

Closed Circuit Cooler Data Sheet



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Project : Trane VRF Closed Circuit Cooler
 Equipment Reference:
 Product Type : LRWB Closed Circuit Cooler

Date: 11/30/2011

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Selection Criteria		IBC Design Criteria	
Capacity (Tons):	24	Seismic Design Force (g)	1g
Capacity (MBH):	363.38	Velocity Pressure (psf)	up to 145
Fluid Type:	30% Propylene Glycol	Selection Factors	
Flow (GPM):	85.0		
Entering Fluid Temp (°F):	95.0		
Leaving Fluid Temp (°F):	86.0		
Wet Bulb (°F):	74.0		

Unit is CTI certified for water as the process fluid and is ASHRAE 90.1 compliant

Qty	Model	Capacity (Tons)	Percent Capacity
1	LRWB 3-4G6-Z	24.38	100.6

All Weights, Dimensions and Technical Data are Shown per Unit

Fans:	1	Overall Length:	10' 1.875"
# Fan Motors @ HP:	(1) @ 5.00 (460/3/60)	Overall Width:	3' 4.500"
# Pump Motors @ HP:	(1) @ .50	Overall Height:	7' 3.250"
Air Flow (CFM)	10,900		
Spray Water Flow (gpm)	100.0	Operating Weight (lbs):	4,480
Pressure Drop Through Coil (psi):	4.1	Shipping Weight (lbs):	3,020
Evaporated Water Rate (gpm):	0.6	Ships as single piece:	
Recommended Bleed Rate (gpm):	0.6		
Riser Pipe Diameter (inch):	3		

Options Selected

Fan Motor: Inverter Capable, Premium Efficient
 Series Flow Operation
 IBC Compliant up to 1g
 Galvanized Steel Basin

Sound Data (Sound Pressure Levels in dB(A))

	End	Mtr Side	Opp End	Opp Mtr Side	Top
S.P.L. dB(A) at 5'	66	66	60	66	66
S.P.L. dB(A) at 50'	50	55	47	55	57

- Note 1: Sound Data shown is for 1 Cell operating at full speed
 Note 2: The use of frequency inverters (Variable Frequency Drives) can increase sound levels.
 Note 3: Sound option(s) selected: None

Layout Criteria
Recommended Clearances Around Units (Feet)

EVAPCO LRWB CLOSED CIRCUIT COOLER

(1) EVAPCO Model LRWB 3-4G6-Z Counterflow, Blow-Through Closed Circuit Cooler with single side air entry to cool 85 gpm of 30% Propylene Glycol from 95°F to 86°F with a 74°F entering wet bulb temperature. Unit is CTI certified for water as the process fluid and is ASHRAE 90.1 compliant.

Unit Type

Hot-dip galvanized steel, factory-assembled, counterflow blow-through.

Basin-fan Section

Basin-Fan section is constructed of heavy gauge mill hot-dip galvanized steel. All galvanized steel is coated with a minimum of 2.35 ounces of zinc per square foot of area (G-235 designation). Fan section includes centrifugal fans and drives mounted and aligned at the factory. During fabrication, all panel edges are coated with a 95% pure zinc-rich compound.

IBC Compliance

The unit structure has been designed, analyzed, and constructed in accordance with the latest edition of International Building Code (IBC) Regulations for seismic loads up to 1g and wind loads up to 145psf.

IBC Compliance

The unit structure has been designed, analyzed, and constructed in accordance with the latest edition of International Building Code (IBC) Regulations for seismic calculation of 1g and wind load calculation of 145psf.

Make Up Float Valve Assembly*

Brass float valve with adjustable, unsinkable, foam-filled plastic float.

Pan Strainer*

All type 304 stainless steel with large area removable perforated screens.

Access

G-235 hot-dip galvanized steel circular access doors held in place by wingnuts.

Fan Discharge Cowl

G-235 hot-dip galvanized steel cowls provided on each fan discharge extending within the basin to increase fan efficiency and prevent water from entering fans.

Bleed-off*

Waste water bleed line with adjustable valve provided.

Pump*

Horizontally installed close-coupled centrifugal pump with mechanical seal. Totally enclosed motor suitable for outdoor operation.

Fan Wheels

Fans are forwardly curved centrifugal type of hot-dip galvanized steel factory installed into the fan section. They are statically and dynamically balanced for vibration free operation. Fan housings have compound curve inlet rings for efficient air entry.

Fan Shaft Bearings

Solid shaft of ground and polished steel. Fan shaft is supported by heavy-duty, self-aligning bearings with cast iron housings and lubrication fittings for maintenance.

Fan Motor

Totally enclosed, ball bearing type with 1.15 service factor suitable for outdoor service. Mounted on an adjustable motor base.

Fan Drive

V-belt type with taper lock sheaves. Selected for 150% motor nameplate horsepower. Mounted and aligned at the factory.

Fan End Inlet Screen

Hot-dip galvanized steel screens, 1" wire mesh.

Coil

Thermal-Pak coil design of all prime surface steel, encased in steel framework with the entire assembly hot-dip galvanized after fabrication. Designed with sloping tubes for liquid drainage and tested to 400 psig air under water. (Patent No. 4755331)

Water Distribution System

Heavy-duty molded nylon ZM spray nozzles with large 1-5/16" diameter opening and internal sludge ring to eliminate clogging. ZM nozzles are threaded into Schedule-40 Polyvinyl Chloride headers equipped with removable end plugs for ease of cleaning.

Fan Side Inlet Screen

PVC coated radial screens

Heat Transfer Casing Construction

G-235 hot-dip galvanized steel panel construction, separable from basin section.

Eliminators

Constructed entirely of inert Polyvinyl Chloride (PVC) in light, easily handled sections. The eliminators shall incorporate three changes in air direction to assure removal of entrained moisture from the discharge air stream.

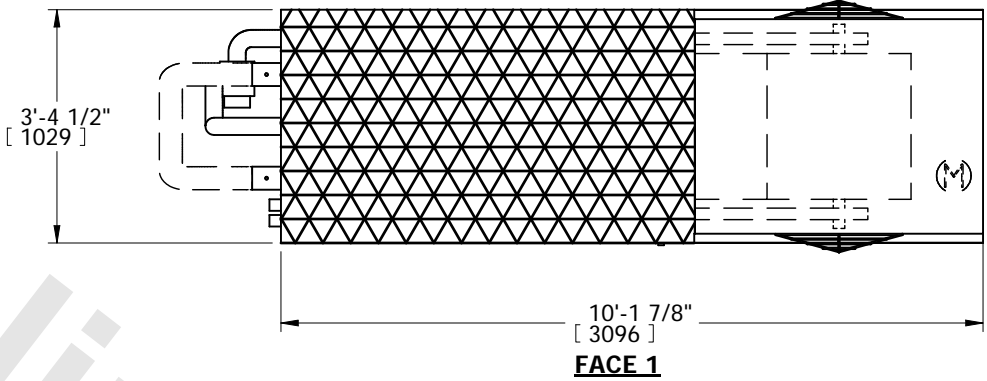
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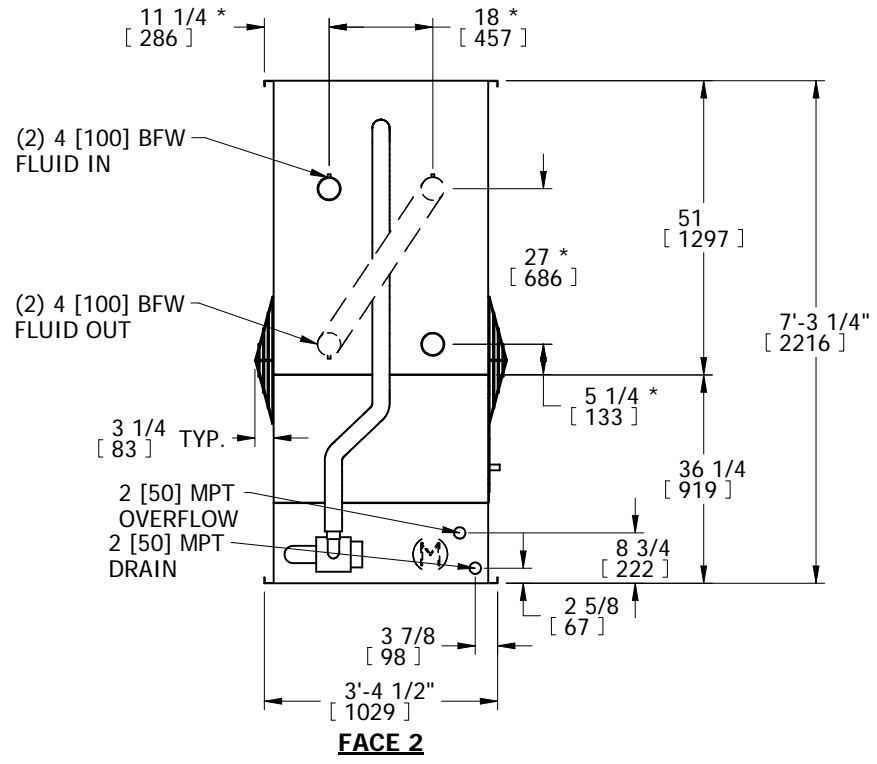
UNIT CLOSED CIRCUIT COOLER	MODEL # LRWB 3-4G6-Z	SCALE NTS	DWG. # WV030608-DRB-SF	REV. -	DATE 11/30/2011	SERIAL #
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- NOTES:
1. (M)- FAN MOTOR LOCATION
 2. * -APPROXIMATE DIMENSIONS DO NOT USE FOR PRE-FABRICATION OF CONNECTION PIPING
 3. MPT DENOTES MALE PIPE THREAD
FPT DENOTES FEMALE PIPE THREAD
BFW DENOTES BEVELED FOR WELDING
 4. + UNIT WEIGHT DOES NOT INCLUDE ACCESSORIES (SEE SEPARATE DRAWINGS FOR ACCESSORIES)
 5. 3/4" DIA. MOUNTING HOLES. REFER TO RECOMMENDED STEEL SUPPORT DRAWING
 6. MAKE-UP WATER PRESSURE-20 psi MIN, 50 psi MAX
 7. SERIES FLOW PIPING AUX. CROSSOVER DRAIN ARE BY OTHERS

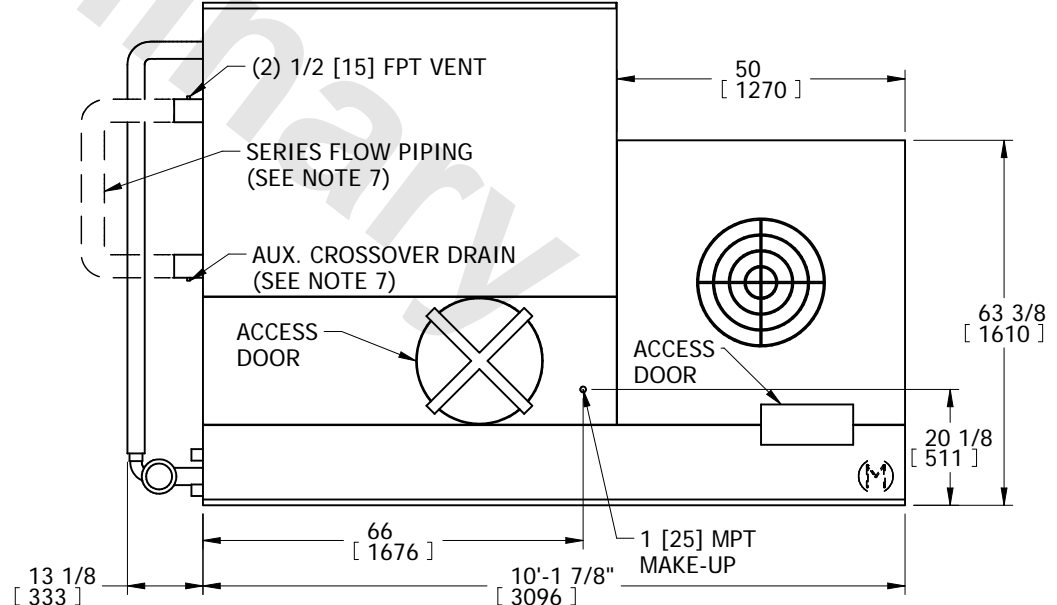
**FACE 2
PLAN VIEW**



FACE 1



FACE 2



FACE 1

SHIPPING WEIGHT 3020 lbs+ [1370] kg+	OPERATING WEIGHT 4480 lbs+ [2032] kg+	HEIEST SECTION WEIGHT 3020 lbs+ [1370] kg+	NO. OF SHIPPING SECTIONS 1
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LRWB 3-4G6-Z

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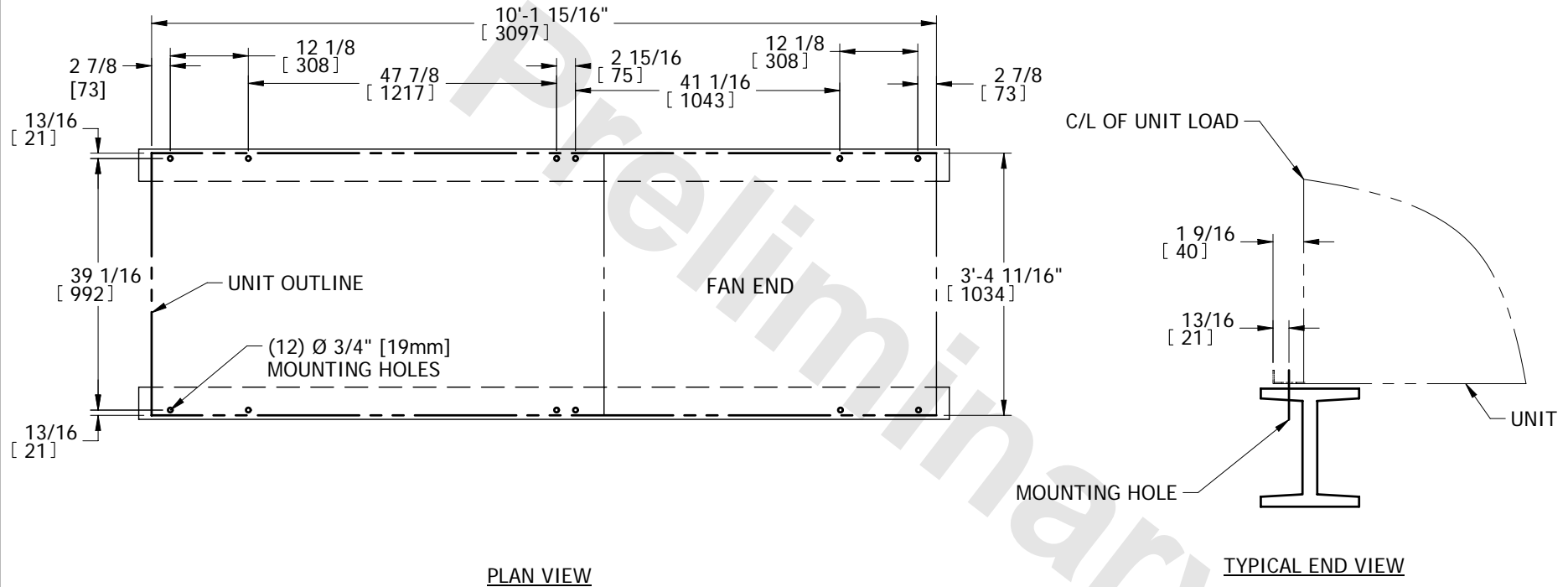
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TITLE STEEL SUPPORT CONFIGURATION

UNIT: 3X6 FORCED DRAFT LR/LP UNITS

DWG. #

SLAL0306-DA

**NOTES:**

- BEAMS SHOULD BE SIZED IN ACCORDANCE WITH ACCEPTED STRUCTURAL PRACTICES. MAXIMUM DEFLECTION OF BEAM UNDER UNIT TO BE 1/360 OF UNIT LENGTH NOT TO EXCEED 1/2" [13mm].
- DEFLECTION MAY BE CALCULATED BY USING 55% OF THE OPERATING WEIGHT AS A UNIFORM LOAD ON EACH BEAM. SEE CERTIFIED PRINT FOR OPERATING WEIGHT.
- SUPPORT BEAMS AND ANCHOR HARDWARE ARE TO BE FURNISHED BY OTHERS. ANCHOR HARDWARE TO BE ASTM - A325 5/8" [16mm] BOLT OR EQUIVALENT.
- BEAMS MUST BE LOCATED UNDER THE FULL LENGTH OF THE PAN SECTION.
- SUPPORTING BEAM SURFACE MUST BE LEVEL. DO NOT LEVEL THE UNIT BY PLACING SHIMS BETWEEN THE UNIT MOUNTING FLANGE AND THE SUPPORTING BEAM.
- ANCHORING ARRANGEMENT SHOWN HAS A MAXIMUM WIND RATING OF 145 PSF [6.96 KPa] ON CASSED VERTICAL SURFACES.
- THE FACTORY RECOMMENDED STEEL SUPPORT CONFIGURATION IS SHOWN. CONSULT THE FACTORY FOR ALTERNATE SUPPORT CONFIGURATIONS.
- UNIT SHOULD BE POSITIONED ON STEEL SUCH THAT THE ANCHORING HARDWARE FULLY PENETRATES THE BEAM'S FLANGE AND CLEARS THE BEAM'S WEB.

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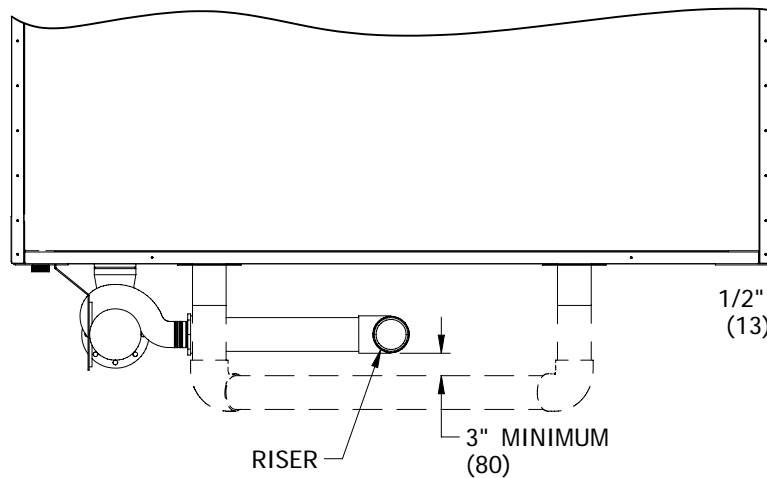
TITLE
RECOMMENDED SERIES FLOW CROSSOVER PIPING

UNIT:
LRW, LSW, ATW, UBW, PMW

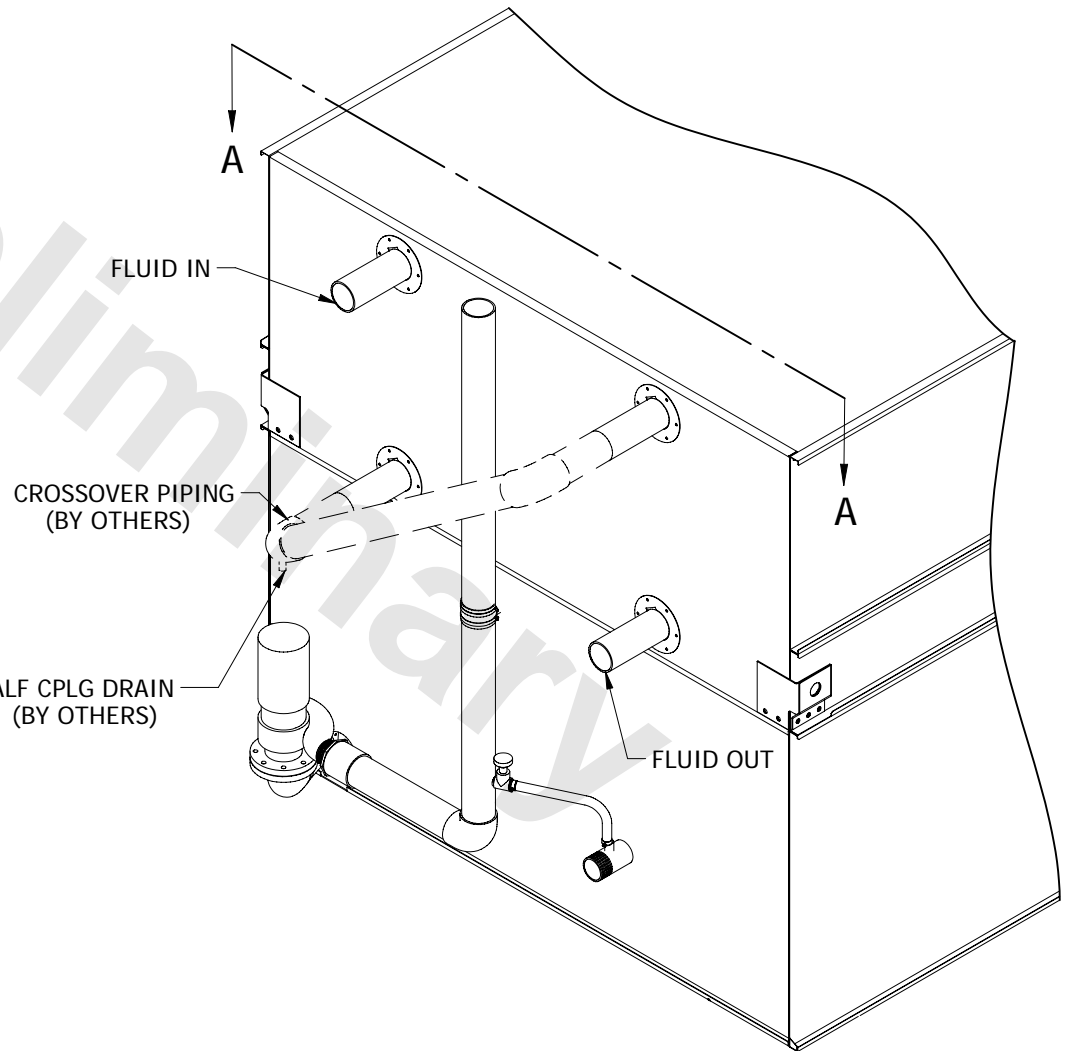
DWG. #
XPA0000-DRA-ST
11/30/2011

NOTES:

1. THIS DRAWING IS INTENDED TO PROVIDE CROSSOVER GUIDELINES ONLY.
2. FOR PIPE MATERIAL, REFERENCE BID SPECIFICATIONS.
3. REFERENCE CERTIFIED PRINT FOR COIL CONNECTION DIAMETER AND TYPE.



VIEW A-A





Sound Pressure Levels (SPL) in dB RE 0.0002 Microbar
 Sound Power Levels (PWL) in dB RE 10-12 Watt

MODEL LRWB 3-4G6-Z
 MOTOR 5.00 HP
 # MOTORS 1
 SPEED: Full Speed

1 CELL DATA

BAND	SOUND PRESSURE LEVEL (dB)										SOUND POWER LEVEL (dB)
	End		Motor Side		Opp End		Opp Mtr. Side		Top		
	5 ft (1.5m)	50 ft (15m)	5 ft (1.5m)	50 ft (15m)	5 ft (1.5m)	50 ft (15m)	5 ft (1.5m)	50 ft (15m)	5 ft (1.5m)	50 ft (15m)	
63 HZ	66	53	67	57	66	55	67	57	61	54	87
125 HZ	62	53	65	55	63	53	65	55	63	53	86
250 HZ	60	49	63	52	60	51	63	52	62	51	83
500 HZ	62	47	62	50	58	44	62	50	64	53	82
1 KHZ	61	45	60	50	53	39	60	50	60	51	80
2 KHZ	59	42	59	48	50	35	59	48	58	50	79
4 KHZ	57	40	57	47	45	33	57	47	53	49	77
8 KHZ	54	37	54	44	44	33	54	44	52	47	76
CALC dBA	66	50	66	55	60	47	66	55	66	57	86

Sound option(s) selected: None