REF PLANT NAME **CORPSE ROOM**

1. DESIGN CONDITION

1) Temperature Condition

Open Air		35	℃
Sea Water		36	℃
Deck	sunshine	60	℃
	shade	37	℃
Wall	sunshine	50	℃
	shade	37	℃
Engine Room		45	℃
Passage		35	℃
Conditioned Room		33	℃
Unconditioned Room		35	℃
Galley		40	℃

2) Refrigeration provision chamber

ROOM	Volume (m^3)	Temperature (℃)	Cooler type	Defrost method	Remarks
Corpse Room No1	14.3	0.6	UC	EH	UC : Unit Cooler
Corpse Room No2			UC	EH	GC : Grid Coil
			UC	EH	AF : Agitator Fan
			UC	EH	HG : Hot Gas
					EH : Electric Heater
TOTAL	14.3				

3) Heat Transmission Coefficient

Part	Specification	K ($kcal/m^2h℃$)	Remarks
Ceiling	100t PU	0.319	PW : Ply Wood PU : Polyurethane Foam CM : Cement Mortar QT : Quarry Tile VR : Vinyl Roofing NT : Non slip Tile
Floor	150t PU	0.447	
Side Wall	100t PU	0.319	
Partition Wall			

2. CALCULATION OF THE EACH ROOM

2.1 CORPSE ROOM No.1

Room Volume	14.3	(m^3)
Room Temperature	0.6	(^oC)

1) Transmission Heat Gain, Q_T (kcal/h)

Part	Area (m^2)			K (kcal/m^2h℃)	Δt (℃)	Q (kcal/h)
Ceiling	1.6	×	4.6	0.319	58	136.2
Floor	1.6	×	4.6	0.447	35	115.1
Side Wall	1.6	×	2.6		33	43.8
In Side	1.6	×	2.6	0.319	33	43.8
Partition Wall	4.6	×	2.6		33	125.9
Out side	4.6	×	2.6	0.319	48	183.1
SUB TOTAL						647.9

2) Infiltration Heat(Door), Qa (kcal/h)

Qa = 14.3 (m^3) × 6 (T/day)× 24.80 (kcal/m^3)
= 88.7 (kcal/h)

3) Internal heat for motor, Qm (kcal/h)

Qm = P kW × $1/\eta_m$ × ξ/24 × 860 kcal/h/kW
= 0.20 ×(1 / 0.85)×(14 / 24)×860× 2 set(s)
= 236.1 (kcal/h)

4) Other, Qo (kcal/h)

Qo = (Q_T + Qa + Qm) × 0
= 972.7 × 0.2
= 194.5 (kcal/h)

5) TOTAL HEAT LOAD : 1167.2 kcal/h

2.2 CORPSE ROOM No.2

Room Volume	0.0	(m^3)
Room Temperature	0	(^oC)

1) Transmission Heat Gain, Q_T (kcal/h)

Part	Area (m^2)			K (kcal/m^2h℃)	Δt (℃)	Q (kcal/h)
Ceiling	0.0	×	0.0	0.319	0	0.0
Floor	0.0	×	0.0	0.447	0	0.0
Side Wall	0.0	×	0.0	0.319	0	0.0
		×				0.0
		×				0.0
Partition Wall		×		0.000	0	0.0
		×			0	0.0
		×				0.0
SUB TOTAL						0.0

2) Infiltration Heat(Door), Qa (kcal/h)

Qa = 0.0 (m^3) × 6 (T/day)× 8.80 (kcal/m^3)
= 0.0 (kcal/h)

3) Internal heat for motor, Qm (kcal/h)

Qm = P kW × $1/\eta_m$ × ξ/24 × 860 kcal/h/kW
= 0.20 ×(1 / 0.85)×(14 / 24)×860× 0 set(s)
= 0.0 (kcal/h)

4) Other, Qo (kcal/h)

Qo = (Q_T + Qa + Qm) × 0
= 0.0 × 0.2
= 0.0 (kcal/h)

5) TOTAL HEAT LOAD : 0.0 kcal/h

2.3 FISH ROOM

Room Volume	0.0	(m^3)
Room Temperature	0	(^oC)

1) Transmission Heat Gain, Q_T (kcal/h)

Part	Area (m^2)			K (kcal/m^2h℃)	Δt (℃)	Q (kcal/h)
Ceiling	0.0	×	0.0			0.0
Floor	0.0	×	0.0			0.0
Side Wall		×				0.0
		×				0.0
Partition Wall		×				0.0
		×		0.000		0.0
SUB TOTAL						0.0

2) Infiltration Heat(Door), Qa (kcal/h)

Qa = 0.0 (m^3) × 6 (T/day)× 0.00 (kcal/m^3)
= 0.0 (kcal/h)

3) Internal heat for motor, Qm (kcal/h)

Qm = P kW × $1/\eta_m$ × ξ/24 × 860 kcal/h/kW
= 0.40 ×(1 / 0.85)×(14 / 24)×860× 0 set(s)
= 0.0 (kcal/h)

4) Other, Qo (kcal/h)

Qo = (Q_T + Qa + Qm) × 0
= 0.0 × 0.2
= 0.0 (kcal/h)

5) TOTAL HEAT LOAD : 0.0 kcal/h

3. TOTAL HEAT GAIN

ROOM	24hr running	14hr running
CORPSE ROOM No.1	1167.2	2000.9
CORPSE ROOM No.2	0.0	0.0
TOTAL	1167.2	2000.9

4. NECESSARY COOLING CAPACITY (ALLOWANCE 20 %)

COOLING CAPACITY : TOTAL HEAT GAIN × 1.2

2000.9 × 1.2 = 2,401 kcal/h

5. SPECIFICATION OF THE REF. MACHINE

Model No.	:	KIC-RU22	
Capacity	:	2,401	(kcal/h)
Condensing Temp.	:	45	(℃)
Evaporating Temp.	:	-5	(℃)
Revolution	:	1,400	RPM
Refrigerant	:		
Condenser Water Flow	:		(m^3/h)
Motor Output	:	2.2	(kW)

6. COOLER

ROOM	Heat Gain (kcal/h)	Δt (℃)	K (kcal/m^2h)	Cooling Area (m^2)	Fin Pitch (mm)	Type
Corpse room1	2000.9	8	18	13.8	6.5	
Corpse room2	0.0	0	0	0		
실제사용				14.3		J040 PEC

※ REMARK

: ΔT - Temperature difference between the Room Temp. and Evaporating Temp.

: K - Heat transmission coefficient of the cooler