC IN

Flood

Up to 12 Lights per driver

Up to 16 mesh modules per gateway

driver 25

Amps max (switched AC)

wireless

# NETDIMMER - WIRELESS LED DRIVERS (DUAL AC SWITCHED)

netDimmer mesh Gateway

WiFi or Ethernet Access point to Zigbee wireless network



Up to 6 Lights per driver

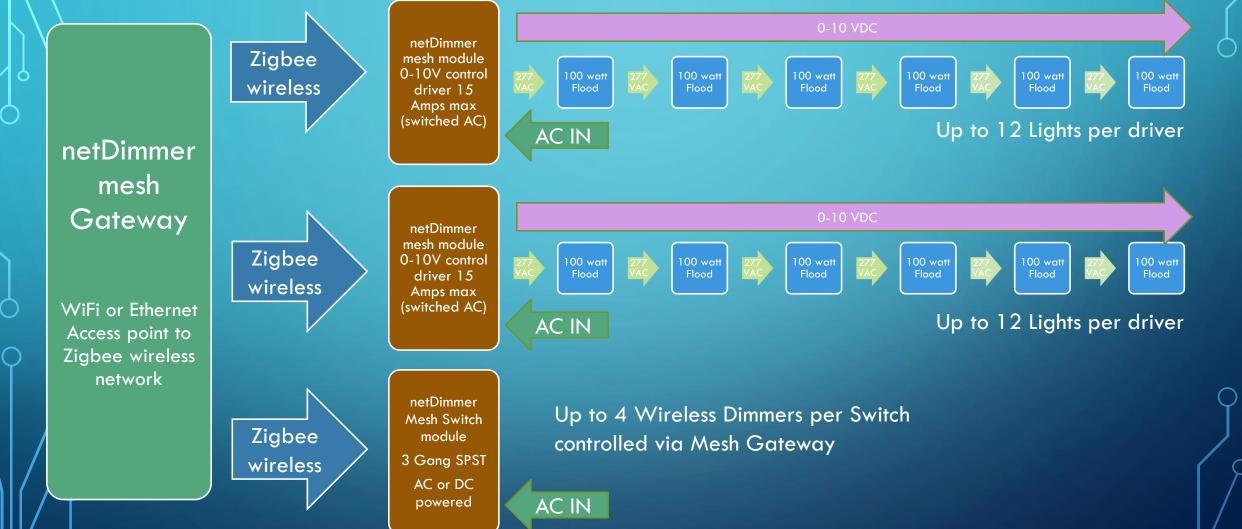
AC IN Dual Relays allow bank switching for 0%, 50%, 100%

Up to 16 mesh modules per gateway

- Remote Switch Controller
  - Span large distances (several miles)
  - Scalable deployment
  - Master/Slave (up to 16 slaves per Switch)
  - Up to 4 dimmer presets (0%, 25%, 50%, 100%)
  - Optional local override enable mode
  - Can be configured to control wireless dimmer modules directly without gateway
  - AC Powered to 480 VAC
  - Optional DC Power Option available



#### NETDIMMER – WIRELESS LED DRIVERS WITH REMOTE SWITCH

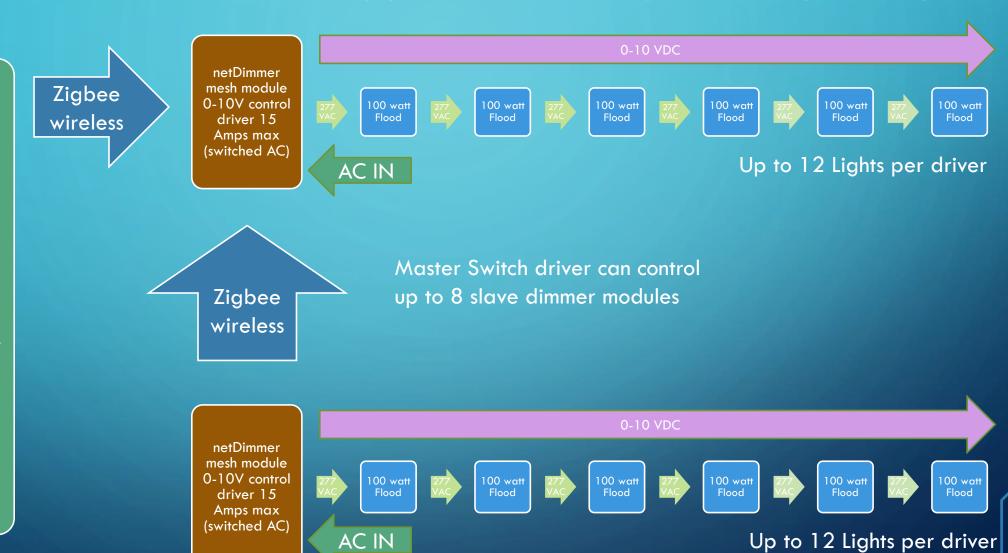


Up to 16 mesh modules per gateway

# NETDIMMER - WIRELESS LED DRIVERS WITH SLAVES

netDimmer mesh Gateway

WiFi or Ethernet Access point to Zigbee wireless network

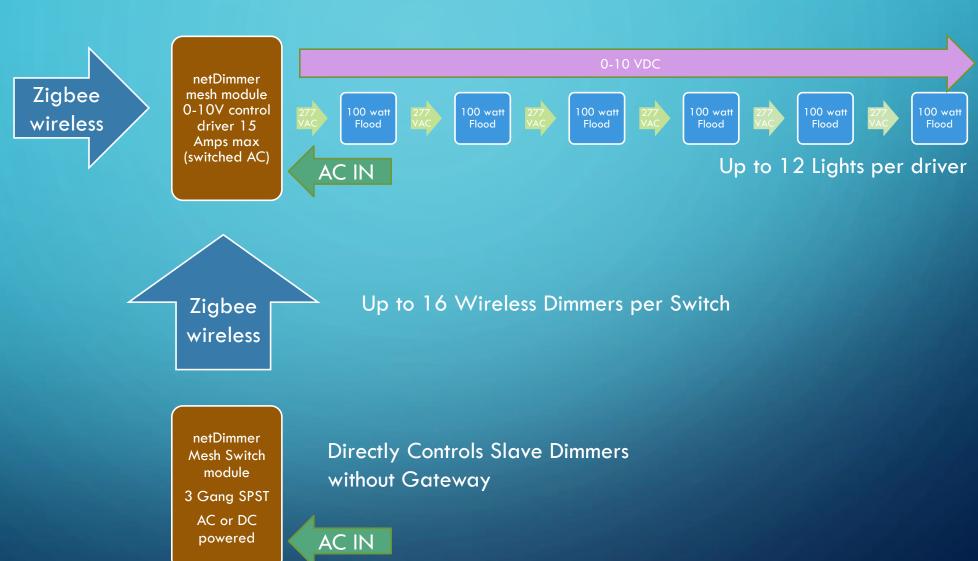


Up to 16 Master mesh modules per gateway

#### NETDIMMER – WIRELESS LED DRIVERS WITH REMOTE SWITCH $^{\circ}$

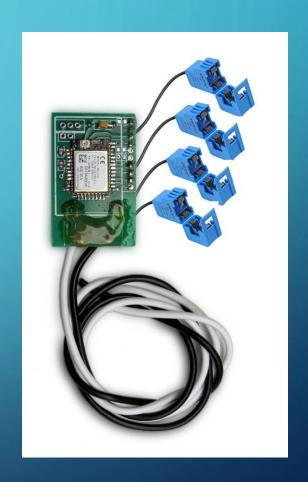
netDimmer mesh Gateway

WiFi or Ethernet Access point to Zigbee wireless network



Up to 16 mesh modules per gateway

- MESH dimmer with sensors
  - Span large distances (several miles)
  - Scalable deployment
  - 1-4 AC Current sensors
  - Microwave Motion detector
  - Light Level sensor (Photo cell)
  - Temperature/Humidity sensor
  - Contact Open/Close detect (4 channels)
  - Local monitoring and control via browser device
  - Cloud base monitoring and reporting



#### NETDIMMER – WIRELESS LED DRIVERS WITH SENSORS

Zigbee netDimmer mesh module 0-10V control watt Flood watt Flood watt Flood wireless driver 15 Amps max Flood Flood (switched AC) Up to 12 Lights per driver AC IN netDimmer mesh Up to 12 Lights per driver Gateway Light Motion (photocell Sensor WiFi or Ethernet Access point to netDimmer mesh Zigbee wireless Zigbee module 0-10V control 100 watt 100 watt driver 15 Amps max network Flood Flood Flood Flood Flood wireless (switched AC) AC IN Up to 12 Lights per driver Current

Up to 16 mesh modules per gateway

Temperature

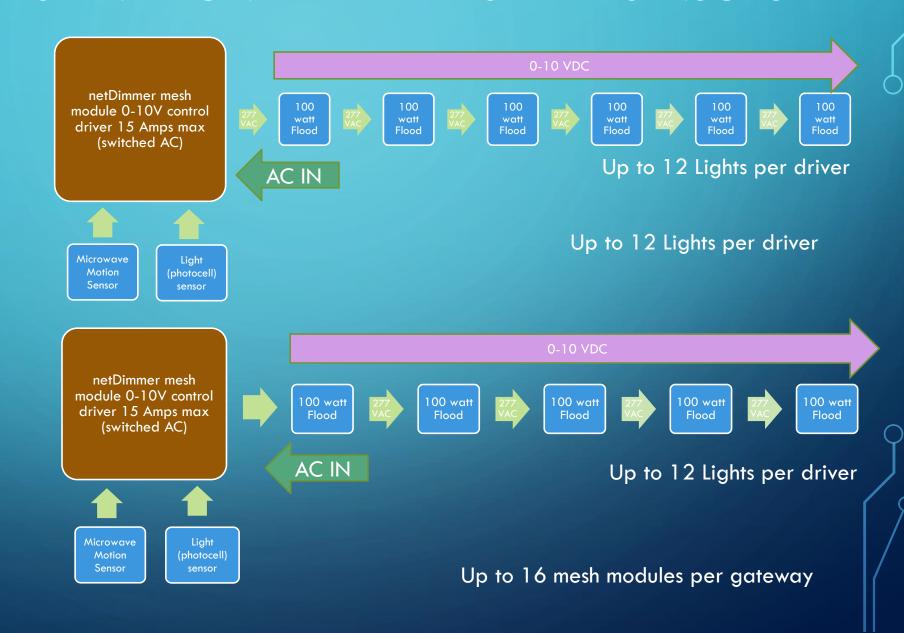
Sensor

(AMP)

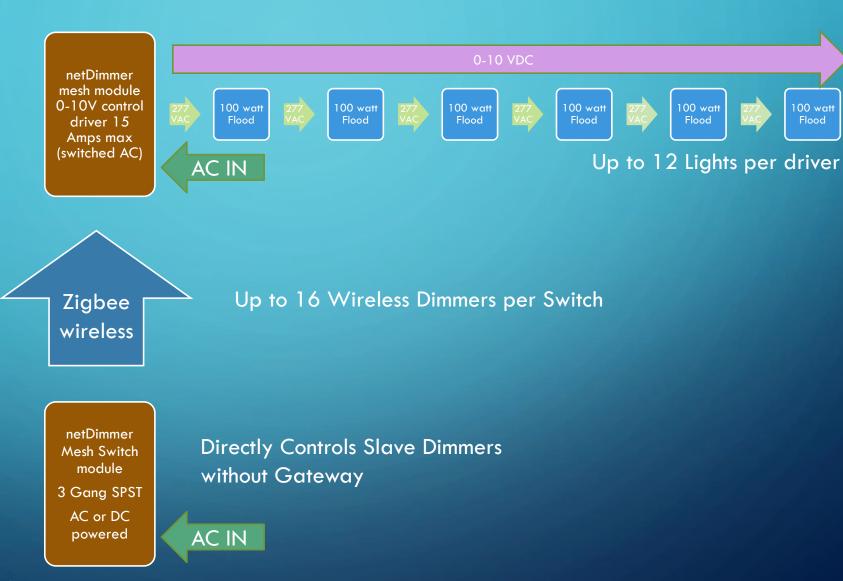
- Stand alone dimmer modules
  - Operate independent of gateway
  - Microwave Motion Sensor
  - Light harvesting (photocell)
  - Wireless Remote Switch controller
  - Wireless configuration and direct monitoring
  - Fault detection and alerting
  - Stand alone (isolated) operation option
  - Local monitoring and control via browser device
  - Optional USB wireless USB transceiver



#### NETDIMMER -STANDALONE LED DRIVERS WITH SENSORS



### NETDIMMER – WIRELESS LED DRIVERS WITH REMOTE SWITCH



Flood

Up to 16 mesh modules per gateway