SUBMISSION OF EQUIPMENT, MATERIALS AND SAMPLE BOARD FORM

Project No.: AP538 Project : HGCGC Watson Centre

To:. DSCO Group Limited c.c. ☐ **Beria** – Mr. Ken Wong ☐ **EMO** – Mr. Mac Leung

Attn: Mr. Rod C.K. Cheung ☒ **HGCGC** – Mr. YC Lee

☒ **CKH** – Mr. Stephen Fong

☒ **HGC** – Mr. Timmy Wong

Contractor/Sub-Contractor* : Newtech Technology Co. Ltd

Letter reference. : MC101-MAT-MVAC-037A Submission Date : **14 Aug 2013**

*(*Delete where inappropriate)*

A. SUBMISSION CONTENT

A.1 Submission No. : MC101-MAT-MVAC-037A Revision No. : ☐ 1st ☐ 3rd ☐ 5th ☐ 7th ☒ 2nd ☐ 4th ☐ 6th ☐ 8th

(Please tick)

A.2

Equipment Originally Offered			Equipment Offered		
Type	:	Cross flow type cooling tower	Type	:	Cross flow type cooling tower
Manufacturer	:	Mesan / BAC	Manufacturer	:	Mesan
Origin	:	PRC	Origin	:	PRC
Model No.	:	MXR-KM-G2-30	Model No.	:	MXR-KM-G2-30

A.3 Reasons for change if any :

(Equipment will be rejected without detailed substantiation)

A.4 Attached Details

☒ Manufacturer's Catalogue/Data ☒ Equipment Schedule

☒ Certificate/Approval Letter ☐ Installation Detail

☐ Sample Board ☒ Others: Job reference

Submitted By :

(Nelson Won)

Contractor's Authorised Signature

B. RESPONSE

☐ A – No exception taken.

☐ B – No objection subject to comments.

☐ C – Submission incomplete. See comments / Resubmit with missing details.

☐ D – Submission rejected. See comments / Resubmit.

C. COMMENTS

Signed for Consultant.

(Checked by) ( )

MESAN FIBERGLASS ENGINEERING (INT'L) LTD.
明 新 玻 璃 纖 維 工 程 (國 際) 有 限 公 司

香港九龍新蒲崗大有街1號 勤達中心12樓01室
Unit 01, 12/F Midas Plaza, 1 Tai Yau Street, San Po Kong, KLN
Tel: (852)2787 2996 Fax: (852) 2787 2983

Cooling Tower Submission

Project: Watson Centre

Model: MXR-KM-G2-30 x 3sets

Prepared by: Payton Kwok

Date: 12-8-2013

Authorized Distributor

Mobile : 9559 6305
Direct Tel : 2787-2995
Email : payton@mesanct.com

Content

1) Catalogue

2) Drawings

3) Equipment Schedule

4) CTI Cert.

5) Make up calculation sheet

6) Job Reference

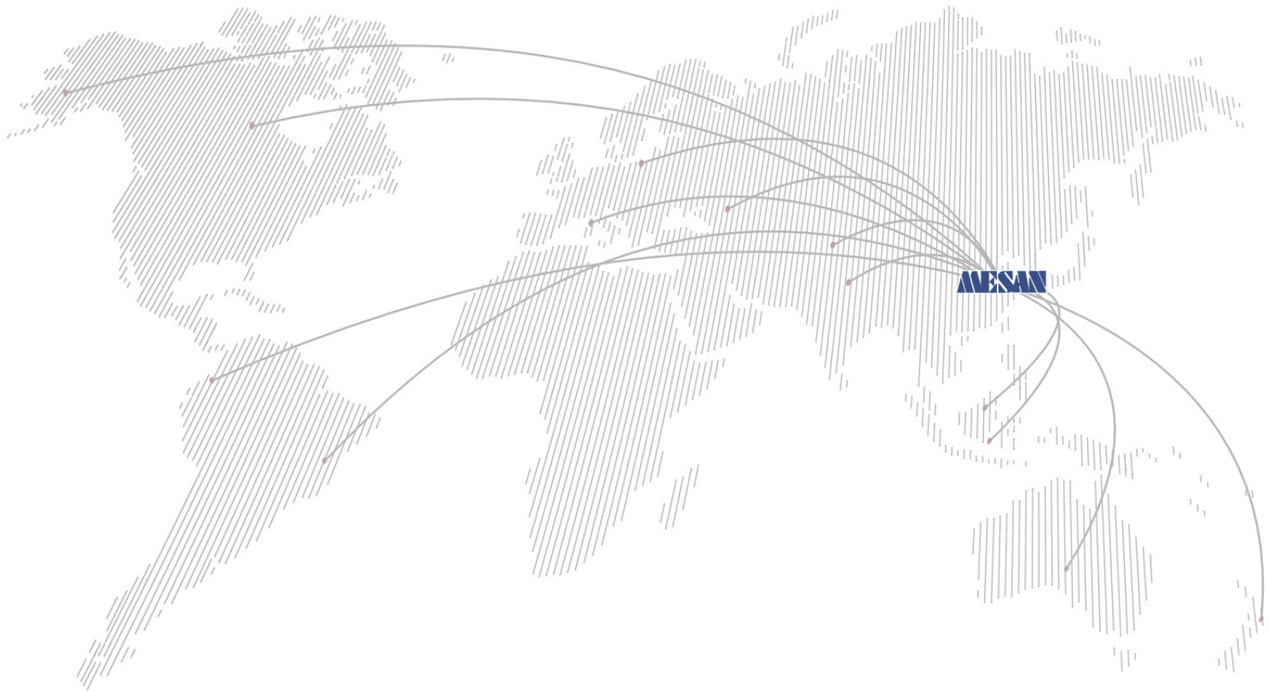
Authorized Distributor

Mobile : 9559 6305
Direct Tel : 2787-2995
Email : payton@mesanct.com

Catalogue

Authorized Distributor

Mobile : 9559 6305
Direct Tel : 2787-2995
Email : payton@mesanct.com



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2013-1L/MXR-KM/M

MESAN

CTI CERTIFIED

MXR-KM Series

Cross Flow Induced Draft

MXR-KM Series

Cross Flow Induced Draft

For over 40 years, the MESAN Group has engaged in the engineering and manufacturing of high quality, high efficiency evaporative cooling equipment. Through hard work, ethics, and a constant pursuit of excellence, MESAN has become a leader in the cooling tower industry in Asia. Today, MESAN continues to play a vital role in the development of new technologies and products, and is proud to have been selected as a key supplier for many renowned projects in the global market.

MESAN products are CTI certified, and its quality management system is ISO-9001 certified. MESAN's focus on engineering, research and development, quality management and excellent customer service, is the powerful combination that drives the MESAN brand up on a constant and steady growth. The many patents granted, are proof of MESAN's strive for delivering new environmentally friendly technologies and energy efficient products for the global markets.

MESAN USA strategically located at the center of the Americas continent, in Miami, Florida, USA, consolidates MESAN Group's global presence and reiterates its commitment to provide world-class products for an ever-expanding market.

MESAN USA offers local presence, local inventory of equipment and spare parts and bilingual technical support as well as customer service, in English and Spanish. All products offered by MESAN USA have been engineered to meet and exceed all codes and standards applicable in this hemisphere.

Overview

The MXR-KM is a cost-effective, induced-draft, cross-flow cooling tower. Available in 206 models with capacities ranging from 59m³/h to 1140m³/h. Each model is certified by the Cooling Technology Institute (CTI) for guaranteed thermal performance. The MXR-KM is designed for maximum performance and reliability. It is also ASHRAE 90.1-2010 compliant.

CTI CERTIFIED — MANUFACTURER'S PUBLISHED THERMAL PERFORMANCE IS CERTIFIED BY THE COOLING TECHNOLOGY INSTITUTE UNDER THE PROVISIONS OF STD-201 (11) — CERTIFICATION VALIDATION NO.: 08-24-03(R3)

Model Designation

CTI STD-201 Certified Line — Box Size Number — Fan Motor Power — Numbers of Cells, eg. 2 cells per set

MXR-KM - A1 - 4 - S4 - 2

- F4 - for SS304 Casing & Structure
- F6 - for SS316 Casing & Structure
- S4 - for FRP Casing & SS304 Structure
- S6 - for FRP Casing & SS316 Structure
- G - for HDGS Casing & Structure

Advantages

Long Service Life

The MXR-KM series' standard FRP construction, provides maximum corrosion resistance for long service life. MESAN towers use the highest quality gelcoat finish for smooth surfaces, which are easy to clean and prevent microbial growth. Also available with optional HDGS (G235 hot dipped galvanized steel) and SS-304 or SS-316 (Stainless Steel) for superior corrosion resistance.

Low Maintenance

Motors and drive components are located above the fan blades, with easy access from the top of the fan deck. Nozzle-free water distribution system. Sealed bearings rated for L10-80,000 hours ensure a trouble-free, almost maintenance free, drive assembly.

Low water consumption

Low fan speeds plus very efficient drift eliminators contribute to reduce the water consumption of the MXR-KM towers. Water consumption is one of the two important variables to earn LEED points.

Low Energy Consumption

Maximizing energy savings is at the core of every MESAN product. Low energy consumption is the most important variable to consider when pursuing LEED certification. The MXR-KM series have the lowest motor KW rating per ton of capacity in the market. All models are fully ASHRAE-90.1-2010 compliant, largely exceeding this standard's m³/h/kw requirements.

Trust MESAN with your evaporative cooling needs.

Mechanical Components

Motor
TEAO type, IP55 enclosure, class F insulation, high efficiency, and specially designed to operate within the high-humidity environment of a cooling tower.

Fan
High efficiency, axial, aluminum alloy fans, with innovative low drag, aerodynamic airfoil blade design, adjustable pitch blades and low-noise.

Speed Reducer
Fans are driven by low-speed V-belt reducers. Our reducers have very sturdy design with large diameter high tensile strength steel shafts; NSK permanently lubricated sealed bearings, isolated from the airstream within a sealed enclosure. Our V-belts designed to withstand the rigors of the humid environment, and ensure long and reliable operation.

Casing and Structural Elements

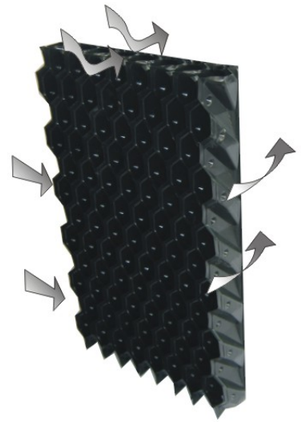
Casing
Hand-laid fiberglass with E-glass chopped strand mat, unsaturated polyester resin, and UV-resistant stabilized gel coat, combine to provide excellent corrosion resistance, structural integrity and long service life with minimum maintenance. Also available as options: HDGS (G235 hot-dipped galvanized steel), SS-304 /316 Stainless Steel casing, and any combination of all these materials. Hardware (nuts, bolts and washers) are also available standard in Dacromet coating or SS-304 /316 as an option.

Structural Frame
The standard structure is made of heavy-gauge G235 hot-dipped galvanized steel and as an option in SS-304 /316 stainless steel.

Water Distribution System

Hot Water Basins
Gravity water flow distribution, without nozzles, plus high efficiency diffuser baffles, ensure uniform coverage of the infill surface.

Infill
High efficiency infill, maximizes the contact surface between water and air, allowing for higher evaporation rates and improved heat transfer, while offering the lowest resistance to air flow, for reduced air pressure drop and lowest energy consumption. Staggered infill sheets, are designed for easier replacement in smaller sections, as oppossed to other brands' design in very large full height sheets that are very costly to replace. If a small section of MESAN's infill gets accidentally damaged, there is no need to replace the whole sheets, just the small damaged section.
Another interesting feature of Mesan's cross-flow infill is the built-in honeycomb air inlet channels that direct the air downwards for maximum coverage and contact between air and water and eliminate the intake louvers, which are required by other brands. For special applications we also offer intake louvers as an option.



Other Features

Internal Walkway
OSHA-compliant internal walkway that runs all the way across the tower is provided for easy maintenance access.

Cold Water Basin
1. The cold water basin is deep enough to help increase the NPSH for the pumps, and reduce the risk of cavitation.
2. A suction strainer is also a standard feature.
3. Brass make-up water valves with polymer floats are standard.
4. Equalizer connections are available for multiple cell applications.
5. Self-balancing single inlet piping is standard on smaller towers at no extra cost (up to Size E). This reduces installation time and costs (materials and labor).

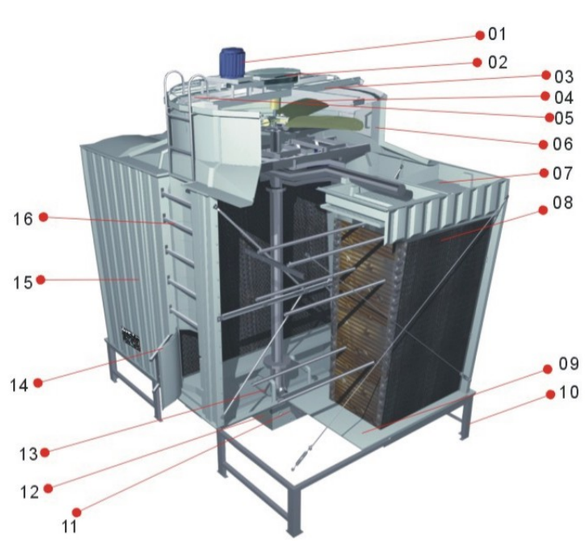
Factory Assembled
Sizes A1 to C4 can be precisely assembled at factory and shipped to the job-site in order to reduce installation time.

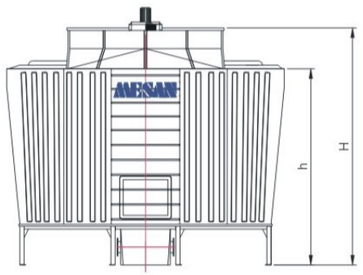
MXR-KM Series

Cross Flow Induced Draft

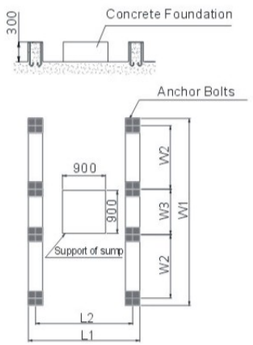
Model: A ~ E Cooling Capacity: 59~344m³/h

01. Motor
02. V-Belt Reducer
03. Motor Support
04. Fan
05. Fan Guard
06. Fan Stack
07. Hot Water Basin
08. Infill
09. Cold Water Basin
10. Lower Frame
11. Water Inlet
12. Suction Tank
13. Water Outlet
14. Access Door
15 Casing
16. Ladder

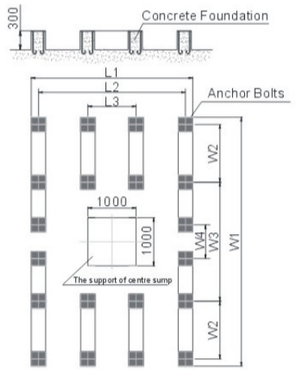




Model A ~ D



Model E



Model	Foundation Dimensions							Pipe Connections				
MXR-KM	L1	L2	L3	W1	W2	W3	W4	Inlet	Outlet	Overflow	Drain	M-U
	mm	mm	mm	mm	mm	mm	mm	DN	DN	DN	DN	DN
A	2330	2030	—	3910	1330	950	—	125	125	50	40	20
B	2500	2200	—	4020	1385	950	—	150	150	50	40	25
C	2830	2530	—	4290	1470	1050	—	200	200	50	40	25
D	3200	2900	—	4510	1580	1050	—	200	200	80	50	25
E	3350	3050	1000	5170	1200	2470	700	250	250	80	50	40

Product Technical Data

Model	Nominal Water Flow Rate	Motor	Tower Dimensions			
			L	W	H	h
MXR-KM	m³/h	kw	mm	mm	mm	mm
A1-1.1	59	1.1	2110	3950	3470	2850
A1-1.5	65	1.5				
A1-2.2	74	2.2				
A1-3	82	3				
A1-4	90	4				
A2-1.1	62	1.1	2110	3950	3470	2850
A2-1.5	68	1.5				
A2-2.2	78	2.2				
A2-3	87	3				
A2-4	96	4				
A2-5.5	106	5.5				
A3-2.2	86	2.2	2110	4040	3980	3360
A3-3	95	3				
A3-4	105	4				
A3-5.5	117	5.5				
A4-2.2	90	2.2	2110	4040	3980	3360
A4-3	101	3				
A4-4	110	4				
A4-5.5	123	5.5				
A5-2.2	94	2.2	2110	4040	4490	3870
A5-3	105	3				
A5-4	116	4				
A5-5.5	128	5.5				
A5-7.5	144	7.5				
A6-2.2	98	2.2	2110	4040	4490	3870
A6-3	109	3				
A6-4	120	4				
A6-5.5	134	5.5				
A6-7.5	150	7.5				
B1-2.2	93	2.2	2270	4140	3855	3210
B1-3	104	3				
B1-4	115	4				
B1-5.5	129	5.5				
B2-2.2	97	2.2	2270	4140	3855	3210
B2-3	108	3				
B2-4	119	4				
B2-5.5	132	5.5				
B2-7.5	147	7.5				
B2-11	167	11				
B3-3	115	3	2270	4240	4355	3710
B3-4	127	4				
B3-5.5	141	5.5				
B3-7.5	158	7.5				
B4-3	119	3	2270	4240	4355	3710
B4-4	132	4				
B4-5.5	147	5.5				
B4-7.5	162	7.5				
B5-3	118	3	2270	4240	4535	3890
B5-4	131	4				
B5-5.5	147	5.5				
B5-7.5	163	7.5				
B6-3	123	3	2270	4240	4535	3890
B6-4	136	4				
B6-5.5	152	5.5				
B6-7.5	169	7.5				

Model	Nominal Water Flow Rate	Motor	Tower Dimensions			
			L	W	H	h
MXR-KM	m³/h	kw	mm	mm	mm	mm
C1-3	126	3	2600	4450	4275	3460
C1-4	139	4				
C1-5.5	155	5.5				
C1-7.5	170	7.5				
C2-3	130	3	2600	4450	4275	3460
C2-4	144	4				
C2-5.5	161	5.5				
C2-7.5	178	7.5				
C3-4	155	4	2600	4540	4785	3970
C3-5.5	173	5.5				
C3-7.5	193	7.5				
C3-11	220	11				
C4-4	160	4	2600	4540	4785	3970
C4-5.5	179	5.5				
C4-7.5	199	7.5				
C4-11	227	11				
C5-4	163	4	2600	4540	5115	4300
C5-5.5	182	5.5				
C5-7.5	203	7.5				
C5-11	232	11				
C5-15	258	15				
C6-4	168	4	2600	4540	5115	4300
C6-5.5	188	5.5				
C6-7.5	210	7.5				
C6-11	239	11				
C6-15	266	15				
D1-4	174	4	2950	4740	4755	3970
D1-5.5	195	5.5				
D1-7.5	217	7.5				
D1-11	248	11				
D2-4	180	4	2950	4740	4755	3970
D2-5.5	202	5.5				
D2-7.5	225	7.5				
D2-11	256	11				
D3-4	184	4	2950	4740	5085	4300
D3-5.5	206	5.5				
D3-7.5	230	7.5				
D3-11	262	11				
D3-15	292	15				
D4-4	190	4	2950	4740	5085	4300
D4-5.5	213	5.5				
D4-7.5	237	7.5				
D4-11	270	11				
D4-15	301	15				
E1-5.5	226	5.5	3120	5430	4985	4145
E1-7.5	252	7.5				
E1-11	287	11				
E1-15	319	15				
E2-5.5	248	5.5	3120	5510	5335	4495
E2-7.5	274	7.5				
E2-11	314	11				
E2-15	349	15				
E3-5.5	242	5.5	3120	5430	5500	4660
E3-7.5	270	7.5				
E3-11	309	11				
E3-15	344	15				

Notes:

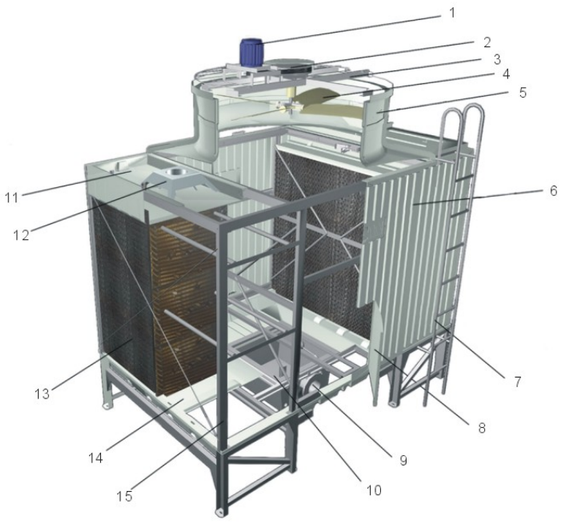
1) Nominal water flow is defined as rate of water cooled from 37°C to 32°C with 28°C wet-bulb temperature.

2) Satisfactory performance is based on precise selection, proper system design and installation in a clean and well-ventilated location.

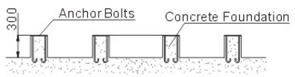
MXR-KM Series

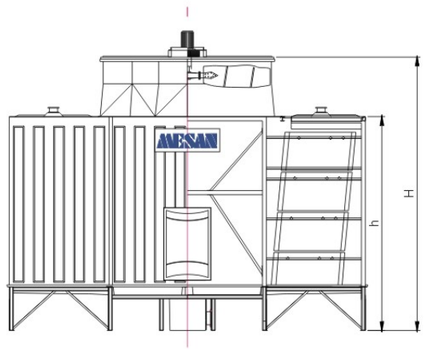
Cross Flow Induced Draft

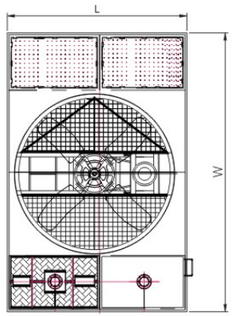
Model: F ~ K Cooling Capacity: 241~1140m³/h

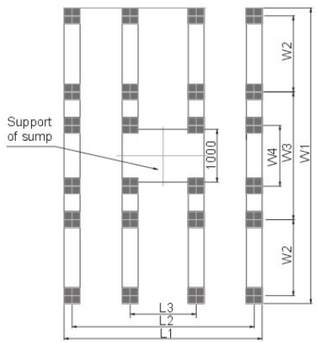


01 Motor
02 V-Belt Reducer
03 Motor Support
04 Fan
05 Fan Stack
06 Panel
07 Ladder
08 Access Door
09 Water Outlet
10 Suction Tank
11 Hot Water Basin
12 Water Inlet
13 Infill
14 Cold Water Basin
15 Lower Frame









Model	Foundation Dimensions							Pipe Connections				
MXR-KM	L1	L2	L3	W1	W2	W3	W4	Inlet	Outlet	Overflow	Drain	M-U
	mm	mm	mm	mm	mm	mm	mm	DN	DN	DN	DN	DN
F	3750	3450	1250	5600	1440	2420	1150	150×2	250	80	50	40
G	4250	3950	1450	6380	1700	2680	1150	125×4	250	80	50	40
H	4650	4350	1450	6760	1700	3060	1150	150×4	300	100	100	50
I	5350	5050	1667	7480	1700	3780	1150	150×4	300	100	100	50
J	5750	5450	1800	7780	1700	4080	1150	200×4	350	100	100	50
K	6300	6000	1450	8280	1700	4580	1150	200×4	350	100	100	50

Product Technical Data

Model	Nominal Water Flow Rate	Motor	Tower Dimensions			
			L	W	H	h
MXR-KM	m³/h	kw	mm	mm	mm	mm
F1-5.5	241	5.5	3530	5480	4990	3900
F1-7.5	269	7.5				
F1-11	307	11				
F1-15	342	15				
F2-5.5	262	5.5	3530	5480	5490	4400
F2-7.5	293	7.5				
F2-11	334	11				
F2-15	373	15				
F2-18.5	401	18.5				
F2-22	425	22				
F3-5.5	268	5.5	3530	5480	5665	4575
F3-7.5	300	7.5				
F3-11	342	11				
F3-15	382	15				
F3-18.5	411	18.5				
F3-22	436	22				
G1-11	374	11	4030	6260	5205	4110
G1-15	416	15				
G1-18.5	448	18.5				
G1-22	475	22				
G1-30	504	30				
G1-37	534	37				
G2-11	393	11	4030	6260	5540	4450
G2-15	439	15				
G2-18.5	472	18.5				
G2-22	501	22				
G2-30	557	30				
G3-11	403	11	4030	6260	5715	4620
G3-15	450	15				
G3-18.5	484	18.5				
G3-22	514	22				
G3-30	572	30				
H1-11	402	11	4430	6640	5255	4110
H1-15	452	15				
H1-18.5	486	18.5				
H1-22	516	22				
H1-30	574	30				
H2-11	439	11	4430	6640	5765	4620
H2-15	490	15				
H2-18.5	527	18.5				
H2-22	560	22				
H2-30	623	30				
H3-11	457	11	4430	6640	6100	4955
H3-15	510	15				
H3-18.5	550	18.5				
H3-22	584	22				
H3-30	650	30				
H3-37	699	37				

Model	Nominal Water Flow Rate	Motor	Tower Dimensions			
			L	W	H	h
MXR-KM	m³/h	kw	mm	mm	mm	mm
I1-15	556	15	5130	7360	5865	4720
I1-18.5	598	18.5				
I1-22	636	22				
I1-30	708	30				
I1-37	761	37				
I2-15	580	15	5130	7360	6200	5055
I2-18.5	623	18.5				
I2-22	664	22				
I2-30	740	30				
I2-37	796	37				
I2-45	851	45				
I3-15	593	15	5130	7360	6365	5220
I3-18.5	639	18.5				
I3-22	679	22				
I3-30	756	30				
I3-37	814	37				
I3-45	871	45				
I3-55	930	55				
J1-15	633	15	5530	7660	6200	5055
J1-18.5	682	18.5				
J1-22	725	22				
J1-30	808	30				
J1-37	869	37				
J1-45	930	45				
J2-18.5	697	18.5	5530	7660	6365	5220
J2-22	741	22				
J2-30	826	30				
J2-37	889	37				
J2-45	952	45				
J3-18.5	736	18.5	5530	7660	6875	5730
J3-22	785	22				
J3-30	874	30				
J3-37	941	37				
J3-45	998	45				
K1-18.5	737	18.5	6080	8160	6365	5220
K1-22	784	22				
K1-30	875	30				
K1-37	941	37				
K1-45	1008	45				
K2-22	829	22	6080	8160	6875	5730
K2-30	926	30				
K2-37	997	37				
K2-45	1067	45				
K2-55	1140	55				
K3-22	854	22	6080	8160	7220	6075
K3-30	954	30				
K3-37	1028	37				
K3-45	1100	45				

Notes:
1) Nominal water flow is defined as rate of water cooled from 37℃ to 32℃ with 28℃ wet-bulb temperature.
2) Satisfactory performance is based on precise selection, proper system design and installation in a clean and well-ventilated location.

MXR-KM Series

Cross Flow Induced Draft

MESAN

Options and Accessories

Designed to enhance the cooling towers performance, extend service life or reduce maintenance and down time.

External Service Platform

OSHA-compliant service platforms, handrails and safety cage, provide a safe and stable surface, for the maintenance personnel to perform routine maintenance tasks on our units.

Stainless Steel Structure and Hardware

Corrosion-resistant structure and hardware, greatly extends the life of any cooling tower, MESAN offers SS-304/316 stainless steel for FRP cooling towers.

Stainless Steel Casing

For those jobs where a premium tower is required, MESAN offers top of the line all stainless steel construction, as an option. Either SS-304/316 stainless steel, are available for the ultimate corrosion resistance and maximum structural integrity.

Discharge Sound Attenuator

For noise-sensitive applications, we offer discharge sound attenuators as an extension for the fan cylinder. These come in straight configuration or at an angle, to divert the discharge air away from neighboring buildings or structures.

Basin Heater

For cold climate areas, we offer electric basin heaters, to protect against freezing.

Electrical Panels

Constant or variable speed configurations, UL-listed, NEMA-1 and NEMA-3R, standard and custom-made electrical panels are also available .

Other Optional Accessories

Motor	High Efficiency Motor	**Others**	ANSI Safety Fan Guard
	Two Speed Motor		Basin Sweeper Systems with Filter/Separator Package
	VFD Motor		Equalizing Pipe Connection
Fan	FRP Fan		FRP / SST Louver
	Low Noise Fan		Removable Strainer
Reducer	180° Gear Box		HDG Steel Plated with Dacromet Frame
	90° Gear Box		Service Platform to Fully Cover the Cold Water Basin
Infill	ASTM PP Infill		Vibration Cut-off Switch
	High Temperature PP Infill		

MESAN guarantees the thermal performance of its CTI certified products. All CTI models are fully compliant with ASHRAE 90.1. Cooling Technology Institute (CTI) is dedicated to promoting truthful rating of cooling tower capacity, provides a third party independent verification and periodic monitoring of the products thermal efficiency. Having CTI certified products eliminates the need for costly onsite field test and ensures the system performance will meet the design objectives, for the benefit of the building owners, operators and public.

MXR-KM

MXL

CTI CERTIFIED

MXC

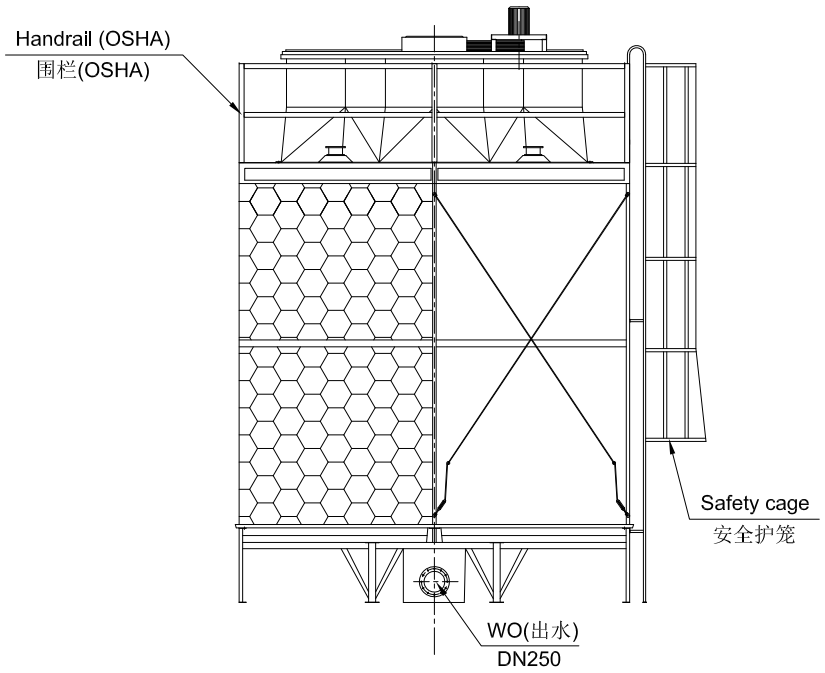
MCC

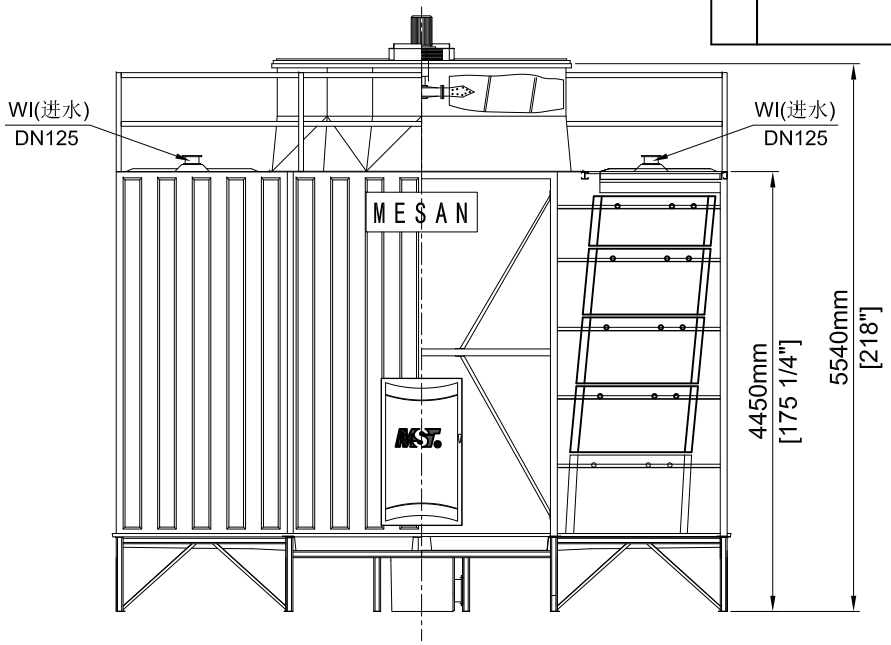
Drawings

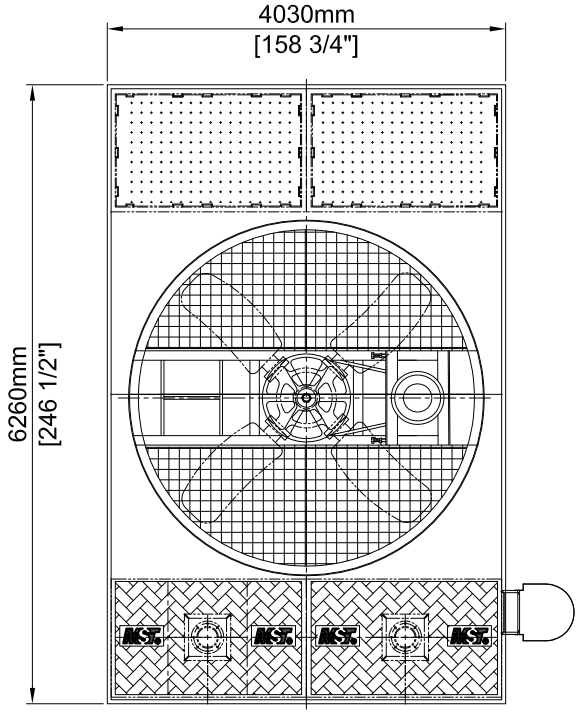
Authorized Distributor

Mobile : 9559 6305
Direct Tel : 2787-2995
Email : payton@mesanct.com

NO. 图号	PARTS NAME 零件名称	QTY. 数量	MATERIAL 材料	NOTICE 备注







Notes：

1. The water pump and the control valve shall be provided for the cooling tower outlet water.
   冷却塔出水,一般情况需配套水泵及阀门控制出水量。
2. Satisfactory performance of the cooling tower is based on precise selection, proper system design and installation in clean and well-ventilated locations.
   为保证冷却塔的性能，冷却塔放置现场应保持良好的进、出风条件。
3. For special conditions, please consult the manufacturer.
   如有特殊情况，请与厂家联系。

明新冷却水塔 MESAN COOLING TOWER

PROJECT / MODEL
项目 / 型号

MXR-KM-G2-30
LAYOUT

TITLE
标题

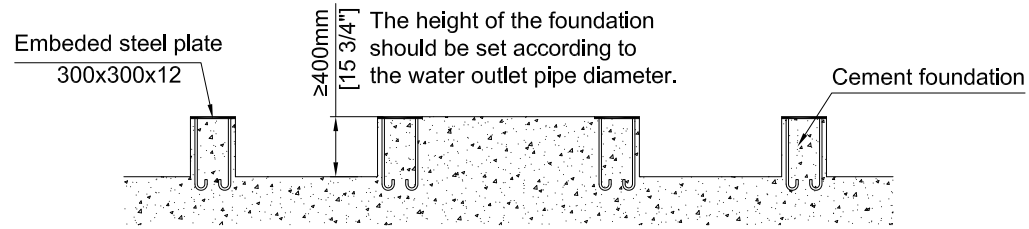
MESAN COOLING TOWER

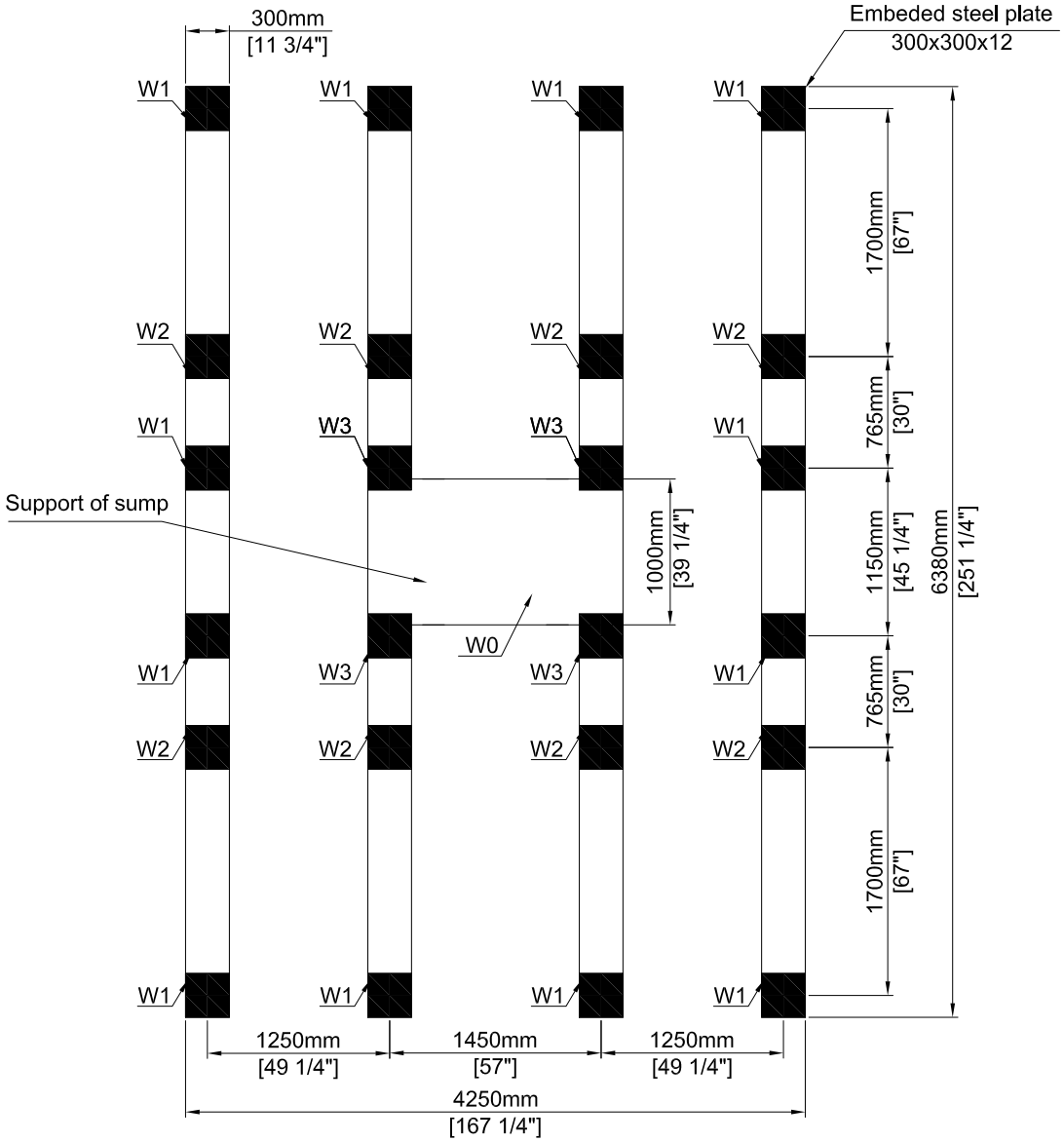
DRAWN BY 绘制	DESIGNED BY 设计	CHECKED BY 检查	APPROVED BY 批准
Vincent	Alice	Isa	Isa

SCALE 比例	FILE NAME 档案名称	DATE 日期
		2013-08-12

DRAWING NO. 图号	REVSION 版本
MXR-KM-G2-30-L	01

NO. 图号	PARTS NAME 零件名称	QTY. 数量	MATERIAL 材料	NOTICE 备注





Remark：

1、The foundation and the support of center sump are at the same level.
2、The height deviation should less than 5mm.
3、Apply the usual national standard when making the foundation.
4、The height of the cooling tower foundation is subject to the on-site piping and the cooling tower has to be set higher than the main pipe.
5、The operating weight is 9110kg， W0=911kg, W1=337kg, W2=428kg,W3=182kg loading evenly distributed on remaining cement foundation.

明新冷却水塔 MESAN COOLING TOWER

PROJECT / MODEL
项目 / 型号

MXR-KM-G2-30
FOUNDATION

TITLE
标题

MESAN COOLING TOWER

DRAWN BY 绘制	DESIGNED BY 设计	CHECKED BY 检查	APPROVED BY 批准
Vincent	Alice	Isa	Isa

SCALE 比例	FILE NAME 档案名称	DATE 日期
N.A		2013-08-12

DRAWING NO. 图号	REVSION 版本
MXR-KM-G2-30-F	01

Equipment Schedule

Authorized Distributor

Mobile : 9559 6305
Direct Tel : 2787-2995
Email : payton@mesanct.com

SECTION 3 SCHEDULE OF TECHNICAL DATA

This section of the specification is to be completed by the Tenderer and returned as part of the tender document along with all catalogues and supporting documents.

3.1

		Specified	Offer
1	**General**		
1.1	Designation No.	CT-URF-1, CT-URF-2, CT-URF-3	Yes
1.2	Location	Refer to Tender Drawings	Refer to Tender Drawings
1.3	Manufacturer		MESAN
1.4	Country of manufacture		PRC
1.5	Model		MXR-KM-62-30
1.6	Quantity	3	3
1.7	Type	Cross Flow	Cross Flow
1.8	Operating weight (kg)	Less than 11600	9110
1.9	Cells	1	1
1.10	CTI Certified	Required	Yes.
1.11	Overall dimensions		
1.11.1	Length (mm)	4235	4030
1.11.2	Width (mm)	6833	6260
1.11.3	Height (mm)	3658	5540
1.11.4	Noise level 1 meter from cooling tower	75dBA	Refer to sound data sheet
2	**Operating Conditions**		
2.1	Flow Rate (L/s)	151.5	151.5

31/7/2013

		Specified	Offer
4.2.5	Condensing Water Inlet (mm)	(2) 250	(4) 125
4.2.6	Condensing Water Outlet (mm)	300	250
5	**Accessories**		
5.1	Drift Eliminator	Required	Yes
5.2	Ladder	Required	Yes
5.3	Hand Railing	Required	Yes
5.4	Platform	Required	Yes.
5.5	Emergency Stop	Outside of Cooling Tower	BY OTHER
6	**Lead time**		

END

YW
31/7/2013

		Specified	Offer
2.2	Heat Rejection (kW)	3165	3165
2.3	Fluid	Water	Water.
2.4	Fluid Inlet Temp (C)	37	37
2.5	Fluid Outlet Temp (C)	32	32
2.6	Web Bulb Temp (C)	28	28
2.7	Condensing Water Discharge Location	Side of Water Basin	Side of water Basin
3	**Fan**		
3.1	Gear Reducer Drive	CTI STD 111 required	Yes.
3.2	Fan Motor Speed	1500	1500
3.3	Air Flow m^3/s		95.3
3.3	Fan Efficiency (%)		
3.4	Fan Motor Power (kW)	30	30
3.5	VFD	Yes	VFD
3.6	Volt/Phase/Hz	380/3/50	380/3/50.
4	**Material**		
4.1	Casing	Fiberglass Reinforced Plastic (FRP)	FRP
4.2	Basin	Fiberglass Reinforced Plastic (FRP) or Galvanized Steel	FRP
4.2.1	Equalizer connection size (mm)	350	TBA
4.2.2	Drain connection size (mm)	40	50
4.2.3	Make-up water connection size (mm)	25	40
4.2.4	Overflow connection size (mm)	100	80

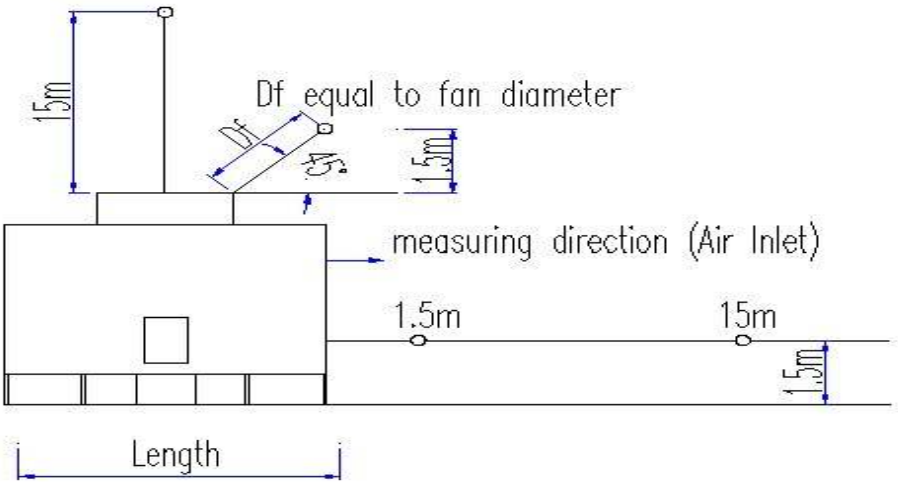
31/7/2013

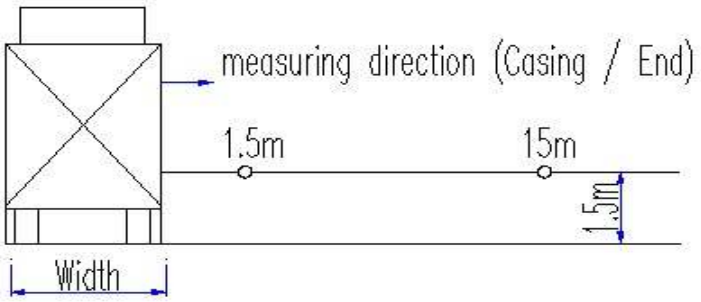
MEMBER

Mesan Fiberglass Engineering (Int'L) Ltd
ADDRESS: Unit 01, 12/F, Midas Plaza, 1 Tai Yau St.
San Po Kong, Kowloon, Hong Kong
TEL: (852) 2787 2995 FAX: (852) 2787 2983

SOUND DATA SHEET FOR COOLING TOWER

Manufacturer: **MESAN**
Product Line: **MXR-KM Series w/ Cooling Tower Institute (CTI) STD-201 Certified**
Model: **MXR-KM-G2-30**
Number of Fans: **ONE**
Fan Motor Power: **30kW**
Number of Motors: **ONE**





Octave Band	Sound Pressure Level (SPL), dB										Sound Power Level (PWL)
	Air Inlet		End		Air Inlet		End		Over Head		
Hz	1.5m	15m	1.5m	15m	1.5m	15m	1.5m	15m	1.5m	15m	dBA
63	52	38	47	40	53	38	47	40	53	42	71
125	64	47	57	45	65	47	57	45	63	53	80
250	70	56	62	53	71	56	62	53	69	59	88
500	70	60	62	54	70	59	62	55	72	59	89
1K	67	57	60	52	68	57	60	52	72	58	87
2K	62	50	54	45	63	50	54	45	67	54	82
4K	57	44	47	40	58	44	47	40	63	50	77
8K	52	39	43	34	53	39	43	34	59	45	72
dBA	75	63	67	58	76	63	67	58	77	65	94

Notes:
A/ The effects of multiple cell units and sound attenuating accessories can be provided subject to client 's requirement.
B/ Data was developed in accordance with Cooling Technology Institute (CTI) ATC-128.

Make up Calculation

Authorized Distributor

Mobile : 9559 6305
Direct Tel : 2787-2995
Email : payton@mesanct.com

Mesan Fiberglass Engineering (Int'l) Ltd Tel: 852-27875717 Fax: 852-27872983

Project:

Item / Designation No.: CT-01

Estimation of make-up water for using cooling tower

M = Make-up water in L/s

C = Circulating water in L/s

D = Drift loss in L/s, (D' is averaged value)

E = Evaporation loss in L/s, (E' is averaged value)

B = Bleed off (blow down) water in L/s, (B' is averaged value)

CC = Cycles of concentration

INPUT LOADING FACTOR:	1	
INPUT DAILY OPERATING HOURS:	14	hr(s)

EVAPORATION LOSS (E)

INPUT

C =	151.5	L/s	For 1 SET CT
Assumed Evaporation =	0.833	%	
E =	1.26200	L/s	
E' = E x Loading Factor =	1.26200	L/s	

DRIFT LOSS (D)

Default drift rate is 0.005% of circulating water flow rate

INPUT

Drift rate =	0.005	%
D = C x 0.005% =	0.007575	L/s
D' = D x Loading Factor =	0.00758	L/s

BLEED OFF (B)

Default cycles of concentration (CC) is between 7 and 10 or provided by the water treatment consultant

INPUT

CC =	7			
B = [E/(CC-1)] - D =	0.20276	L/s		
Peak daily bleed off volume = B x daily operating hours =			10.2190	m^3
Bleed off volume for 2 hrs = B x 2hr x 3.6 =			1.4599	m^3
B' = [E'/(CC-1)] - D' =	0.2028	L/s		

MAKE-UP WATER (M)

M = E + D + B =	1.4723	L/s
M' = E' + D' + B' =	1.4723	L/s

DAILY MAKE-UP WATER DEMAND

Peak = M x daily operating hours =	74.21	m^3
Averaged = M' x daily operating hours =	74.21	m^3

CTI Cert.

Authorized Distributor

Mobile : 9559 6305
Direct Tel : 2787-2995
Email : payton@mesanct.com

COOLING TECHNOLOGY INSTITUTE

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Phone: 281.583.4087 • Fax: 281.537.1721 • email: vmanser@ cti.org • http://www.cti.org

December 1, 2012
(Revision 3)

MESAN Cooling Tower Ltd.
Unit 01, 12/F., Midas Plaza
1 Tai Yau Street, San Po Kong
Kowloon, Hong Kong

Subject: CTI Cooling Tower Certification for the Mesan
MXR-KM Series of Cooling Towers

Gentlemen:

The Mesan Cooling Tower, Ltd., MXR-KM Series line of cross-flow, induced-draft cooling towers, as described in your original application of September 12, 2008 and subsequent revisions through November 14, 2012, has satisfactorily fulfilled the requirements for certification of thermal performance by the Cooling Technology Institute (CTI), as set forth in the CTI Certification Standard STD-201(11). A listing of the two-hundred-seven (207) primary models of the MXR-KM Series line of cooling towers currently encompassed by this certification is included with this letter for reference.

The Mesan MXR-KM Series line of cooling towers has been previously assigned and should continue to use CTI Certification Validation Number 08-26-03. You are hereby authorized and encouraged to display the CTI Certification Logo and Certification Validation Number in all pertinent literature and are required to affix the CTI Certification Label on all towers comprising the line, as provided in the Certification Standard.

This CTI Certification requires the successful completion of a CTI Annual Reverification Test on a different model each year to remain in effect in the subsequent year.

Very truly yours,

Thomas E. Weast

Thomas E. Weast, P.E.
CTI Certification Administrator

COOLING TECHNOLOGY INSTITUTE

P. O. Box 73383, Houston, Texas 77273 • 2611 FM 1960 West, Suite A-101, Houston, Texas 77068
Phone: 281.583.4087 • Fax: 281.537.1721 • email: vmanser@ cti.org • http://www.cti.org

Mesan Cooling Tower, Ltd.
MXR-KM Series Line of CTI Certified Cooling Towers
CTI Certification Validation Number 08-26-03
December 1, 2012 (Revision 3)

MXR-KM-A1-1.1	MXR-KM-B1-2.2	MXR-KM-C1-3.0	MXR-KM-D1-4.0	MXR-KM-F1-5.5	MXR-KM-H1-11.0	MXR-KM-J1-15.0
MXR-KM-A1-1.5	MXR-KM-B1-3.0	MXR-KM-C1-4.0	MXR-KM-D1-5.5	MXR-KM-F1-7.5	MXR-KM-H1-15.0	MXR-KM-J1-18.5
MXR-KM-A1-2.2	MXR-KM-B1-4.0	MXR-KM-C1-5.5	MXR-KM-D1-7.5	MXR-KM-F1-11.0	MXR-KM-H1-18.5	MXR-KM-J1-22.0
MXR-KM-A1-3.0	MXR-KM-B1-5.5	MXR-KM-C1-7.5	MXR-KM-D1-11.0	MXR-KM-F1-15.0	MXR-KM-H1-22.0	MXR-KM-J1-30.0
MXR-KM-A1-4.0					MXR-KM-H1-30.0	MXR-KM-J1-37.0
	MXR-KM-B2-2.2	MXR-KM-C2-3.0	MXR-KM-D2-4.0	MXR-KM-F2-5.5		MXR-KM-J1-45.0
MXR-KM-A2-1.1	MXR-KM-B2-3.0	MXR-KM-C2-4.0	MXR-KM-D2-5.5	MXR-KM-F2-7.5	MXR-KM-H2-11.0	
MXR-KM-A2-1.5	MXR-KM-B2-4.0	MXR-KM-C2-5.5	MXR-KM-D2-7.5	MXR-KM-F2-11.0	MXR-KM-H2-15.0	MXR-KM-J2-18.5
MXR-KM-A2-2.2	MXR-KM-B2-5.5	MXR-KM-C2-7.5	MXR-KM-D2-11.0	MXR-KM-F2-15.0	MXR-KM-H2-18.5	MXR-KM-J2-22.0
MXR-KM-A2-3.0	MXR-KM-B2-7.5			MXR-KM-F2-18.5	MXR-KM-H2-22.0	MXR-KM-J2-30.0
MXR-KM-A2-4.0	MXR-KM-B2-11.0	MXR-KM-C3-4.0	MXR-KM-D3-4.0	MXR-KM-F2-22.0	MXR-KM-H2-30.0	MXR-KM-J2-37.0
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MXR-KM-A3-2.2	MXR-KM-B3-4.0	MXR-KM-C3-11.0	MXR-KM-D3-11.0	MXR-KM-F3-7.5	MXR-KM-H3-15.0	MXR-KM-J3-18.5
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MXR-KM-A3-4.0	MXR-KM-B3-7.5	MXR-KM-C4-4.0		MXR-KM-F3-15.0	MXR-KM-H3-22.0	MXR-KM-J3-30.0
MXR-KM-A3-5.5		MXR-KM-C4-5.5	MXR-KM-D4-4.0	MXR-KM-F3-18.5	MXR-KM-H3-30.0	MXR-KM-J3-37.0
	MXR-KM-B4-3.0	MXR-KM-C4-7.5	MXR-KM-D4-5.5	MXR-KM-F3-22.0	MXR-KM-H1-37.0	MXR-KM-J3-45.0
MXR-KM-A4-2.2	MXR-KM-B4-4.0	MXR-KM-C4-11.0	MXR-KM-D4-7.5			
MXR-KM-A4-3.0	MXR-KM-B4-5.5		MXR-KM-D4-11.0			
MXR-KM-A4-4.0	MXR-KM-B4-7.5	MXR-KM-C5-4.0	MXR-KM-D4-15.0			
MXR-KM-A4-5.5		MXR-KM-C5-5.5				
	MXR-KM-B5-3.0	MXR-KM-C5-7.5				
MXR-KM-A5-2.2	MXR-KM-B5-4.0	MXR-KM-C5-11.0		MXR-KM-G1-11.0	MXR-KM-I1-15.0	MXR-KM-K1-18.5
MXR-KM-A5-3.0	MXR-KM-B5-5.5	MXR-KM-C5-15.0		MXR-KM-G1-15.0	MXR-KM-I1-18.5	MXR-KM-K1-22.0
MXR-KM-A5-4.0	MXR-KM-B5-7.5			MXR-KM-G1-18.5	MXR-KM-I1-22.0	MXR-KM-K1-30.0
MXR-KM-A5-5.5		MXR-KM-C6-4.0	MXR-KM-E1-5.5	MXR-KM-G1-22.0	MXR-KM-I1-30.0	MXR-KM-K1-37.0
MXR-KM-A5-7.5	MXR-KM-B6-3.0	MXR-KM-C6-5.5	MXR-KM-E1-7.5	MXR-KM-G1-30.0	MXR-KM-I1-37.0	MXR-KM-K1-45.0
	MXR-KM-B6-4.0	MXR-KM-C6-7.5	MXR-KM-E1-11.0	MXR-KM-G1-37.0		
MXR-KM-A6-2.2	MXR-KM-B6-5.5	MXR-KM-C6-11.0	MXR-KM-E1-15.0		MXR-KM-I2-15.0	MXR-KM-K2-22.0
MXR-KM-A6-3.0	MXR-KM-B6-7.5	MXR-KM-C6-15.0		MXR-KM-G2-11.0	MXR-KM-I2-18.5	MXR-KM-K2-30.0
MXR-KM-A6-4.0			MXR-KM-E2-5.5	MXR-KM-G2-15.0	MXR-KM-I2-22.0	MXR-KM-K2-37.0
MXR-KM-A6-5.5			MXR-KM-E2-7.5	MXR-KM-G2-18.5	MXR-KM-I2-30.0	MXR-KM-K2-45.0
MXR-KM-A6-7.5			MXR-KM-E2-11.0	MXR-KM-G2-22.0	MXR-KM-I2-37.0	MXR-KM-K2-55.0
			MXR-KM-E2-15.0	MXR-KM-G2-30.0	MXR-KM-I2-45.0	
						MXR-KM-K3-22.0
			MXR-KM-E3-5.5	MXR-KM-G3-11.0	MXR-KM-I3-15.0	MXR-KM-K3-30.0
			MXR-KM-E3-7.5	MXR-KM-G3-15.0	MXR-KM-I3-18.5	MXR-KM-K3-37.0
			MXR-KM-E3-11.0	MXR-KM-G3-18.5	MXR-KM-I3-22.0	MXR-KM-K3-45.0
			MXR-KM-E3-15.0	MXR-KM-G3-22.0	MXR-KM-I3-30.0	
				MXR-KM-G3-30.0	MXR-KM-I3-37.0	
					MXR-KM-I3-45.0	
					MXR-KM-I3-55.0	

See Footnotes Below

COOLING TECHNOLOGY INSTITUTE
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Mesan Cooling Tower, Ltd.
MXR-KM Series Line of CTI Certified Cooling Towers
CTI Certification Validation Number 08-26-03
December 1, 2012 (Revision 3)

Footnotes:

1) **Add suffix -S4 for SS304 or -S6 for SS316 stainless steel structural members & hardware**
2) **Add suffix -F4 for SS304 or -F6 for SS316 stainless steel casing, structural members & hardware**
3) **Add suffix -G for HDGS casing, structural members & hardware**
4) **Optional additional drift eliminator (incurs 2% capacity reduction compared to standard models)**
5) **Optional additional air inlet louver (incurs 2% capacity reduction compared to standard models)**
6) **Certification includes units with optional gear drive in place of standard belt drive.**
7) **Multiple cell models of the single cell models are also available but not listed**

Sample Model Number: MXR-KM-A1-1.1-S6-2 where:

MXR-KM = product line name
A1 = box size designator
1.1 = motor size, kW
S6 = SS316 structural members & hardware
2 = number of cells

Thomas E. Weast

Thomas E. Weast, P.E.
CTI Certification Administrator

Job Reference

Authorized Distributor

Mobile : 9559 6305
Direct Tel : 2787-2995
Email : payton@mesanct.com

MESAN FIBERGLASS ENGINEERING (INT'L) LTD.
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Cooling Tower Job Reference

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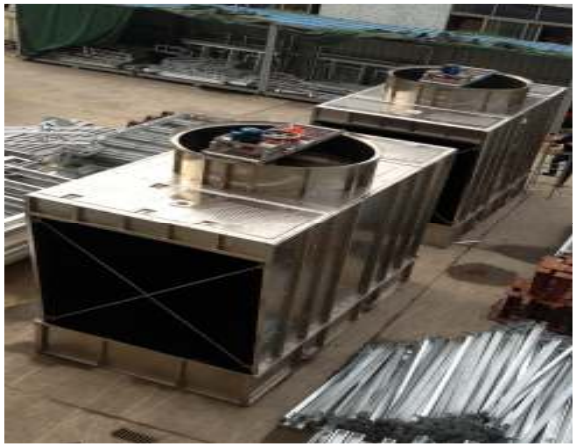
Job References in Hong Kong (1/8)



粉嶺 44 區政府綜合大樓
Model: MXR-KM-A1-1.1 x2 sets
Completion: 03-2013

Hong Kong Baptist University
Model: MXR-KM-C4-15-2 x3 sets
Completion: 2013

The Chinese University of Hong Kong - 忠智堂
Model: MXR-KM-A6-7.5L x2 sets
Completion: 2012

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The Hong Kong Polytechnic University - Innovation Tower
Model: MXR-KM-D2-11L-2 x3 sets / MXR-KM-A5-7.5L x1 set
Completion: 10-2012


荃灣厚豐工業中心
Model: MXR-KM-B2-11 x2 sets
Completion: 01-2011


Sai Kung Government Offices - 西貢政府合署
Model: MXR-KM-1A L-2.2 x3 sets
Completion: 10-2010

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Siu Sai Wan Complex - 小西灣市政大廈
Model: MXR-2304-22 x3 sets
Completion: 02-2010

CITY UNIVERSITY OF HONG KONG - 城市大學
Model: MXR-KM-4B L-11 x4 sets
Completion: 11-2009

香港東涌室內運動場暨圖書館
Model: MXR-2304-11 x3 sets
Completion: 01-2009

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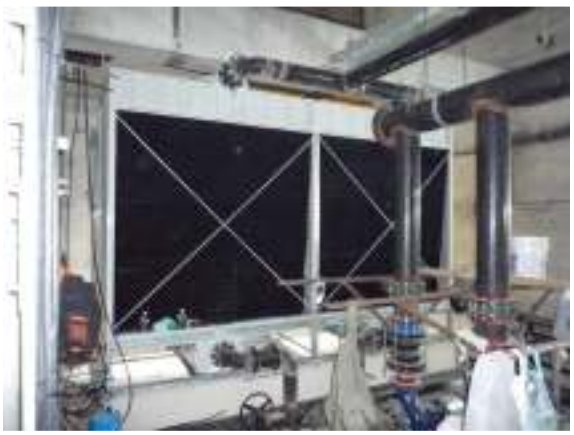
香港北角油街海逸君綽酒店
Model: MXR-2304-18.5 x6 sets
Completion: 05-2008

LAI CHI KOK GOV'T OFFICE - 香港荔枝角政府合署
Model: MXR-600L x1 set
Completion: 05-2008



Panda Hotel
Model: MSC-160-KM x4 sets
Completion: 04-2008

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Yan Oi Tong Jockey Club 香港屯門仁愛堂
Model: MSX-250 x2 sets
Completion: 04-2008


Kwa Harbour Plaza 8 Degrees 土瓜灣 8 度海逸酒店
Model: MSN-390 x2 sets, MSN-200 x1 set
Completion: 10-2008


John Fulton Centre, The Chinese University 中文大學富爾敦樓
Model: MCR-160L x1 set
Completion: 06-2008

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No.8 Wing Hing Street 銅鑼灣皇悅酒店
Model: MSX-250 x2 sets / MSX-200 x1 set
Completion: 05-2008


Kwan Tung Provincial Bank Building Wanchai
Model: MSC-60-KM x4 sets
Completion: 06-2008

Kwong Yuen Estate - Commercial Complex - 滙源商場
Model: MXR-225L x2 sets
Completion: 06-2007

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Sino Plaza, Causeway Bay, Hong Kong 香港銅鑼灣信和廣場
Model: MX-200L x1 set & MX-175L x6 sets
Completion: 02-2006

Pierhead Garden, Tuen Mun - 屯門海翠花園
Model: MSC-4 MSC-150 x4 sets
Completion: 03-2006

九龍塘 PCCW
Model: MX-80L x3 sets
Completion: 04-2006

DAIKIN
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Futian Building, Tuen Mun 屯門福田大廈
Model: MKT-125 x5 sets
Completion: 05-2006

Industrial Centre, Kwai Chung, New Branch 葵涌新科工業中心
Model: MS-500 x2 sets
Completion: 05-2006

CC WU Building
Model: KT-300 x2 sets
Completion: 12-2002

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"MESAN" Cooling Tower ~ HK & Macau Project Reference

Hong Kong

MS	PROJECT NAME	MODEL	QTY	YEAR
1	Hong Kong University Phase III - Sai Wan	MS-350L	2	99'
2	The Hong Kong Soya Bean – Tuen Mun	MS-300	4	99'
3	Chit Wo Centre - Shatin	MS-150	1	99'
4	Caritas House - Central	MS-125	1	2000
5	The Chinese University, Pi Chiu Building - Shatin	MS-175LS	2	2000
6	Wai Fung Industrial Centre Phase II - Kwai Chung	MS-150	1	2001
7	Tai Ping Industrial Centre Phase I - Tai Po	MS-250	1	2002
8	Park Island Shipping Mall - Ma Wan	MS-125	2	2003
9	55 King Yip Street - Kwun Tong	MS-100 MS-175	1 3	2003
10	611 Nathan Road - Mongkok	MS-100	2	2003
11	Century Industrial Centre - Kwun Tong	MS-100	3	2003
12	London Chinese Restaurant - Yau Ma Tei	MS-250	1	2004
13	Hang On Estate - Ma On Shan	MS-125	1	2004
14	Yu Lam Ice Storage - Kwai Chung	MS-175	1	2004
15	Tsing Chui Path - Tuen Mun	MS-175	2	2005
16	Kowloon City Plaza Neway Karaoke	MS-200L	1	
17	大埔經濟日報大廈	MS-350SL	1	2006
18	葵涌葵豐街新科工業中心	MS-500	2	2006
19	Laguna Arcade - Kwun Tong	MS-250 MS-125	1 1	2007
20	Nanyang Brothers Tobacco Ltd, 8 Ho Tin Street, Tuen Mun	MS-500	2	2009
21	柴灣環翠商場	MS-100L	2	2009
22	荃灣 油柑頭	MS-175L	2	2009
23	Nanyang Brothers Tobacco Ltd, 8 Ho Tin Street, Tuen Mun	MS-150L	1	2010
24	Nanyang Brothers Tobacco Ltd, 8 Ho Tin Street, Tuen Mun	MS-500L	2	2011
25	元朗橋頭圍工業村-美高公司廠房	MS-250L	1	2011

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MKT	PROJECT NAME	MODEL	QTY	YEAR
1	屯門洪祥路 3A 福田大廈	MKT-125	5	2006
KT	**PROJECT NAME**	**MODEL**	**QTY**	**YEAR**
1	Town Gas Co, Tai Po	KT-150	1	2000
2	Hong Kong & Macau Building, Central	KT-100L	2	2001
3	Tuen Mun Hospital, Tuen Mun	KT-900	2	2003
4	C C Wu Building, Wan Chai	KT-300	2	2003
KTM	**PROJECT NAME**	**MODEL**	**QTY**	**YEAR**
1	Yuen Long Industrial Estate	KTM-125	1	2005
MSC	**PROJECT NAME**	**MODEL**	**QTY**	**YEAR**
1	Pierhead Garden Shopping Mall, Tuen Mun	MSC-125 MSC-150	2 1	2004
2	Shopping Mall at Chungking Mansions, TST, Kln.	MSC-50	9	2004
3	Pierhead Garden Shopping Mall, Tuen Mun	MSC-150S	4	2005
4	Hoi Fai Rd KIL 11163 Shopping Mall	MSC-150	2	2005
5	Kar Shing Building, Yuen Long	MSC-175	2	2005
6	Panda Hotel & Place, Tsuen Wan	MSC-80-KM	8	2008
7	Kwong Tung Provincial Bank Building	MSC-60	4	2008
8	The Trend Plaza, Tuen Mun	MSC-50	4	2010
9	Neway Koraoke, Landmark North	MSC-100(50x2)	1	2010
10	50-59 Connaught Road, Central	MSC-100-KM	6	2010
11	CEO Koraoke, Manhattan Plaza, Yuen Long	MSC-100(50x2)	1	2010
12	Tao Haung Restaurant , Fuller Garden, Tai Po Old Market	MSC-50	2	2010
13	Panda Hotel, Tsuen Wan	MSC-200(100*2)	2	2011
MSX	**PROJECT NAME**	**MODEL**	**QTY**	**YEAR**
1	Chuen Cheung Kui Restaurant, Causeway Bay,HK	MSX-80L	2	2004
2	Eu Yan Sang Fty at Yuen Long Ind. Estate	MSX-100L MSX-80L	2 2	2005 2005
3	Bo Yip Building, 10 Peking Road, Tsim Sha Tsui	MSX-80L	1	2005
4	No. 28 Marble Road, North Point	MSX-200L	1	2007
5	Yan Oi Tong Jockey Club, Community & Sport Centre, Tuen Mun	MSX-250L	2	2008
6	Empire Hotel Hong Kong, Causeway Bay	MSX-200L MSX-125L	1 2	2008

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MSN	PROJECT NAME	MODEL	QTY	YEAR
1	Neway Koraoke, Mega Box	MSN-150L	2	2008
2	Harbour Plaza 8 Degrees, Tokwawan	MSN-390LSA MSN-200LSA	2 1	2008 2008
MC	**PROJECT NAME**	**MODEL**	**QTY**	**YEAR**
1	中文大學	MC-80SL	1	2006
MX	**PROJECT NAME**	**MODEL**	**QTY**	**YEAR**
1	Sino Plaza, Causeway Bay	MX-200L (CTI) MX-175L (CTI)	1 6	2005
2	PCCW Foothill Exchange	MX-80L (CTI)	3	2005
MCR	**PROJECT NAME**	**MODEL**	**QTY**	**YEAR**
1	John Fulton Centre, CUHK	MCR-80L (CTI)	2	2008
MXR	**PROJECT NAME**	**MODEL**	**QTY**	**YEAR**
1	Lek Yuen Shopping Centre, Shatin	MXR-225L (CTI)	2	2007
2	Administration Building, CUHK	MXR-350LS (CTI)	2	2007
3	Lai Chi Kok Government Office	MXR-200L (CTI)	3	2008
4	Harbour Grand Hotel, 15-17 Oil Street	MXR-2304-18.5 (CTI)	6	2008
5	Tung Chung Indoor Recreation Centre cum Library	MXR-2304-11 (CTI)	3	2009
6	Sai Kung Government Office	MXR-KM-1AL-2.2 (CTI)	3	2009
7	Bo Yip Building, 10 Peking Road, Tsim Sha Tsui	MXR-KM-1ASL-4 (CTI)	1	2009
8	Amenities Bldg & Sport Complex, City University	MXR-KM-4BL-15 (CTI)	4	2009
9	Siu Sai Wan Complex, Chai Wan	MXR-2304-22-S6 (CTI)	3	2009
10	Tung Chung Swimming Pool	MXR-KM-2DL-4-S6 (CTI)	1	2010
11	元朗橋頭圍工業村-美高公司廠房	MXR-KM-01B-5.5 (CTI)	1	2010
12	荃灣厚豐工業中心	MXR-KM-B2-11 (CTI)	2	2011
13	牛頭角彩石里聖音中學	MXR-KM-B8-11 (CTI)	2	2011
14	深圳灣 Control Point	MXR-KM-G1-22 (CTI)	1	2011
15	中文大學 Centralized General Research Lab Complex	MXR-KM-07B-15L (CTI)	3	2011
16	西貢翠棠路 1 號	MXR-KM-A4-5.5 (CTI)	1	2011
17	九龍塘浸會大學	MXR-KM-4C-L-15-2-SST (CTI)	2	2011
18	中文大學 何善衡樓	MXR-KM-C3-11 (CTI)	2	2012
19	屯門利寶商場	MXR-KM-A6-7.5 (CTI)	2	2012
20	沙田大圍盛運道 13-15 號	MXR-KM-C6-15 (CTI)	2	2012

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21	中文大學-忠智堂	MXR-KM-A6-7.5L (CTI)	2	2012
22	Hong Kong Polytechnic University	MXR-KM-D2-11L-2 (CTI) MXR-KM-A5-7.5L (CTI)	3 1	2012
23	Area 44 Fabling SS Y304	MXR-KM-A1-1.1-F6-2-SST (CTI)	1	2013

Macau

MS	PROJECT NAME	MODEL	QTY	YEAR
1	財神酒店	MS-400	4	94'
2	自來水廠	MS-90	2	90'
3	新建華商業中心	MS-300	2	94'
4	財神酒店	MS-400	4	94'
5	南通商業大厦	MS-350 MS-125	3 1	96'
6	信達廣場	MS-350 MS-400	1 1	2004
7	澳門大學	MS-300	1	2005
8	BCM 銀行	MS-125	2	2005
9	澳門街坊會聯合總會	MS-125L	2	2006
10	澳門新口岸回力球場	MS-300L	2	2007
11	澳門皇都酒店	MS-200L	2	2007
12	澳門南通商業大厦	MS-350	3	2011
MSC	**PROJECT NAME**	**MODEL**	**QTY**	**YEAR**
1	海名居	MSC-100	1	2005
2	南光百貨	MSC-80D MSC-30	3 1	2005 2005
3	勞工事務局總部	MSC-175-KM MSC-40-KM	2 1	2007 2007
4	理工大學	MSC-260(65x4)-A	2	2009
5	廣州街怡景閣	MSC-100 (50x2)	1	2009
6	澳門港澳碼頭	MSC-50(25x2)	2	2009
7	澳門廣州街怡景閣	MSC-50	3	2011

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MSX	PROJECT NAME	MODEL	QTY	YEAR
1	科技大學中醫院	MSX-200L MSX-100L	2 2	2005 2005
2	阿馬拉回旋處	MSX-350L	1	2006
3	澳門氹仔大連街 BT-34 地段	MSX-175L	1	2006
4	澳門蘭桂坊酒店	MSX-600L	3	2008
5	澳門培正中學	MSX-150L	1	2008
6	澳門板樟堂街信達城	MSX-125L	1	2009
MCR	**PROJECT NAME**	**MODEL**	**QTY**	**YEAR**
1	友邦廣場	MCR-400LS (CTI) MCR-500LS (CTI)	2 1	2005
MXR	**PROJECT NAME**	**MODEL**	**QTY**	**YEAR**
1	澳門科學館	MXR-2304-22 (CTI)	3	2008
2	澳門黑沙環政府綜合服務大樓	MXR-KM-4BSL-11 (CTI)	2	2009
3	澳門 CEM Building	MXR-KM-3B L-11 (CTI)	2	2009
4	澳門東望洋酒店	MXR-KM-2B L-7.5 (CTI)	1	2010
5	澳門 CEM Building	MXR-KM-3B L-11S6 (CTI)	3	2010
6	澳門營地街市	MXR-KM-A2-5.5L (CTI)	2	2011
7	澳門路環威斯汀酒店	MXR-KME1-15 (CTI)	3	2012
8	澳門金峰南岸	MXR-KM-B6-5.5 (CTI)	2	2013
MC-X	**PROJECT NAME**	**MODEL**	**QTY**	**YEAR**
1	資訊設備及後備復原中心	MC-X-50	2	2010

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