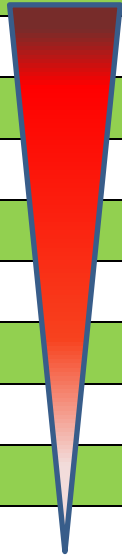
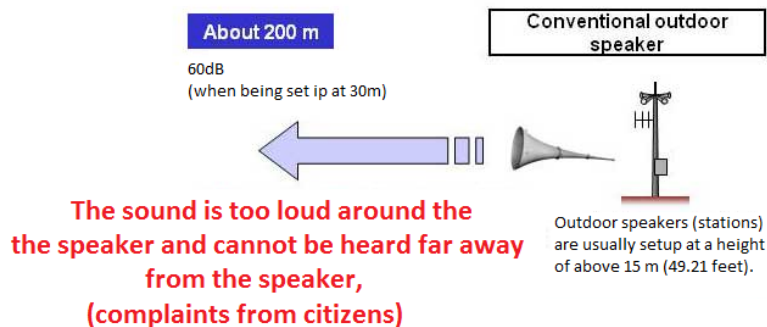


## GUIDELINE FOR SOUND NOISE

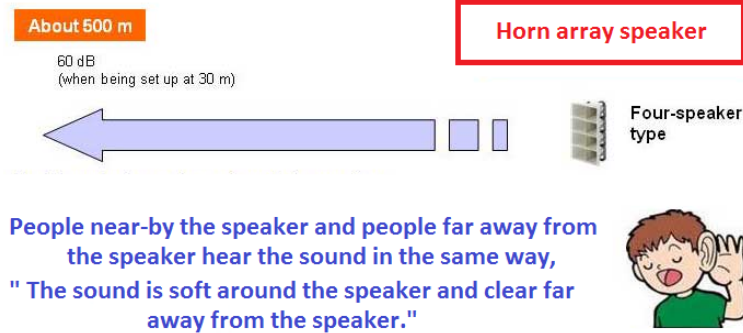
dB(A)	
140dB	Around a jet engine.
	Limit of physical pain.
120dB	Limit of sense of hearing.
	1m from an accelerating motorbike.
100dB	3m from a car horn beeping.
	Under a railway bridge.
80dB	On a subway.
	On the street of a downtown, Typing room.
60dB	In a department store, Regular task.
	Quite office.
40dB	Radio un a quite house.
	Suburban residential area late at night.
20dB	Whispering voice.
	Breathing sound.
0dB	Lowest level of sound people can be sensed.



### OUR CONVENTIONAL DESIGN



## OUR NEW PROPOSED DESIGN

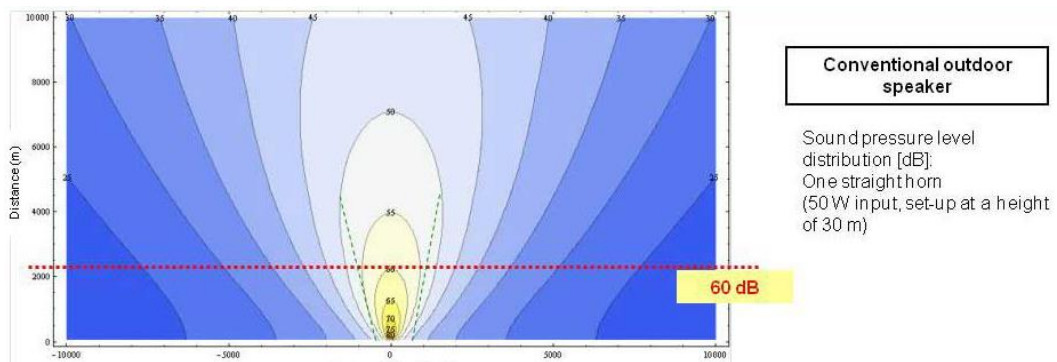


500 meter

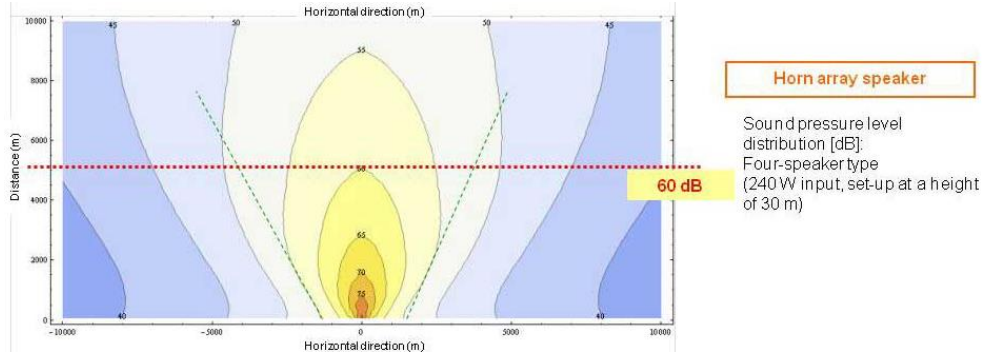


1000 meter

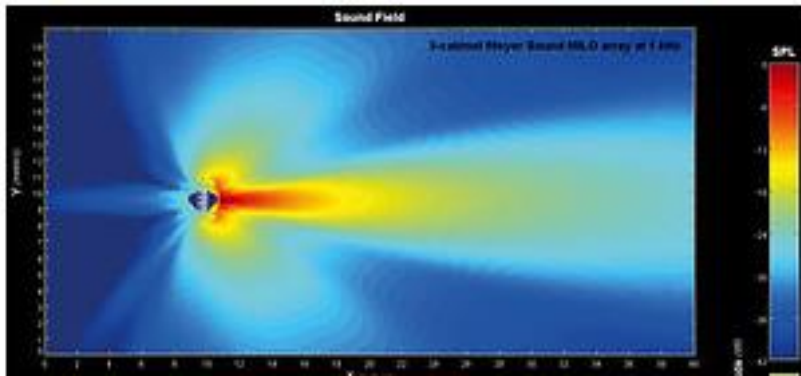
**Note : Actual hearing condition depends on weather, land form and other conditions.  
The above data are guideline when using outdoor speaker.**



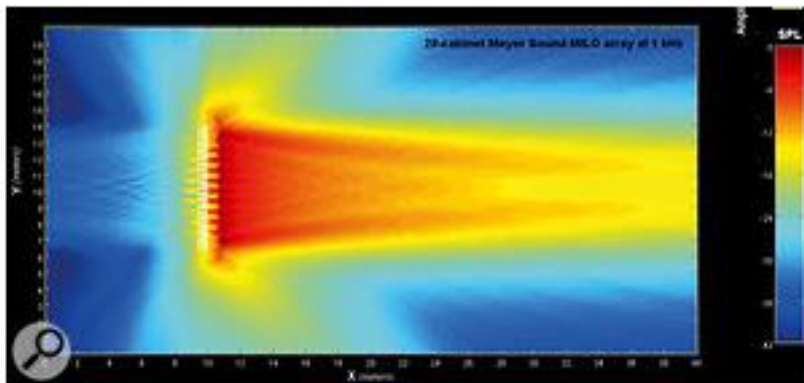
**CONVENTIONAL OUTDOOR SPEAKER SOUND PRESSURE PATTERN**



**HORN ARRAY SPEAKER SOUND PRESSURE PATTERN**



**SINGLE SPEAKER SYSTEM**



**OUR ARRAY SPEAKER SYSTEM**

**SIMULATION OF ACOUSTIC PATTERN**

The example shown is a composite of two predictions made from multi-purpose acoustical modeling program. One with just one (1) loudspeaker, the other with four (4) speaker. Both at 1kHz. It is clearly

possible to see how much more directional and how much louder, the array is. You can also clearly see the “side lobes” that develop.

## **Emergency Mass Warning System (BASIC 750W) EFFECTIVE SOUND COVERAGE 500 – 800 Meter radius**

Note 1 :

1. Sound Delay of 2.0 seconds were measured from source of alarm (Tower) at 1km diameter distance.
2. At every 50m distance a 33dB drop (Sound Pressure Loss in free space).
3. Sound Measured are on Basic Design of Installed EMWS (Single Speaker System).

Note 2 :

Actual hearing condition depends on weather, land form and other conditions.  
The above data are guideline when using outdoor speaker.

### **RTU Features**

- **Big 128 x 64 Graphical LCD Display.**
- **32-bit High speed Microcontroller.**
- **4GB Micro SD (min) or USB Stick.**
- **Wide Operating Voltage 12V - 24VDC.**
- **Embedded Real Time Clock with lithium battery backup.**
- **Operating temperature : -40 °C ~ 65°C.**
- **3 Warning Sounds, 6 Custom Alarm or messages.**
- **8 Time Programmable Alarms or messages.**
- **3 Alarm operation / 6 Custom.**
- **Remotely operated thru RTU or On-site operation.**

### **Audio Driver Amplifier**

- Class Type : Class D Bridgeable Ready
- Operating Voltage : 13.8 VDC
- Power Output : 750W (20Hz – 20KHz, <1.0%THD)
- Impedance : 2 – 8 Ohms

## Long Throw Speaker

- Configuration : Four (4) Speaker System
- Rated Power : 300 Watts x 4
- Impedance : 4 Ohms, 8 Ohms
- Opening Angle Horizontal : 90° / 40°
- Opening Angle Vertical : 130° / 45°
- Frequency Range : 250Hz – 20KHz

## System Enclosure

- Powder coated NEMA compliant Box.
- Dimension : H x L x W (800 x 600 x 250mm)
- Protection Type : IP65

## Solar Charge Controller

- Rated Voltage : 12V 20-30A
- Charging mode : MPPT / PWM
- Display : Remarks, Voltage, Charge Current, Battery capacity, Load).

## Solar Panel

- Maximum Power (pmax) : 100 Watts
- Maximum Power voltage : 24V -36V
- Open Circuit Voltage : 45V
- Short Circuit Current : 6A
- Power Tolerance : +5%
- Type : Monocrystalline

## Battery

- Battery type : AGM, GEL, Lead acid.
- Rated voltage : 13.8VDC
- Rated current : 100A

# Emergency Mass Warning System (BASIC 1000W) EFFECTIVE SOUND COVERAGE 800 meter – 1Km radius

Note 1 :

1. Sound Delay of 2.0 seconds were measured from source of alarm (Tower) at 1km diameter distance.
2. At every 50m distance a 33dB drop (Sound Pressure Loss in free space).
3. Sound Measured are on Basic Design of Installed EMWS (Array Speaker System).

Note 2 :

Actual hearing condition depends on weather, land form and other conditions.  
The above data are guideline when using outdoor speaker.

## RTU Features

- **Big 128 x 64 Graphical LCD Display.**
- **32-bit High speed Microcontroller.**
- **4GB Micro SD (min) or USB Stick.**
- **Wide Operating Voltage 12V - 24VDC.**
- **Embedded Real Time Clock with lithium battery backup.**
- **Operating temperature : -40 °C ~ 65°C.**
- **3 Warning Sounds, 6 Custom Alarm or messages.**
- **8 Time Programmable Alarms or messages.**
- **3 Alarm operation / 6 Custom.**
- **Remotely operated thru RTU or On-site operation.**

## Audio Driver Amplifier

- Class Type : Class D Bridgeable Ready
- Operating Voltage : 13.8 VDC
- Power Output : 2500W (20Hz – 20KHz, <1.0%THD)
- Impedance : 2 – 8 Ohms

## Long Throw Speaker

- Configuration : Eight (8) Speaker Array System
- Rated Power : 300 Watts x 8
- Impedance : 4 Ohms, 8 Ohms
- Opening Angle Horizontal : 90° / 40°
- Opening Angle Vertical : 130° / 45°
- Frequency Range : 250Hz – 20KHz

## System Enclosure

- Powder coated NEMA compliant Box.
- Dimension : H x L x W (800 x 600 x 250mm)
- Protection Type : IP65

## Solar Charge Controller

- Rated Voltage : 12V 10A
- Charging mode : MPPT / PWM
- Display : Remarks, Voltage, Charge Current, Battery capacity, Load).

## Solar Panel

- Maximum Power (pmax) : 200 Watts
- Maximum Power voltage : 24V -36V
- Maximum Power Current : 5.56A
- Open Circuit Voltage : 45V
- Short Circuit Current : 6A
- Power Tolerance : +5%
- Type : Monocrystalline

## Battery

- Battery type : AGM, GEL, Lead acid.
- Rated voltage : 13.8VDC
- Rated current : 150A

# Emergency Mass Warning System (BASIC 8000W)

## EFFECTIVE SOUND COVERAGE 1.5 Km – 2.5 Km radius

Note 1 :

1. Sound Delay of 2.0 seconds were measured from source of alarm (Tower) at 1km diameter distance.
2. At every 50m distance a 33dB drop (Sound Pressure Loss in free space).
3. Sound Measured are on Basic Design of Installed EMWS (Array Speaker System).

Note 2 :

Actual hearing condition depends on weather, land form and other conditions.  
The above data are guideline when using outdoor speaker.

### RTU Features

- **Big 128 x 64 Graphical LCD Display.**
- **32-bit High speed Microcontroller.**
- **4GB Micro SD (min) or USB Stick.**
- **Wide Operating Voltage 12V - 24VDC.**
- **Embedded Real Time Clock with lithium battery backup.**
- **Operating temperature : -40 °C ~ 65°C.**
- **3 Warning Sounds, 6 Custom Alarm or messages.**
- **8 Time Programmable Alarms or messages.**
- **3 Alarm operation / 6 Custom.**
- **Remotely operated thru RTU or On-site operation.**

### Audio Driver Amplifier

- Class Type : Class D Bridgeable Ready x 2
- Operating Voltage : 13.8 VDC
- Power Output : 8000W (20Hz – 20KHz, <1.0%THD)
- Impedance : 2 – 8 Ohms

### Long Throw Speaker

- Configuration : 16 Speaker Array System
- Rated Power : 500 Watts x 8
- Impedance : 4 Ohms, 8 Ohms
- Opening Angle Horizontal : 90° / 40°
- Opening Angle Vertical : 130° / 45°
- Frequency Range : 250Hz – 20KHz

### System Enclosure



- Powder coated NEMA compliant Box.
- Dimension : H x L x W (800 x 600 x 250mm)
- Protection Type : IP65

## Solar Charge Controller

- Rated Voltage : 12V 40A
- Charging mode : MPPT / PWM
- Display : Remarks, Voltage, Charge Current, Battery capacity, Load).

## Solar Panel

- Maximum Power (pmax) : 600 Watts
- Maximum Power voltage : 24V -36V
- Maximum Power Current : 10.56A
- Open Circuit Voltage : 45V
- Short Circuit Current : 6A
- Power Tolerance : +5%
- Type : Monocrystalline

## Battery

- Battery type : AGM, GEL, Lead acid.
- Rated voltage : 13.8VDC
- Rated current : 200A x 2