

Annex A consist of the following:

- AHU (7 pages)
- Chiller loading rating of 650RT (1 page)
- Chiller loading rating of 380RT (2 pages)
- Chiller loading rating of 200RT (1 page)
- ACMV CHW Plant Layout (1 page)

Annex A of Corrigendum 2



5 PARTICULARS OF AIR HANDLING UNIT

Air Handling Units (AHU)		AHU 1-1	AHU 1-2	AHU 1-3	AHU 1-4
		VERTICAL	VERTICAL	VERTICAL	VERTICAL
		Offered	Offered	Offered	Offered
a	Manufacturer	McQuay	McQuay	McQuay	McQuay
b	Model No	DSI-LSL 111	DSI-LSL 137	DSI-LSL 122	DSI-LSL 128
c	Operating Weight (kg)	1090	2460	1920	2065
d	Length (m)	1722	2438	2012	2210
e	Width (m)	1702	3150	2566	3150
f	Height (m)	2032	3352	2692	2896
g	Total Cooling Capacity (Kw)	71.31	246.3	141	193.8
h	Sensible Heat (Kw)	49.45	165.9	95.1	130
i	Latent Heat (Kw)	21.86	80.4	45.9	63.6
j	Air Flow Rate (M ³ /hr)	9600	30454	17784	24050
l	Coil Diameter (mm)	12.7	12.7	12.7	12.7
m	Total Surface Area (m ²)	1.084	3.432	1.897	2.89
n	Rows of Coils	6	8	8	8
o	Chilled Water ENT (°C)	7	7	7	7
p	Chilled Water LV (°C)	12.5	12.5	12.5	12.6
q	Air Before Coil (°C)	27 / 19.5	27 / 19.5	27 / 19.5	27 / 19.5
r	Air After Coil (°C)	11.86/11.59	10.8/10.7	11.1/11+9	11/10.8
s	Fan Type & Diameter (m)	BC / 400	BC / 630	BC / 500	BC / 560
t	Fan Motor (Kw)	5.5	18.5	11	15
u	Voltage/Phase	415/3	415/3	415/3	415/3
v	Name Plate Amps	10.4	32.5	19.3	25.4
w	Locked Rotor Amps	85	245	140	185
x	External static pressure (Pa)	720	650	750	732
y	Full Load Kw/RT	0.271	0.264	0.274	0.272
z	Noise Power level 1 m discharge from fan	0.271	41	0.274	0.272

Annex A of Corrigendum 2

5 PARTICULARS OF AIR HANDLING UNIT

Air Handling Units (AHU)		AHU 2-1	AHU 2-2	AHU 2-3	AHU 2-4
		VERTICAL	VERTICAL	VERTICAL	VERTICAL
		Offered	Offered	Offered	Offered
a	Manufacturer	McQuay	McQuay	McQuay	McQuay
b	Model No	DSI-LSL 134	DSI-LSL 122	DSI-LSL 128	DSI-LSL 114
c	Operating Weight (kg)	2116	1735	1752	1208
d	Length (m)	2210	2012	2210	2012
e	Width (m)	3150	2566	3150	2083
f	Height (m)	2896	2692	2896	2500
g	Total Cooling Capacity (Kw)	208.76	139	145	88.23
h	Sensible Heat (Kw)	140	96	103	61.45
i	Latent Heat (Kw)	67	43.5	42	26.78
j	Air Flow Rate (M ³ /hr)	26930	19374	24090	12040
l	Coil Diameter (mm)	12.7	12.7	12.7	12.7
m	Total Surface Area (m ²)	3.135	2.323	2.894	1.355
n	Rows of Coils	8	5	4	6
o	Chilled Water ENT (°C)	7	7	7	7
p	Chilled Water LV (°C)	12.6	12.7	12.68	12.6
q	Air Before Coil (°C)	27 / 19.5	27 / 19.5	27 / 19.5	27 / 19.5
r	Air After Coil (°C)	11.6/11.3	12.1/11.8	14.4/13.4	11.9/11.7
s	Fan Type & Diameter (m)	BC / 560	BC / 500	BC / 560	BC / 450
t	Fan Motor (Kw)	15	11	15	7.5
u	Voltage/Phase	415/3	415/3	415/3	415/3
v	Name Plate Amps	25.4	19.3	25.4	13.4
w	Locked Rotor Amps	185	140	185	110
x	External static pressure (Pa)	620	600	726	737
y	Full Load Kw/RT	0.253	0.278	0.364	0.299
z	Noise Power level 1 m discharge from fan	0.253	0.278	0.364	0.299

Annex A of Corrigendum 2

5 PARTICULARS OF AIR HANDLING UNIT

Air Handling Units (AHU)		AHU 2-5	AHU 2-6	AHU 3-1	AHU 3-2
		VERTICAL	VERTICAL	VERTICAL	VERTICAL
		Offered	Offered	Offered	Offered
a	Manufacturer	McQuay	McQuay	McQuay	McQuay
b	Model No	DSI-LSL 128	DSI-LSL 128	DSI-LSL 117	DSI-LSL 128
c	Operating Weight (kg)	1752	1900	1495	1827
d	Length (m)	2210	2210	2012	2210
e	Width (m)	3150	3150	2464	3150
f	Height (m)	2896	2896	2599	2896
g	Total Cooling Capacity (Kw)	158	183	105	181.56
h	Sensible Heat (Kw)	108	126	72	124
i	Latent Heat (Kw)	50	57	33	57
j	Air Flow Rate (M ³ /hr)	23100	24600	14325	24884
l	Coil Diameter (mm)	12.7	12.7	13.8	12.7
m	Total Surface Area (m ²)	2.89	2.89	1.665	2.89
n	Rows of Coils	4	6	5	5
o	Chilled Water ENT (°C)	7	7	7	7
p	Chilled Water LV (°C)	12.6	12.6	12.7	12.5
q	Air Before Coil (°C)	27 / 19.5	27 / 19.5	27 / 19.5	27 / 19.5
r	Air After Coil (°C)	13.2/12.8	11.7/11.4	12.2/11.9	12.2/11.8
s	Fan Type & Diameter (m)	BC / 560	BC / 560	BC / 450	BC / 560
t	Fan Motor (Kw)	15	15	11	15
u	Voltage/Phase	415/3	415/3	415/3	415/3
v	Name Plate Amps	25.4	25.4	19.3	25.4
w	Locked Rotor Amps	185	185	140	185
x	External static pressure (Pa)	729	742	794	810
y	Full Load Kw/RT	0.334	0.288	0.368	0.29
z	Noise Power level 1 m discharge from fan	0.334	0.288	0.368	0.29

Annex A of Corrigendum 2

5 PARTICULARS OF AIR HANDLING UNIT

Air Handling Units (AHU)		AHU 3-3	AHU 3-4	AHU 4-1	AHU 4-2
		VERTICAL	VERTICAL	VERTICAL	VERTICAL
		Offered	Offered	Offered	Offered
a	Manufacturer	McQuay	McQuay	McQuay	McQuay
b	Model No	DSI-LSL 137	DSI-LSL 137	DSI-LSL 128	DSI-LSL 117
c	Operating Weight (kg)	1827	1827	1900	1495
d	Length (m)	2438	2438	2210	2012
e	Width (m)	3150	3150	3150	2464
f	Height (m)	3352	3352	2896	2599
g	Total Cooling Capacity (Kw)	172	172	161	92.51
h	Sensible Heat (Kw)	122	122	111	63
i	Latent Heat (Kw)	50	50	50	29
j	Air Flow Rate (M ³ /hr)	28752	28752	21860	12545
l	Coil Diameter (mm)	12.7	12.7	12.7	12.7
m	Total Surface Area (m ²)	3.31	3.3	2.439	1.587
n	Rows of Coils	4	4	6	5
o	Chilled Water ENT (°C)	7	7	7	7
p	Chilled Water LV (°C)	12.7	12.7	12.7	12.6
q	Air Before Coil (°C)	27 / 19.5	27 / 19.5	27 / 19.5	27 / 19.5
r	Air After Coil (°C)	14.0/13.2	14.0/13.2	11.8/11.6	12.1/11.8
s	Fan Type & Diameter (m)	BC / 630	BC / 630	BC / 560	BC / 450
t	Fan Motor (Kw)	18.5	18.5	15	7.5
u	Voltage/Phase	415/3	415/3	415/3	415/3
v	Name Plate Amps	32.5	32.5	25.4	13.4
w	Locked Rotor Amps	245	245	185	110
x	External static pressure (Pa)	848	837	802	798
y	Full Load Kw/RT	0.378	0.378	0.327	0.285
z	Noise Power level 1 m discharge from fan	0.378	0.378	0.327	0.285

Annex A of Corrigendum 2

5 PARTICULARS OF AIR HANDLING UNIT

Air Handling Units (AHU)		AHU 5-1	AHU 5-2	AHU 6-1 to 12-1	AHU 6-2 to 12-2
		VERTICAL	VERTICAL	VERTICAL	VERTICAL
		Offered	Offered	Offered	Offered
a	Manufacturer	McQuay	McQuay	McQuay	McQuay
b	Model No	DSI-LSL 122	DSI-LSL 128	DSI-LSL 122	DSI-LSL 122
c	Operating Weight (kg)	1735	1900	1735	1735
d	Length (m)	2012	2210	2012	2012
e	Width (m)	2566	3150	2566	2566
f	Height (m)	2692	2896	2692	2692
g	Total Cooling Capacity (Kw)	124.6	154	121.94	121.94
h	Sensible Heat (Kw)	84.9	108	82.9	82
i	Latent Heat (Kw)	39.7	46	39.04	39.94
j	Air Flow Rate (M ³ /hr)	17050	22365	16595	16595
l	Coil Diameter (mm)	12.7	12.7	12.7	12.7
m	Total Surface Area (m ²)	1.897	2.439	1.897	1.897
n	Rows of Coils	5	6	5	5
o	Chilled Water ENT (°C)	7	7	7	7
p	Chilled Water LV (°C)	12.6	12.5	12.6	12.6
q	Air Before Coil (°C)	27 / 19.5	27 / 19.5	27 / 19.5	27 / 19.5
r	Air After Coil (°C)	12.2/11.8	12.7/12.2	12.1/11.8	12.1/11.8
s	Fan Type & Diameter (m)	BC / 500	BC / 560	BC / 500	BC / 500
t	Fan Motor (Kw)	11	15	11	11
u	Voltage/Phase	415/3	415/3	415/3	415/3
v	Name Plate Amps	19.3	25.4	19.3	19.3
w	Locked Rotor Amps	140	185	140	140
x	External static pressure (Pa)	786	796	788	796
y	Full Load Kw/RT	0.31	0.342	0.317	0.317
z	Noise Power level 1 m discharge from fan	0.31	0.342	0.317	0.317

Annex A of Corrigendum 2

5 PARTICULARS OF AIR HANDLING UNIT

Air Handling Units (AHU)		AHU 14-1 to 19-1	AHU 14-2 to 19-2	AHU 20-1 to 29-1	AHU 20-2 to 29-2
		VERTICAL	VERTICAL	VERTICAL	VERTICAL
		Offered	Offered	Offered	Offered
a	Manufacturer	McQuay	McQuay	McQuay	McQuay
b	Model No	DSI-LSL 122	DSI-LSL 122	DSI-LSL 122	DSI-LSL 122
c	Operating Weight (kg)	1735	1735	1735	1735
d	Length (m)	2012	2012	2012	2012
e	Width (m)	2566	2566	2566	2566
f	Height (m)	2692	2692	2692	2692
g	Total Cooling Capacity (Kw)	121	121	117	117
h	Sensible Heat (Kw)	82.9	82.9	80	80.1
i	Latent Heat (Kw)	38.1	38.1	37	36.9
j	Air Flow Rate (M ³ /hr)	16595	16595	15970	15970
l	Coil Diameter (mm)	12.7	12.7	12.7	12.7
m	Total Surface Area (m ²)	1.897	1.897	2.081	1.897
n	Rows of Coils	5	5	5	5
o	Chilled Water ENT (°C)	8	8	8	8
p	Chilled Water LV (°C)	13.5	13.5	13.6	13.6
q	Air Before Coil (°C)	27 / 19.5	27 / 19.5	27 / 19.5	27 / 19.5
r	Air After Coil (°C)	12.2/11.8	12.2/11.8	12.1/12.0	12.1/11.7
s	Fan Type & Diameter (m)	BC / 500	BC / 500	BC / 500	BC / 500
t	Fan Motor (Kw)	11	11	11	11
u	Voltage/Phase	415/3	415/3	415/3	415/3
v	Name Plate Amps	19.3	19.3	19.3	19.3
w	Locked Rotor Amps	140	140	140	140
x	External static pressure (Pa)	788	796	788	796
y	Full Load Kw/RT	0.32	0.32	0.33	0.33
z	Noise Power level 1 m discharge from fan	0.32	0.32	0.33	0.33

5 PARTICULARS OF AIR HANDLING UNIT

Air Handling Units (AHU)		AHU 30-1	AHU 30-2
		VERTICAL	VERTICAL
		Offered	Offered
a	Manufacturer	McQuay	McQuay
b	Model No	DSI-LSL 122	DSI-LSL 117
c	Operating Weight (kg)	1735	1630
d	Length (m)	2012	2012
e	Width (m)	2566	2464
f	Height (m)	2692	2599
g	Total Cooling Capacity (Kw)	125.9	109.8
h	Sensible Heat (Kw)	86.5	74
i	Latent Heat (Kw)	39.4	35.8
j	Air Flow Rate (M ³ /hr)	17115	13925
l	Coil Diameter (mm)	12.7	12.7
m	Total Surface Area (m ²)	1.897	1.548
n	Rows of Coils	5	8
o	Chilled Water ENT (°C)	8	8
p	Chilled Water LV (°C)	13.5	13.4
q	Air Before Coil (°C)	27 / 19.5	27 / 19.5
r	Air After Coil (°C)	12.4/11.9	11.2/11.1
s	Fan Type & Diameter (m)	BC / 500	BC / 450
t	Fan Motor (Kw)	11	11
u	Voltage/Phase	415/3	415/3
v	Name Plate Amps	19.3	19.3
w	Locked Rotor Amps	140	140
x	External static pressure (Pa)	788	796
y	Full Load Kw/RT	0.307	0.352
z	Noise Power level 1 m discharge from fan	0.307	0.352



Issue Date: 01/13
 Project: Project
 Engineer: Sales Eng
 Customer: customer
 Software Version: YW 13.01a

Rating Program: LTC
 Rev: v1_128.idd
 Date: 05/09/13
 Page: 2 of 2

PARTLOAD RATING WITH CONSTANT ENTERING CONDENSER WATER TEMP

MODEL	YKKCKSH95ENG	(MOTOR SELECTED BY USER)	
REFRIGERANT (LB 134A)	1814	GEAR CODE	RJ(SPEC)
RATED NET CAPACITY (TR)	650	SPECIFIED NET CAPACITY (TR)	650
INPUT POWER (KW)	339	MAX MOTOR LOAD (KW)	361
VOLTAGE / HZ	415 / 50		
ORIFICE (VARY)	VALVE:3	OPTISOUND CONTROL	YES
ISOLATION VALVE	YES		
FLA	545	LRA	3478
MIN CIR. AMPS.	682	MAX C.B.	1200
INRUSH (AMPS)	1565		
SSS SIZE	26LAK-50		
FULL LOAD (KW/TR)	0.522	IPLV	0.439

STARTER TYPE (1) SOLID STATE STARTER - 3 LEAD

	Evaporator	Condenser
FLUID	WATER*	WATER*
% BY WEIGHT	0.0*	0.0*
TUBE MTI NO.	321*	260* / 260
PASSES	2*	2*
FOUL FACTOR	0.00010*	0.00025*
FLUID ENT TEMP (°F)	53.97	85.00*
FLUID LEV TEMP (°F)	44.00*	94.17
FLUID FLOW (gpm)	1560.0*	1950.0*
FLUID PRDROP (ft)	11.3	11.8

(* Designates Specified Input

PART LOAD PERFORMANCE:

Pct Load	CAP (TR)	Pct Power	Inp Pwr (KW)	EEFT (°F)	ELFT (°F)	CEFT (°F)	CLFT (°F)	Sys Perf (KW/TR)
100.0	650.0	100.0	339	53.97	44.00	85.00	94.17	0.522
90.0	585.0	90.3	306	52.97	44.00	85.00	93.26	0.523
80.0	520.0	81.1	275	51.97	44.00	85.00	92.35	0.529
70.0	455.0	72.6	246	50.98	44.00	85.00	91.44	0.541
60.0	390.0	62.8	213	49.98	44.00	85.00	90.54	0.546
50.0	325.0	54.0	183	48.98	44.00	85.00	89.63	0.563
40.0	260.0	45.7	155	47.98	44.00	85.00	88.73	0.596
30.0	195.0	37.2	126	46.99	44.00	85.00	87.83	0.646
20.0	130.0	28.6	97	45.99	44.00	85.00	86.92	0.746
15.6	101.7	24.5	83	45.56	44.00	85.00	86.52	0.816

Certified in accordance with AHRI Water-Cooled Water Chilling Packages Using Vapor Compression Cycle Certification Program, which is based on AHRI Standard 550/590 (IP).

Certified units may be found in the AHRI Directory at www.ahridirectory.org.



Compliant with ASHRAE 90.1 - 2004
 Compliant with ASHRAE 90.1 - 2007
 Compliant with ASHRAE 90.1 - 2010

Compliant with the requirements of the LEED Energy and Atmosphere Enhanced Refrigerant Management Credit (EAc4).

Materials and construction per mechanical specifications - Form 160.75-EG1.

AUXILIARY COMPONENTS INCLUDED IN TOTAL KW – OIL PUMP & HEATER, CHILLER CONTROLS.



Project: JTC GES
Unit Tag: Ch 5
Engineer: Eugene Teng
Customer: JTC Submit

Rating Program: LTS 1.0.6005
Software Version: YW 16.03a
Date: 08/02/2016 10:50:41

SALES REPORT

Unit Specifications			
Model	YMC2-S1336AB	Refrigerant	R134a
Specified Net Capacity (Tons)	380.0	Refrigerant Charge (lb)	1314
Rated Net Capacity (Tons)	380.0	Variable Orifice	V2
Full Load (kW/Ton.R)	0.5205	Isolation Valve	Y
NPLV.IP (kW/Ton.R)	0.3197	OptiSound Control	Y
Input Power (kW)	197.8	Voltage / Hz	415 / 50.0
Starter Type	HYP0490XHC***-68A	FLA (Amps)	288
Compressor	M2C-233FAC	A-Weighted SPL (dBA)	72
Evaporator	EB3314-321-CS*-2***	Min Circuit Ampacity	360
Condenser	CB2914-260-FS*-2***	Max Circuit Breaker Amps	600
Sales Model	YMC3314C2914F233M2B		

	Evaporator	Condenser
Fluid	Water*	Water*
Tube MTI No.	321*	260* / 260
Passes	2*	2*
Fouling Factor (hr-ft ² -°F/Btu)	0.000100*	0.000250*
Entering Fluid Temp (°F)	53.97	85.00*
Leaving Fluid Temp (°F)	44.00*	94.26
Fluid Flow (gpm)	912.0*	1140*
Fluid Pressure Drop (ft)	8.13	7.72

(*) Designates User Specified Input

Certified in accordance with the AHRI Water-Cooled Water Chilling and Heat Pump Water-Heating Packages Using Vapor Compressor Cycle Certification Program, which is based on AHRI Standard 550/590 (I-P) and AHRI 551/591 (SI). Certified units may be found in the AHRI Directory at www.ahridirectory.org. Auxiliary components included in total kW: Chiller Controls.

Compliant with ASHRAE 90.1-2004.
 Compliant with ASHRAE 90.1-2007.
 Compliant with ASHRAE 90.1-2010.

Materials and construction per mechanical specifications - Form 160.84-EG1.
 Auxiliary components included in total kW - Chiller controls.





Project: JTC GES
Unit Tag: Ch 5
Engineer: Eugene Teng
Customer: JTC Submit

Rating Program: LTS 1.0.6005
Software Version: YW 16.03a
Date: 08/02/2016 10:50:41

Partload Data (CEFT constant)										
% Load	Net Capacity (Tons)	% Power	Input Power (kW)	EEFT (°F)	ELFT (°F)	Evap Flow (gpm)	Evap PD (ft)	CEFT (°F)	CLFT (°F)	kW/Ton.R
100	380.0	100	197.8	53.97	44.00	912.0	8.13	85.00	94.26	0.5205
90	342.0	89	175.5	53.97	44.00	820.8	6.75	85.00	93.33	0.5131
80	304.0	78	155.0	53.97	44.00	729.6	5.49	85.00	92.40	0.5099
70	266.0	69	136.4	53.97	44.00	638.4	4.32	85.00	91.49	0.5128
60	228.0	61	119.9	53.97	44.00	547.2	3.19	85.00	90.58	0.5258
50	190.0	53	104.8	53.97	44.00	456.0	2.22	85.00	89.69	0.5517
40	152.0	46	91.21	53.71	44.00	374.5	1.49	85.00	88.81	0.6001
30	114.0	41	80.78	51.28	44.00	374.5	1.49	85.00	87.94	0.7086
20	76.00	41	80.57	48.85	44.00	374.5	1.49	85.00	87.15	1.060
15	56.12	42	83.33	47.58	44.00	374.5	1.49	85.00	86.76	1.485

Certified in accordance with the AHRI Water-Cooled Water Chilling and Heat Pump Water-Heating Packages Using Vapor Compressor Cycle Certification Program, which is based on AHRI Standard 550/590 (I-P) and AHRI 551/591 (SI). Certified units may be found in the AHRI Directory at www.ahridirectory.org. Auxiliary components included in total kW: Chiller Controls.

Compliant with ASHRAE 90.1-2004.
 Compliant with ASHRAE 90.1-2007.
 Compliant with ASHRAE 90.1-2010.
 Materials and construction per mechanical specifications - Form 160.84-EG1.
 Auxiliary components included in total kW - Chiller controls.





Issue Date: 01/13
Project: Project
Engineer: Sales Eng
Customer: customer
Software Version: YW 13.01a

Rating Program: LTC
Rev: v1_128.idd
Date: 05/09/13
Page: 2 of 2

PARTLOAD RATING WITH CONSTANT ENTERING CONDENSER WATER TEMP

MODEL	YRVDVDT0555C	(MOTOR SELECTED BY USER)	
REFRIGERANT (LB 134A)	835		
RATED NET CAPACITY (TR)	200	SPECIFIED NET CAPACITY (TR)	200
INPUT POWER (KW)	111	MAX MOTOR LOAD (KW)	221
VOLTAGE / HZ	415 / 50		
ORIFICE (VARY)	VALVE:2		
ISOLATION VALVE	NO		
RLA	183	LRA	1358
MIN CIR. AMPS.	229	MAX C.B.	450
INRUSH (AMPS)	615		
SSS SIZE	07L_K-50		
FULL LOAD (kW/TR)	0.555	IPLV	0.426

STARTER TYPE (1) SOLID STATE STARTER - 3 LEAD

	Evaporator	Condenser
FLUID	WATER*	WATER*
% BY WEIGHT	0.0*	0.0*
TUBE MTI NO.	271*	260* / 260
PASSES	2*	2*
FOUL FACTOR	0.00010*	0.00025*
FLUID ENT TEMP (°F)	53.97	85.00*
FLUID LEV TEMP (°F)	44.00*	94.30
FLUID FLOW (gpm)	480.0*	600.0*
FLUID PRDROP (ft)	13.3	13.0

(*) Designates Specified Input

PART LOAD PERFORMANCE:

Pct Load	CAP (TR)	Pct Power	Inp Pwr (KW)	EEFT (°F)	ELFT (°F)	CEFT (°F)	CLFT (°F)	Sys Perf (KW/TR)
100.0	200.0	100.0	111	53.97	44.00	85.00	94.30	0.555
90.0	180.0	88.3	98	52.97	44.00	85.00	93.35	0.544
80.0	160.0	77.5	86	51.97	44.00	85.00	92.41	0.538
70.0	140.0	68.5	76	50.98	44.00	85.00	91.50	0.543
60.0	120.0	61.3	68	49.98	44.00	85.00	90.59	0.567
50.0	100.0	54.1	60	48.98	44.00	85.00	89.71	0.600
40.0	80.0	49.6	55	47.98	44.00	85.00	88.84	0.688
30.0	60.0	46.8	52	46.99	44.00	85.00	88.00	0.867
24.4	48.8	46.8	52	46.43	44.00	85.00	87.55	1.065

Certified in accordance with AHRI Water-Cooled Water Chilling Packages Using Vapor Compression Cycle Certification Program, which is based on AHRI Standard 550/590 (IP).

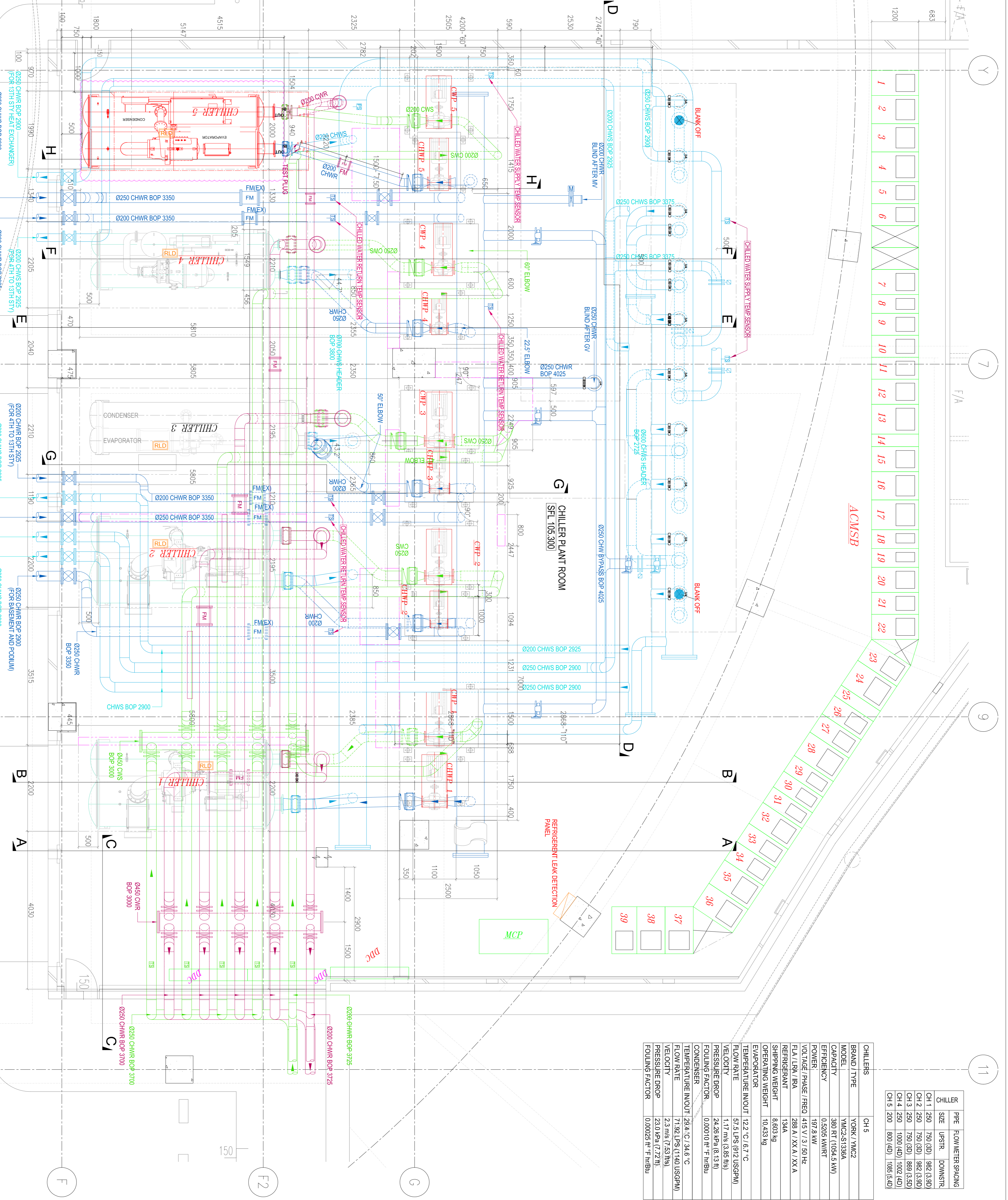
Certified units may be found in the AHRI Directory at www.ahridirectory.org.



Compliant with ASHRAE 90.1 - 2004

Materials and construction per mechanical specifications - Form 160.81-EG1.

AUXILIARY COMPONENTS INCLUDED IN TOTAL KW – OIL HEATER, CHILLER CONTROLS.



CHILLERS	CH 1, 2	CH 3	CH 4	CH 5
BRAND / TYPE	YORK / CENTRIFUGAL	YORK / CENTRIFUGAL	YORK / SCREW	YORK / VMC2
MODEL	YKKS3585G	660 RT (2.286 MW)	YVNDVT0553C	VMC2-S1336A
CAPACITY	0.622 MW/RT	339 kW	357 kW (1.23 MW)	380 RT (1054.5 kW)
EFFICIENCY	0.622 MW/RT	0.227 MW/RT	0.00010 m ³ F / m ³ BU	0.5205 kW/RT
POWER	339 kW	197.8 kW	0.555 kW/RT	197.8 kW
VOLTAGE / PHASE / FREQ	415 V / 3 / 50 Hz	415 V / 3 / 50 Hz	415 V / 3 / 50 Hz	415 V / 3 / 50 Hz
FLA / LRA / IRA	545 A / 3478 A / 1565 A	545 A / 3478 A / 1565 A	183 A / 1135 A / 615 A	288 A / XX A / XX A
REFRIGERANT	134A	134A	134A	134A
SHIPPING WEIGHT	12,341 kg	14,858 kg	6,585 kg	8,603 kg
OPERATING WEIGHT	14,858 kg	17,366 kg	7,270 kg	10,433 kg
EVAPORATOR	12.2 °C / 6.7 °C	12.2 °C / 6.7 °C	12.2 °C / 6.7 °C	12.2 °C / 6.7 °C
TEMPERATURE IN/OUT	12.2 °C / 6.7 °C	12.2 °C / 6.7 °C	12.2 °C / 6.7 °C	12.2 °C / 6.7 °C
FLOW RATE	96.4 LPS (150 USGPM)	96.4 LPS (150 USGPM)	30.3 LPS (480 USGPM)	57.5 LPS (912 USGPM)
VELOCITY	1.35 m/s (4.42 ft/s)	1.35 m/s (4.42 ft/s)	1.46 m/s (4.78 ft/s)	1.17 m/s (3.85 ft/s)
PRESSURE DROP	33.7 kPa (1.3 ft H ₂ O)	33.7 kPa (1.3 ft H ₂ O)	39.7 kPa (1.3 ft H ₂ O)	24.26 kPa (0.13 ft H ₂ O)
FOLLOING FACTOR	0.00010 m ³ F / m ³ BU	0.00010 m ³ F / m ³ BU	0.00010 m ³ F / m ³ BU	0.00010 m ³ F / m ³ BU
CONDENSER	29.4 °C / 34.6 °C	29.4 °C / 34.6 °C	29.4 °C / 34.6 °C	29.4 °C / 34.6 °C
TEMPERATURE IN/OUT	29.4 °C / 34.6 °C	29.4 °C / 34.6 °C	29.4 °C / 34.6 °C	29.4 °C / 34.6 °C
FLOW RATE	71.92 LPS (140 USGPM)	71.92 LPS (140 USGPM)	37.9 LPS (60 USGPM)	71.92 LPS (140 USGPM)
VELOCITY	2.3 m/s (7.53 ft/s)	2.3 m/s (7.53 ft/s)	1.58 m/s (5.20 ft/s)	2.3 m/s (7.53 ft/s)
PRESSURE DROP	38.8 kPa (1.3 ft H ₂ O)	38.8 kPa (1.3 ft H ₂ O)	1.58 m/s (5.20 ft/s)	23.0 kPa (1.72 ft H ₂ O)
FOLLOING FACTOR	0.00025 m ³ F / m ³ BU	0.00025 m ³ F / m ³ BU	0.00025 m ³ F / m ³ BU	0.00025 m ³ F / m ³ BU

CHILLERS	CH 4	CH 5
BRAND / TYPE	YORK / SCREW	YORK / VMC2
MODEL	YVNDVT0553C	VMC2-S1336A
CAPACITY	200 RT (703 kW)	380 RT (1054.5 kW)
EFFICIENCY	0.555 kW/RT	0.5205 kW/RT
POWER	111 kW	197.8 kW
VOLTAGE / PHASE / FREQ	415 V / 3 / 50 Hz	415 V / 3 / 50 Hz
FLA / LRA / IRA	183 A / 1135 A / 615 A	288 A / XX A / XX A
REFRIGERANT	134A	134A
SHIPPING WEIGHT	6,585 kg	8,603 kg
OPERATING WEIGHT	7,270 kg	10,433 kg
EVAPORATOR	12.2 °C / 6.7 °C	12.2 °C / 6.7 °C
TEMPERATURE IN/OUT	12.2 °C / 6.7 °C	12.2 °C / 6.7 °C
FLOW RATE	30.3 LPS (480 USGPM)	57.5 LPS (912 USGPM)
VELOCITY	1.46 m/s (4.78 ft/s)	1.17 m/s (3.85 ft/s)
PRESSURE DROP	39.7 kPa (1.3 ft H ₂ O)	24.26 kPa (0.13 ft H ₂ O)
FOLLOING FACTOR	0.00010 m ³ F / m ³ BU	0.00010 m ³ F / m ³ BU
CONDENSER	29.4 °C / 34.6 °C	29.4 °C / 34.6 °C
TEMPERATURE IN/OUT	29.4 °C / 34.6 °C	29.4 °C / 34.6 °C
FLOW RATE	37.9 LPS (60 USGPM)	71.92 LPS (140 USGPM)
VELOCITY	1.58 m/s (5.20 ft/s)	2.3 m/s (7.53 ft/s)
PRESSURE DROP	1.58 m/s (5.20 ft/s)	23.0 kPa (1.72 ft H ₂ O)
FOLLOING FACTOR	0.00025 m ³ F / m ³ BU	0.00025 m ³ F / m ³ BU

- NOTES**
- 1) ALL DIMENSIONS ARE IN MILLIMETERS UNLESS STATED OTHERWISE.
 - 2) THE EXISTING EQUIPMENT AND PIPING ARRANGEMENT SHOWN HAVE BEEN VERIFIED AND CONFIRMED AT SITE FOR ACCURACY.
 - 3) ALL TEMPERATURE SENSOR LOCATIONS TO HAVE 2 SPARE THERMO-WEELS LOCATED AT BOTH SIDE OF THE SENSOR FOR VERIFICATION.
 - 4) FLOW METERS TO BE INSTALLED WITH MINIMUM STRAIGHT PIPE LENGTH OF 5 DIAMETERS UPSTREAM AND 3 DIAMETERS DOWNSTREAM.
 - 5) CHW FLOW METER TO VALIDATE AGAIN (FOR NEW CHILLER ONLY).
 - 6) ALIGN THE NEW CHILLER CHWS NOZZLE CENTRE-LINE TO THE EXISTING CHWS PIPE CENTRE-LINE AS CLOSE AS POSSIBLE. EXISTING CHILLER LOCATION SHALL BE THE SAME.

JURONG TOWN CORPORATION
SUBMISSION REVIEW

This review is for general compliance with design codes, regulations and standards. It does not constitute a guarantee of the accuracy or completeness of the information provided. The Contractor is responsible for the correctness of dimension and details, and for the correctness and compatibility of material and equipment used in the installation.

All materials and installations shall comply to current local authorities requirements. Comments / corrections made on this shop drawing do not relieve the Contractor of his contractual responsibilities and from compliance with the specifications.

CONTRACTOR MAY PROCEED, ONLY ON ANY COMMENTS AND SUBMIT FINAL REVISIONS TO THE SPECIFICATIONS.

CONTRACTOR MAY PROCEED FULLY, INCORPORATE COMMENTS AND RE-SUBMIT DRAWING.

CONTRACTOR MAY PROCEED, ONLY ON INCORPORATE COMMENTS AND RE-SUBMIT DRAWING.

CONTRACTOR MAY PROCEED, FULLY INCORPORATE ALL COMMENTS AND RE-SUBMIT DRAWING.

DATE: _____

REMARKS: All comments & approval made do not relieve the Contractor of his contractual responsibilities & from compliance with the specifications.

LEGEND

- CH CHILLER
- CHWP CHILLED WATER PUMP
- CWP CONDENSER WATER PUMP
- ET EXPANSION TANK
- CHWS CHILLED WATER SUPPLY PIPE
- CHWR CHILLED WATER RETURN PIPE
- CWS CONDENSER WATER SUPPLY PIPE
- CWR CONDENSER WATER RETURN PIPE
- MWP MAKE-UP WATER PIPE
- DP DRAIN / OVERFLOW PIPE
- BAL COOLING TOWER BALANCING PIPE
- ATCS AUTO TUBE CLEANING SYSTEM
- CWTS CONDENSER WATER TREATMENT SYSTEM
- BT BUTTERFLY VALVE (BV)
- CV CHECK VALVE (CV)
- FJ FLEXIBLE JOINT (FJ)
- GV GATE VALVE (GV)
- MV MOTORISED VALVE (MV)
- 2WAY 2 WAY MODULATING VALVE (2WAY)
- Y STRAINER (NS)
- DPI DIFFERENTIAL PRESSURE SWITCH
- FM FLOW METER
- FSI FLOW SWITCH
- PSI PRESSURE GAUGE
- TSI TEMPERATURE SENSOR
- T THERMOWELL
- SP SPRING ISOLATOR
- CONCRETE PLINTH (EXISTING)
- VARIABLE SPEED DRIVE (VSD)
- SUBSIDIARY CONTROL PANEL (SCP)
- DIRECT DIGITAL CONTROL PANEL
- MASTER CONTROL PANEL (MCP)
- FMI EXISTING FLOW METER
- RID REFRIGERANT LEAK DETECTOR

SHOP DRAWING

CLIENT OWNER: JURONG TOWN CORPORATION HEADQUARTERS

ENERGY SOLUTION CONSULTANT: JOHNSON CONTROLS(S) PTE LTD
6 Changi Business Park Avenue 1, #06-212Z, Singapore-480117

JOHNSON CONTROLS(S) PTE LTD
6 Changi Business Park Avenue 1, #06-212Z, Singapore-480117

MAIN CONTRACTOR: JOHNSON CONTROLS(S) PTE LTD
6 Changi Business Park Avenue 1, #06-212Z, Singapore-480117

PROJECT: PROVISION OF GUARANTEED ENERGY SAVINGS PERFORMANCE CONTRACTING SERVICES AND REPLACEMENT OF 2 NOS. 600RT AND 1 NO. 300RT CHILLERS AT JTC SUMMIT

DRAWING TITLE: CHILLERS, PUMPS AND PIPING LAYOUT

SCALE: 1:50 @ A1 PAPER

DATE: 20-AUGUST-2013

JOB NO.: S902134526

DESIGN: SURYA

CHECKED: K. T. ONG

APPROVED: KANG

DRAWING NO.: JC-ITC13M-ACFPX01-D

SHEET NO.: 1 OF 1