

ข้อมูลอากาศประเทศไทยสำหรับงานอนุรักษ์พลังงาน
จังหวัด หนองคาย



โดย

ผศ. ธนิต จินดาวงนิค

คมกฤช ชูเกียรติมั่น

ร.อ.หญิงปริมลภา วสุวัต

สถาบันวิจัยบริการ
จุฬาลงกรณ์มหาวิทยาลัย

สิงหาคม 2543

เล่ม

สารบัญ

หน้า

ตารางสรุปรวมผลของข้อมูลทุกประเภทจังหวัดหนองคาย.....	1
ตารางแสดงผลข้อมูลอุณหภูมิกระเปาะแห้ง (dry bulb temperatures).....	2
แผนภูมิอุณหภูมิกระเปาะแห้ง (dry bulb temperatures).....	3
ตารางแสดงผลข้อมูลอุณหภูมิกระเปาะเปียก (wet bulb temperatures).....	4
แผนภูมิความแตกต่างระหว่างอุณหภูมิกระเปาะแห้งและอุณหภูมิกระเปาะเปียก (diurnal temperatures).....	5
ตารางแสดงผลข้อมูลอุณหภูมิจุดน้ำค้าง (dew point temperatures).....	6
ตารางแสดงผลข้อมูลปริมาณองศาวัน การทำความร้อนและการทำความเย็น (heating and cooling degree days).....	7
แผนภูมิปริมาณองศาวัน การทำความร้อนและการทำความเย็น (heating and cooling degree days).....	9
ตารางแสดงผลข้อมูลความชื้นสัมพัทธ์ (relative humidity).....	10
แผนภูมิความชื้นสัมพัทธ์ (relative humidity).....	11
ตารางแสดงผลข้อมูลจำแนกความถี่ของลม ในแต่ละความเร็วและทิศทาง ที่เกิดลมรายเดือน (monthly frequency distribution of wind in each speed and direction).....	12
แผนภูมิจำแนกความถี่ของลม ในแต่ละความเร็วและทิศทาง ที่เกิดลมรายเดือน (wind rose).....	13
ตารางแสดงผลข้อมูลสภาพท้องฟ้าและสัดส่วนเปอร์เซ็นต์สภาพท้องฟ้า (sky cover and percentage of sky condition).....	14
แผนภูมิสภาพท้องฟ้าและสัดส่วนเปอร์เซ็นต์สภาพท้องฟ้า (sky cover and percentage of sky condition).....	15
ตารางแสดงผลข้อมูลปริมาณน้ำฝน (rain fall).....	16
แผนภูมิปริมาณน้ำฝน (rain fall).....	17
ตารางแสดงผลข้อมูลค่าเฉลี่ยอัตราการระเหยของน้ำรายวัน (evaporation).....	18
แผนภูมิค่าเฉลี่ยอัตราการระเหยของน้ำรายเดือน (average monthly evaporation from U.S. class "A" pan).....	19
แผนภูมิความสัมพันธ์ระหว่างข้อมูลสภาวะอากาศในแผนภูมิไบโอไคลเมตริก (bioclimatic chart) กับแผนภูมิแสดงความถี่ของลมในแต่ละความเร็วและทิศทางที่เกิดลมรายเดือน (wind rose) แยกตามช่วงเวลา.....	20
แผนภูมิความสัมพันธ์ระหว่างข้อมูลสภาวะอากาศ ในแผนภูมิไซโครเมตริก (psychrometric chart) แยกตามช่วงเวลา.....	32
ตารางแสดงผลข้อมูลจำนวนรายชั่วโมงอุณหภูมิกระเปาะแห้ง และค่าเฉลี่ยอุณหภูมิกระเปาะเปียกที่เกิดขึ้น จำแนกตามช่วงอุณหภูมิกระเปาะแห้ง (bin data) ในแต่ละช่วงเวลา.....	36
ตารางแสดงผลข้อมูลปริมาณองศาชั่วโมง การทำความร้อนและการทำความเย็น (degree hours and hours of occurrence).....	39

ตารางสรุปผลของข้อมูลทุกประเภทจังหวัดหนองคาย

CLIMATOLOGICAL DATA FOR THE PERIOD 1981-1998												station : NONG KHAI	
Elevation of station above MSL		174 Meters										Latitude: 17 52 N	
												Longitude: 102 43 E	
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
TEMPERATURE (° C)													
Averages													
Daily Maximum	28.2	30.9	33.6	34.9	32.7	31.4	30.7	30.5	30.7	30.2	29.3	27.3	30.9
Monthly Mean	22.3	24.7	27.5	29.4	28.7	28.1	27.7	27.5	27.4	26.4	24.5	21.6	26.3
Daily Minimum	17.0	19.2	22.2	25.0	25.5	25.6	25.3	25.1	24.8	23.4	20.3	16.4	22.5
Dry bulb Standard Deviation	4.8	4.9	5.2	4.6	3.6	2.9	2.7	2.6	2.7	3.1	4.0	4.8	3.8
Extremes													
Highest	36.5	37.2	40.2	41.4	41.8	38.1	36.0	35.1	34.7	35.2	33.5	34.5	41.8
Lowest	8.4	10.1	10.8	18.1	21.8	22.0	21.4	22.2	21.1	14.6	9.0	8.5	8.4
Monthly Dew Point	15.8	17.3	19.2	21.9	24.0	24.6	24.6	24.6	24.1	22.1	18.6	15.1	21.0
Dew Point Standard Deviation	3.0	3.0	2.9	1.9	1.3	0.9	0.9	0.9	1.3	2.5	3.3	3.5	2.1
Monthly Wet bulb Temperature	18.4	20.0	22.1	24.3	25.4	25.7	25.5	25.5	25.1	23.5	20.7	17.7	22.8
DEGREE DAY BASE 18.3 ° C													
Heating	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cooling	124.1	183.9	284.9	333.4	320.8	293.3	289.4	283.1	273.3	250.2	183.7	101.5	2,921.6
RELATIVE HUMIDITY (%)													
Averages													
Monthly Mean	69.2	66.3	63.6	66.8	77.8	82.6	84.3	85.4	83.3	78.7	71.9	69.1	74.9
Hour 01:00-06:00	83.7	80.6	77.2	80.2	88.8	92.0	92.9	93.6	93.1	90.1	85.4	83.8	86.8
Hour 07:00-12:00	76.0	74.5	71.3	72.6	80.7	85.4	86.9	88.3	86.4	81.1	75.9	75.0	79.5
Hour 13:00-18:00	47.4	45.2	44.1	48.4	62.0	69.3	71.6	72.7	68.1	61.4	51.8	46.6	57.4
Hour 19:00-24:00	69.7	64.9	61.9	65.9	78.7	83.9	85.6	87.0	85.6	82.1	74.7	71.0	75.9
WIND													
Average Speed (m/s)	0.6	0.6	0.7	0.7	0.6	0.5	0.5	0.5	0.4	0.6	0.6	0.6	0.6
Prevailing wind	E, NE	E	E	E	E	W, SW	W, SW	W	E	NE	NE	NE	E
Maximum Speed (m/s)	6.2	7.2	7.7	18.0	8.2	20.6	9.3	10.3	7.2	16.4	5.7	5.1	20.6
SKY COVER (0-10)													
Average Sky Condition	2.9	3	3.3	4.6	6.8	8.2	8.5	8.7	7.1	5.4	4.1	2.6	5.4
Percentage of Sky cover													
Clear sky (0-3)	65	63	61	43	19	7	6	5	16	36	51	69	37
Partly Cloudy sky (4-7)	18	18	17	26	28	21	16	16	25	25	22	17	21
Cloudy sky (8-10)	18	19	22	31	52	72	78	79	58	40	26	14	42
SUNSHINE DURATION* (hours)													
Average Monthly total	-	-	-	-	-	-	-	-	-	-	-	-	-
Percentage of Sunshine	-	-	-	-	-	-	-	-	-	-	-	-	-
SOLAR RADIATION* (W/m²)													
Average Hourly max	-	-	-	-	-	-	-	-	-	-	-	-	-
Average Hourly mean	-	-	-	-	-	-	-	-	-	-	-	-	-
Average Daily Total	-	-	-	-	-	-	-	-	-	-	-	-	-
RAINFALL (mm)													
Average Monthly total	8.8	15.0	32.6	66.2	215.3	249.7	255.7	318.2	240.3	104.9	17.4	5.4	1,529.5
Daily record high	43.3	28.6	69.2	98.5	144.5	104.0	137.3	116.8	92.4	71.1	90.8	41.5	144.5
Average Number of rainy days (0.1 mm. Or more)	1	3	4	8	16	19	21	23	17	9	2	1	124
EVAPORATION (mm)													
Average Monthly total	111.4	120.7	154.4	166.5	147.5	112.8	106.8	102.4	112.4	115.3	111.3	105.1	1,466.6

remark: 1 m/s = 3.597 km/h, = 2.237 mph, = 198.85 fpm, = 1.9455 knots

(*) data base on 1997 - 1998 recorded period

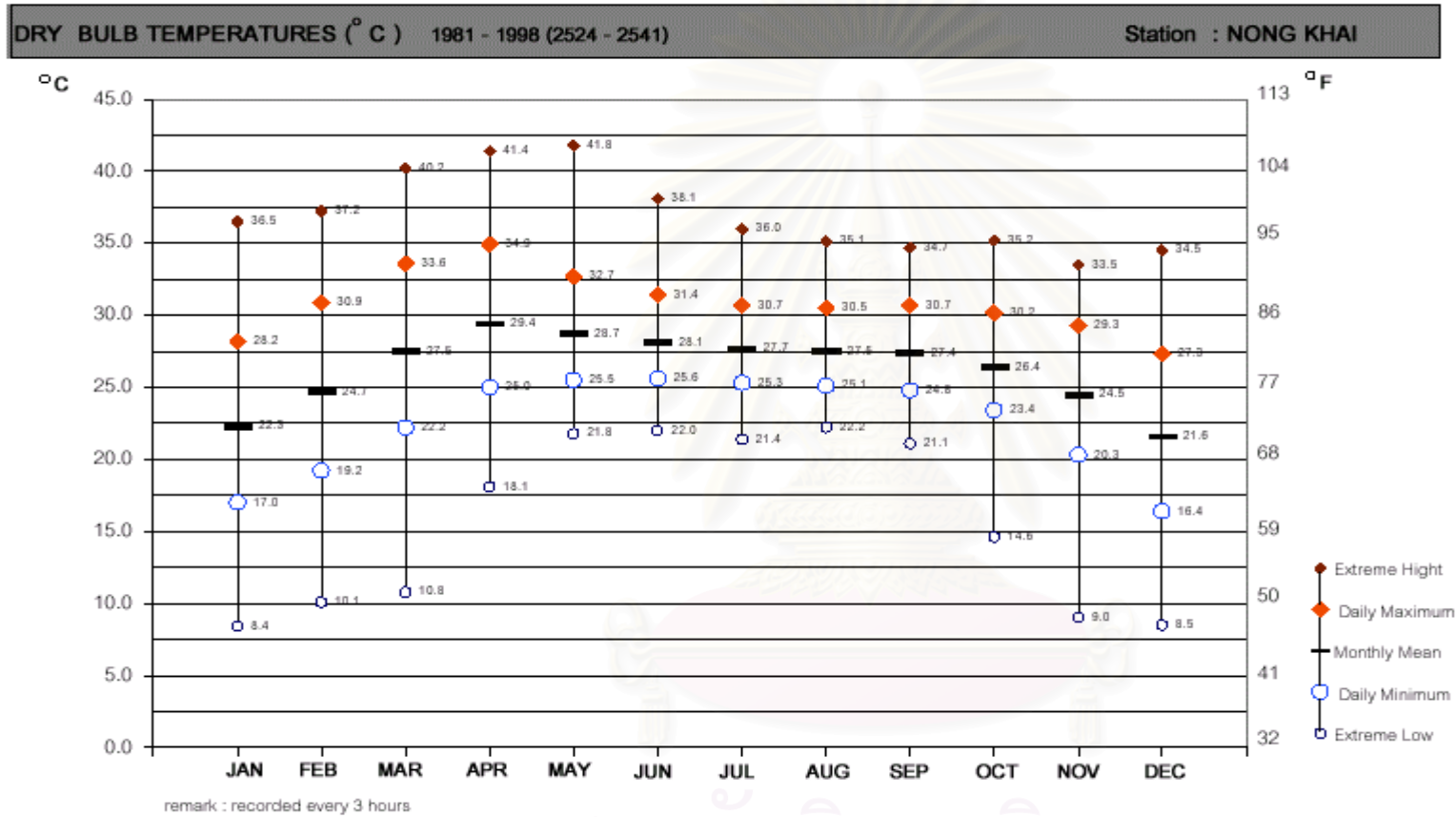
1 W/m2 = 0.317 Btu/h.ft2

(-) missing value or no data report

ตารางแสดงผลข้อมูลอุณหภูมิกระเปาะแห้ง (dry bulb temperatures)

DRY BULB TEMPERATURES (°C) 1981 - 1998 (2524 - 2541)													Station : NONG KHAI																													
MONTH	JANUARY			FEBRUARY			MARCH			APRIL			MAY			JUNE			JULY			AUGUST			SEPTEMBER			OCTOBER			NOVEMBER			DECEMBER			ANNUAL					
DAY	min	mean	max	min	mean	max	min	mean	max	min	mean	max	min	mean	max	min	mean	max	min	mean	max	min	mean	max	min	mean	max	min	mean	max	min	mean	max	min	mean	max	min	mean	max			
1	16.4	21.7	27.6	17.4	23.1	29.2	20.8	25.9	31.6	23.8	29.0	35.3	25.5	29.6	35.0	25.8	28.6	32.7	25.7	27.9	31.0	25.1	27.2	30.1	24.7	27.0	30.1	24.5	27.3	30.7	20.8	25.0	29.8	17.8	22.2	27.4	22.4	26.2	30.9			
2	16.5	22.1	28.1	17.3	23.3	29.5	20.0	25.3	31.2	24.4	29.6	35.8	25.8	30.2	35.4	25.7	28.1	31.5	25.3	28.1	31.7	24.9	27.4	30.4	24.9	27.4	30.6	24.2	26.8	30.2	21.4	25.1	29.9	17.1	21.8	27.1	22.3	26.3	30.9			
3	17.4	22.4	28.1	17.9	23.6	29.8	20.0	25.1	31.2	24.9	29.5	34.9	26.0	29.7	34.4	25.2	27.9	31.2	25.5	27.7	30.4	25.5	27.9	30.9	24.9	27.2	30.0	24.3	27.0	30.3	21.2	25.2	30.0	17.1	21.9	27.2	22.5	26.3	30.7			
4	17.9	22.6	28.0	18.2	23.6	29.5	19.9	25.3	31.4	24.5	29.0	34.2	25.8	29.3	34.1	25.8	28.4	31.5	25.2	27.6	30.3	25.1	27.3	30.1	24.8	27.3	30.4	24.4	26.9	30.1	21.3	24.9	29.1	17.5	22.6	28.1	22.5	26.2	30.6			
5	17.6	22.3	27.8	18.3	23.5	29.2	20.5	24.7	29.2	24.2	29.1	34.8	25.1	28.6	32.8	25.0	27.9	31.6	25.1	27.4	30.5	25.1	27.4	30.4	24.6	27.5	31.3	24.1	26.4	29.4	21.1	25.0	29.7	17.9	22.7	28.1	22.4	26.0	30.4			
6	16.5	21.9	27.4	18.1	23.6	29.8	19.9	24.9	30.7	24.9	29.7	35.7	25.6	29.3	34.0	25.4	27.8	30.9	25.4	27.5	30.2	25.1	27.6	30.8	25.1	27.4	30.5	24.0	26.6	29.8	21.0	25.2	30.2	17.7	22.4	27.7	22.4	26.2	30.6			
7	17.1	22.0	27.7	18.2	23.6	29.8	20.5	25.8	31.8	24.6	30.0	36.4	25.9	29.3	33.9	25.0	27.6	30.9	25.4	27.8	31.2	25.3	27.6	30.7	24.5	27.1	30.3	24.0	26.9	30.6	21.3	25.5	30.4	17.0	21.7	27.5	22.4	26.2	30.9			
8	16.3	21.8	27.7	18.1	23.8	30.3	20.7	26.2	32.7	24.5	29.1	34.4	25.7	29.4	33.8	25.3	28.0	31.3	25.5	27.9	31.3	25.4	27.6	30.6	25.0	27.1	30.0	24.1	26.9	30.2	21.3	25.1	29.6	16.2	21.3	27.2	22.3	26.2	30.8			
9	15.9	21.6	27.8	18.9	24.2	30.3	21.2	26.9	33.5	24.5	29.4	35.5	25.9	28.7	32.7	25.6	27.9	31.1	25.6	27.8	30.8	25.0	27.5	31.0	25.0	27.2	30.2	24.2	26.8	30.1	21.0	24.4	28.5	16.3	21.6	27.6	22.4	26.2	30.8			
10	16.3	22.1	28.4	19.1	24.4	30.4	21.7	27.3	33.9	24.6	29.8	35.9	25.4	28.9	33.2	25.3	28.2	31.6	25.1	27.6	30.8	25.1	27.4	30.0	24.9	27.5	30.7	24.2	27.1	30.7	20.5	24.3	28.6	16.7	21.7	27.6	22.4	26.4	31.0			
11	16.3	22.2	28.5	19.5	24.3	29.5	22.1	27.8	34.5	25.3	30.4	36.5	25.4	28.5	32.4	25.6	27.8	30.9	25.4	27.8	31.2	25.0	27.4	30.3	24.7	27.5	30.9	24.0	26.8	30.3	20.0	24.2	28.9	16.9	21.9	27.7	22.5	26.4	31.0			
12	16.9	22.5	28.7	19.1	24.6	30.8	22.3	27.9	34.1	25.4	29.7	35.3	25.3	29.0	33.5	25.4	27.9	31.3	25.3	27.9	31.3	25.4	27.6	30.7	25.0	27.3	30.8	25.0	27.7	31.2	23.9	26.8	30.5	20.5	24.7	29.8	16.9	21.9	27.5	22.6	26.5	31.2
13	17.1	22.6	28.6	19.6	25.1	31.3	22.9	28.1	33.7	24.9	29.1	34.0	25.8	28.7	32.4	25.4	27.7	30.7	25.2	27.7	30.6	25.6	27.8	30.5	25.3	27.8	31.0	24.1	26.9	30.8	20.8	24.8	29.5	16.4	22.0	28.0	22.8	26.5	30.9			
14	16.9	22.3	28.1	19.7	25.4	32.0	22.2	27.9	34.2	24.8	29.3	34.7	25.3	28.0	32.2	25.6	28.0	31.6	25.1	27.1	29.5	25.5	27.6	30.4	25.4	27.8	31.0	23.9	26.8	30.4	21.1	24.9	29.5	16.8	22.1	28.0	22.7	26.4	31.0			
15	16.5	22.2	28.4	19.5	25.3	32.2	22.1	27.9	34.0	24.8	29.2	35.0	25.2	28.5	32.8	25.2	28.2	31.8	25.2	27.1	29.5	25.0	27.3	30.3	25.1	27.7	31.0	23.7	26.7	30.3	21.0	24.8	29.2	17.0	22.0	27.5	22.5	26.4	31.0			
16	16.9	22.2	28.1	19.4	25.2	32.1	22.5	28.5	35.3	25.1	29.5	35.0	25.4	28.1	32.1	25.4	28.7	32.2	24.7	27.2	30.4	25.0	27.4	31.0	24.9	27.7	31.1	24.0	26.7	30.0	20.9	25.1	30.0	16.6	21.7	27.4	22.6	26.5	31.2			
17	16.4	22.1	28.1	19.6	25.6	32.7	22.4	28.6	35.2	25.2	29.7	35.0	25.1	28.3	32.4	25.9	28.5	31.5	25.2	27.8	31.3	25.1	27.4	30.8	24.8	27.6	31.1	24.1	26.7	30.2	21.2	24.8	29.3	16.0	21.6	27.5	22.6	26.6	31.3			
18	17.1	22.6	28.7	20.0	25.7	32.2	22.2	28.2	35.0	25.5	29.8	35.3	25.6	28.2	32.2	25.6	28.3	32.1	25.2	27.6	31.0	25.1	27.5	31.0	24.8	27.5	30.8	23.7	26.6	30.4	20.9	24.7	29.2	16.5	21.8	27.4	22.7	26.5	31.3			
19	17.3	22.8	28.7	19.5	25.2	31.5	22.7	28.4	35.0	25.9	30.3	36.2	25.0	28.2	31.6	25.8	28.1	31.5	25.5	28.0	31.3	24.9	27.5	31.1	24.8	27.5	30.8	23.8	26.7	30.4	20.0	24.4	29.6	16.5	21.8	27.5	22.6	26.6	31.3			
20	17.8	22.9	28.6	19.5	25.2	31.8	22.8	28.8	35.6	25.1	29.1	33.9	25.4	28.6	32.4	25.8	28.3	31.6	25.7	28.1	31.0	25.1	27.4	30.3	25.1	27.2	30.0	23.4	26.4	30.1	19.8	24.3	29.5	16.1	21.6	27.3	22.6	26.5	31.0			
21	17.3	22.7	28.7	19.3	25.0	31.3	23.4	28.9	35.2	25.3	29.3	34.2	25.7	29.1	33.2	26.1	28.8	31.7	25.3	27.9	30.7	25.2	27.6	30.9	24.6	27.3	30.7	23.0	26.3	30.4	19.5	23.9	29.0	16.4	21.8	27.5	22.6	26.5	31.1			
22	17.6	22.7	28.7	19.2	24.6	30.8	23.2	28.9	35.4	24.8	29.1	34.1	25.9	29.2	33.2	26.3	28.9	32.2	25.7	27.8	30.6	25.3	28.0	31.5	24.6	27.4	30.9	22.8	26.0	30.1	19.6	24.1	29.2	15.9	21.4	27.1	22.6	26.5	31.1			
23	17.4	22.8	28.8	19.4	25.2	31.6	23.2	28.5	34.5	25.4	29.6	34.5	25.9	29.0	32.6	26.0	28.3	31.4	25.1	27.5	30.4	25.1	27.2	29.8	24.8	27.3	30.8	22.8	26.1	30.1	19.4	24.3	29.6	15.7	21.0	26.7	22.5	26.4	30.9			
24	17.8	22.5	28.1	20.3	25.4	31.2	23.4	28.8	34.6	26.0	29.7	34.9	25.6	28.7	32.5	25.8	28.2	31.3	25.2	27.4	30.1	24.8	26.8	29.6	24.7	27.5	30.8	22.4	26.0	30.0	19.5	23.9	29.2	14.8	20.3	26.3	22.5	26.3	30.7			
25	17.6	22.3	27.7	20.5	25.7	31.4	23.9	28.8	34.4	24.7	29.1	34.2	25.6	28.2	31.5	25.8	28.3	31.6	25.4	27.7	31.0	24.8	27.1	30.1	24.5	27.5	31.2	22.3	25.7	29.8	18.8	23.4	28.6	15.3	20.7	26.6	22.4	26.2	30.7			
26	17.5	22.3	27.6	20.8	25.3	30.3	23.3	28.5	34.5	25.4	29.5	34.6	25.8	28.4	31.7	25.7	28.1	31.6	25.2	27.8	31.1	25.1	27.3	30.2	24.8	27.5	30.6	22.0	25.6	29.9	19.1	23.7	28.9	15.3	21.1	27.2	22.5	26.2	30.7			
27	17.1	21.8	27.1	20.6	25.5	31.3	23.5	28.0	33.1	24.8	28.8	34.0	25.3	27.6	30.6	25.7	27.9	30.4	25.6	27.9	31.1	25.0	27.6	30.9	25.0	27.8	31.1	22.0	25.5	30.1	19.7	23.8	28.7	15.7	21.4	27.3	22.5	26.1	30.5			
28	16.6	21.8	27.4	20.4	25.5	31.6	23.2	28.1	33.9	25.0	29.4	34.4	24.9	27.4	31.0	25.3	27.4	30.4	25.5	27.8	30.9	25.3	28.0	31.5	24.9	27.7	30.9	21.7	25.4	30.1	19.8	23.8	28.8	15.9	20.9	26.7	22.4	26.1	30.6			
29	16.4	22.1	28.3	19.6	25.1	31.3	23.6	28.3	33.8	26.0	29.5	34.4	24.9	27.6	31.0	25.3	27.7	31.1	25.4	27.5	30.3	25.7	27.9	31.0	24.7	27.5	31.0	22.1	25.5	29.6	18.8	23.3	28.6	15.7	20.6	26.2	22.4	26.1	30.5			
30	17.1	22.9	29.4				23.8	28.7	34.2	25.5	29.3	34.2	25.4	28.2	31.8	25.5	27.8	30.7	25.3	27.7	30.7	24.8	26.9	29.6	24.4	27.4	30.8	21.6	25.5	30.3	18.5	22.9	28.2	15.7	21.0	27.0	22.5	26.2	30.6			
31	17.2	23.3	29.8				23.8	28.4	33.7				25.7	28.6	32.2				25.0	27.0	29.5				25.4	27.3	30.0				21.5	25.1	29.7				16.3	21.6	27.6	22.1	25.9	30.4
Average	17.0	22.3	28.2	19.2	24.7	30.9	22.2	27.5	33.6	25.0	29.4	34.9	25.5	28.7	32.7	25.6	28.1	31.4	25.3	27.7	30.7	25.1	27.5	30.3	24.8	27.4	30.7	23.4	26.4	30.2	20.3	24.5	29.3	16.4	21.6	27.3	22.5	26.3	30.9			
Extremes	8.4	36.5	10.1	37.2	10.8	40.2	18.1	41.4	21.8	41.8	22.0	38.1	21.4	36.0	22.2	35.1	21.1	34.7	14.6	35.2	21.1	34.7																				

แผนภูมิอุณหภูมิกระเปาะแห้ง (dry bulb temperatures)

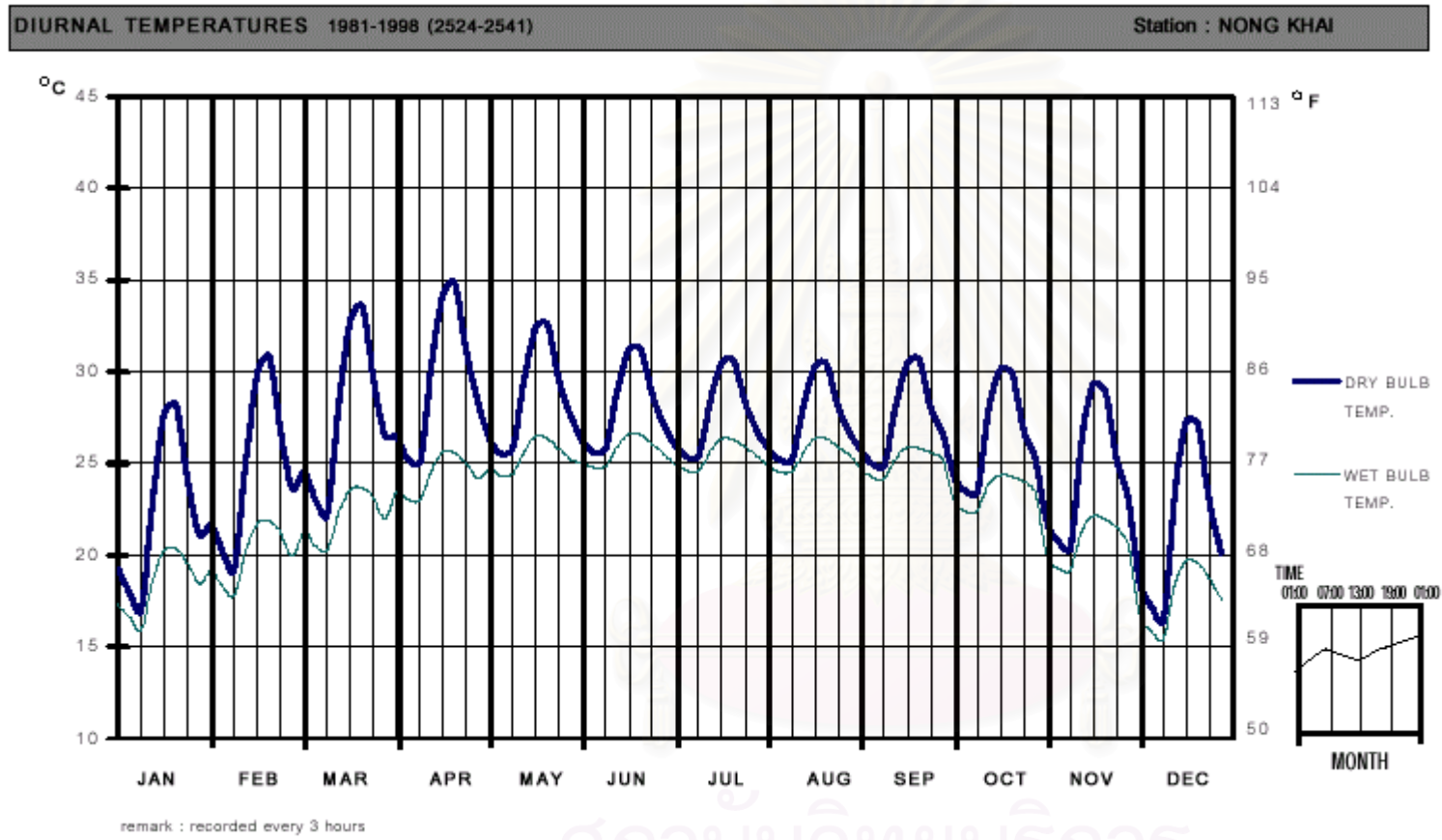


สถาบันวิทยบริการ
จุฬาลงกรณ์มหาวิทยาลัย

ตารางแสดงผลข้อมูลอุณหภูมิกระเปาะเปียก (wet bulb temperatures)

WET BULB TEMPERATURES (°C) 1981 - 1998 (2524 - 2541)														Station : NONG KHAI																									
MONTH	JANUARY			FEBRUARY			MARCH			APRIL			MAY			JUNE			JULY			AUGUST			SEPTEMBER			OCTOBER			NOVEMBER			DECEMBER			ANNUAL		
DAY	min	mean	max	min	mean	max	min	mean	max	min	mean	max	min	mean	max	min	mean	max	min	mean	max	min	mean	max	min	mean	max	min	mean	max	min	mean	max	min	mean	max	min	mean	max
1	15.5	18.1	20.3	15.9	18.4	20.6	18.7	20.6	22.2	21.7	23.4	24.9	23.8	25.2	26.5	24.8	25.8	27.0	24.9	25.6	26.5	24.5	25.3	26.3	24.3	25.3	26.2	23.6	24.6	25.4	19.8	21.3	22.6	16.3	18.2	20.0	21.2	22.7	24.0
2	15.8	18.4	20.6	15.9	18.5	20.5	18.0	20.0	21.8	22.4	23.7	25.1	24.1	25.4	26.7	24.8	25.6	26.8	24.5	25.5	26.5	24.5	25.4	26.4	24.4	25.5	26.4	23.2	24.3	25.0	19.7	21.3	22.8	16.0	18.0	19.7	21.1	22.6	24.0
3	16.6	18.9	20.9	16.4	18.9	21.0	18.0	20.1	22.1	22.2	23.8	25.2	24.4	25.3	26.4	24.5	25.5	26.5	24.7	25.5	26.4	24.8	25.7	26.7	24.4	25.4	26.3	23.3	24.3	25.2	19.7	21.5	22.7	16.1	18.4	20.4	21.3	22.8	24.2
4	17.0	19.2	21.0	16.8	19.1	21.1	18.1	20.3	22.4	22.5	23.8	25.0	24.2	25.2	26.5	25.0	25.8	26.7	24.4	25.4	26.3	24.5	25.4	26.3	24.2	25.3	26.2	23.4	24.3	24.9	20.1	21.4	22.5	16.5	18.8	20.7	21.4	22.8	24.1
5	16.7	18.7	20.6	17.0	19.3	21.2	18.6	20.0	21.3	22.5	23.8	25.0	23.5	24.8	25.7	24.4	25.6	26.9	24.3	25.2	26.1	24.5	25.5	26.4	24.2	25.3	26.6	23.4	24.1	24.7	19.9	21.4	22.8	17.0	18.8	20.6	21.3	22.7	24.0
6	15.6	18.2	20.4	17.0	19.3	21.3	18.0	20.0	21.9	22.9	24.1	25.5	23.7	24.9	26.1	24.8	25.6	26.5	24.6	25.3	26.0	24.5	25.5	26.6	24.5	25.4	26.4	23.2	24.1	24.8	19.9	21.6	22.9	16.3	18.2	19.9	21.2	22.7	24.0
7	16.2	18.2	20.1	17.1	19.2	21.1	18.6	20.6	22.4	22.5	23.8	25.2	24.0	25.0	26.3	24.2	25.4	26.5	24.8	25.6	26.5	24.6	25.4	26.5	23.9	25.1	26.1	22.9	24.1	25.1	20.2	21.7	23.2	15.7	17.8	19.7	21.2	22.7	24.1
8	15.4	17.7	19.7	16.9	19.3	21.5	19.0	21.0	22.9	22.3	23.6	24.8	24.1	25.2	26.4	24.5	25.6	26.7	24.6	25.5	26.5	24.5	25.4	26.4	24.4	25.3	26.1	23.1	24.2	25.0	20.0	21.5	22.6	15.3	17.5	19.4	21.2	22.6	24.0
9	14.9	17.7	19.9	17.5	19.8	21.8	19.4	21.4	23.2	22.4	23.7	25.1	24.2	25.0	26.3	24.7	25.6	26.5	24.8	25.6	26.5	24.3	25.4	26.6	24.4	25.3	26.2	23.3	24.2	25.0	19.6	20.9	22.1	15.2	17.5	19.5	21.2	22.7	24.1
10	15.5	18.1	20.2	18.0	20.0	21.7	19.7	21.7	23.6	22.4	24.1	25.5	24.0	25.2	26.3	24.5	25.6	26.5	24.4	25.5	26.4	24.5	25.4	26.1	24.3	25.4	26.2	23.1	24.2	25.1	19.0	20.5	21.7	15.7	17.8	20.0	21.3	22.8	24.1
11	15.4	18.3	20.4	17.9	20.0	21.6	20.5	22.4	24.2	23.0	24.4	25.8	24.2	25.3	26.5	24.7	25.6	26.5	24.6	25.6	26.7	24.3	25.4	26.3	24.0	25.2	26.0	22.9	24.1	24.9	19.0	20.6	22.0	15.8	18.0	20.0	21.4	22.9	24.2
12	15.9	18.7	20.7	17.8	20.1	22.0	20.5	22.4	24.0	23.0	24.1	25.5	24.1	25.5	26.7	24.6	25.6	26.7	24.3	25.4	26.5	24.4	25.4	26.3	24.4	25.4	26.2	23.0	24.1	25.1	19.5	21.1	22.3	15.7	18.0	20.0	21.4	23.0	24.3
13	16.2	18.7	20.7	18.4	20.6	22.5	21.1	22.7	24.2	22.9	24.1	25.3	24.5	25.5	26.6	24.7	25.5	26.5	24.3	25.5	26.4	24.7	25.6	26.3	24.5	25.5	26.3	23.1	24.1	25.0	19.9	21.3	22.4	15.7	18.2	20.3	21.7	23.1	24.4
14	15.7	18.3	20.3	18.4	20.7	22.5	20.6	22.5	24.1	22.8	24.2	25.5	24.4	25.2	26.4	24.9	25.7	26.9	24.6	25.4	26.1	24.8	25.5	26.4	24.6	25.5	26.2	23.2	24.0	24.9	20.0	21.3	22.5	15.8	18.2	20.5	21.6	23.1	24.4
15	15.6	18.3	20.2	18.2	20.6	22.3	20.4	22.4	24.0	22.8	24.0	25.4	24.3	25.3	26.4	24.6	25.7	26.9	24.6	25.3	26.2	24.4	25.4	26.4	24.5	25.4	26.3	22.7	23.9	24.9	19.8	21.3	22.5	15.9	18.1	20.1	21.5	23.0	24.3
16	15.7	18.2	20.1	18.2	20.6	22.5	20.6	22.5	24.2	22.7	24.2	25.5	24.3	25.3	26.5	25.1	26.0	26.9	24.2	25.3	26.4	24.5	25.5	26.8	24.0	25.1	26.1	23.2	24.3	25.1	20.0	21.5	22.9	15.5	17.8	19.7	21.5	23.0	24.4
17	15.4	18.2	20.2	18.3	20.7	22.5	20.6	22.3	24.0	23.0	24.6	26.1	24.2	25.3	26.5	24.7	25.6	26.7	24.5	25.6	26.6	24.5	25.5	26.7	24.1	25.2	26.0	23.3	24.3	25.2	20.1	21.5	22.9	15.1	17.7	19.7	21.5	23.0	24.4
18	16.2	18.7	20.7	18.5	20.6	22.4	20.0	22.0	23.8	23.4	24.7	26.0	24.4	25.3	26.4	24.7	25.7	26.7	24.6	25.6	26.5	24.5	25.5	26.5	24.2	25.1	25.9	22.9	24.0	24.8	19.6	21.0	22.3	15.5	17.9	19.8	21.5	23.0	24.3
19	16.2	18.8	20.8	18.1	20.1	21.9	20.4	22.4	24.4	23.6	24.8	26.2	24.4	25.5	26.6	24.8	25.6	26.5	24.8	25.7	26.8	24.1	25.3	26.5	24.0	25.1	25.8	22.8	23.8	24.5	18.8	20.5	22.2	15.5	17.8	19.7	21.5	23.0	24.3
20	16.4	18.8	20.7	18.1	20.2	22.1	20.9	22.9	24.7	23.0	24.5	25.7	24.7	25.6	26.5	24.9	25.7	26.6	24.9	25.7	26.5	24.4	25.4	26.3	24.3	25.0	25.6	22.2	23.3	24.1	18.6	20.3	21.9	15.0	17.6	19.7	21.4	22.9	24.2
21	16.3	18.8	20.8	17.7	20.0	21.8	21.2	22.9	24.5	23.6	24.8	26.0	24.7	25.7	26.7	25.2	26.0	26.8	24.6	25.5	26.3	24.4	25.5	26.4	23.9	24.8	25.4	21.7	23.1	24.2	18.5	20.4	22.0	15.2	17.6	19.5	21.4	22.9	24.2
22	16.5	18.9	20.9	17.8	19.7	21.4	21.2	23.1	24.7	23.1	24.5	25.9	24.9	25.9	26.8	25.2	26.1	26.9	24.9	25.6	26.5	24.6	25.7	26.8	23.7	24.7	25.5	21.7	22.9	23.6	18.6	20.4	22.0	15.0	17.4	19.4	21.4	22.9	24.2
23	16.3	18.6	20.5	18.0	20.2	22.0	21.2	22.9	24.3	23.1	24.6	25.9	24.9	25.8	26.8	25.1	25.8	26.7	24.3	25.3	26.3	24.3	25.4	26.4	23.8	24.8	25.4	21.6	22.9	23.8	18.6	20.2	21.9	14.8	17.0	18.9	21.3	22.8	24.1
24	16.2	18.4	20.4	18.5	20.5	22.1	21.5	23.2	24.7	23.6	24.8	26.2	24.7	25.6	26.6	24.8	25.7	26.6	24.3	25.3	26.2	24.4	25.2	26.4	23.9	24.9	25.5	21.4	22.7	23.6	18.1	19.8	21.4	13.8	16.4	18.6	21.3	22.7	24.0
25	16.2	18.4	20.3	18.8	20.9	22.6	21.9	23.3	24.8	23.0	24.7	26.2	24.5	25.4	26.5	24.8	25.8	26.7	24.7	25.4	26.5	24.2	25.3	26.1	23.8	24.8	25.5	21.1	22.4	23.4	17.9	19.5	21.0	14.4	17.0	19.1	21.3	22.7	24.1
26	16.1	18.3	20.2	19.2	21.0	22.7	21.3	23.1	24.6	23.7	25.0	26.2	24.5	25.6	26.7	24.9	25.7	26.7	24.5	25.6	26.7	24.5	25.5	26.4	24.0	24.8	25.4	21.0	22.3	23.4	17.7	19.7	21.4	14.6	17.2	19.3	21.3	22.8	24.1
27	15.6	17.9	19.9	19.2	21.1	22.7	21.5	22.9	24.2	23.3	24.6	26.2	24.5	25.5	26.4	24.7	25.5	26.3	24.7	25.6	26.5	24.5	25.5	26.5	24.0	25.0	25.6	21.0	22.0	23.2	18.4	20.0	21.5	14.6	17.4	19.5	21.3	22.8	24.0
28	15.3	17.8	19.8	18.6	20.7	22.6	21.5	23.0	24.4	23.1	24.8	26.3	24.2	25.3	26.6	24.5	25.2	26.2	24.8	25.6	26.5	24.6	25.7	26.9	24.1	25.0	25.5	20.4	22.0	23.2	18.3	19.8	21.3	14.8	17.2	19.2	21.2	22.7	24.0
29	15.5	18.0	20.3	18.3	20.6	22.8	21.5	23.2	24.6	24.1	25.1	26.3	24.3	25.4	26.6	24.5	25.4	26.3	24.6	25.4	26.2	25.0	25.8	26.7	23.7	24.7	25.4	20.8	22.1	23.1	17.5	19.4	21.0	15.0	17.2	19.1	21.2	22.7	24.0
30	15.9	18.5	20.6				21.9	23.5	25.0	23.7	25.0	26.4	24.6	25.6	26.7	24.6	25.5	26.5	24.5	25.5	26.5	24.3	25.2	26.0	23.4	24.5	25.2	20.3	21.7	22.9	17.2	18.9	20.5	14.9	17.5	19.8	21.4	22.9	24.2
31	16.0	18.6	20.6				22.0	23.3	24.6				24.8	25.8	27.0				24.8	25.2	25.9	24.6	25.3	26.2				20.1	21.4	22.6				15.7	18.0	20.1	21.1	22.5	23.8
Average	15.9	18.4	20.4	17.8	20.0	21.9	20.3	22.1	23.7	22.9	24.3	25.6	24.3	25.4	26.5	24.7	25.7	26.6	24.6	25.5	26.4	24.5	25.5	26.4	24.1	25.1	25.9	22.4	23.5	24.4	19.1	20.7	22.1	15.4	17.7	19.7	21.3	22.8	24.2
Extremes	7.2		26.0	9.0		25.7	8.0		29.4	14.5		28.6	19.5		29.5	21.8		28.8	21.4		29.0	21.9		29.3	19.4		28.9	14.0		28.3	7.0		26.7						

แผนภูมิความแตกต่างระหว่างอุณหภูมิกระเปาะแห้งและอุณหภูมิกระเปาะเปียก (diurnal temperatures)



สถาบันวิทยบริการ
จุฬาลงกรณ์มหาวิทยาลัย

ตารางแสดงผลข้อมูลอุณหภูมิจุดน้ำค้าง (dew point temperatures)

DEW POINT TEMPERATURES (°C) 1981 - 1998 (2524 - 2541)													Station : NONG KHAI																											
MONTH	JANUARY			FEBRUARY			MARCH			APRIL			MAY			JUNE			JULY			AUGUST			SEPTEMBER			OCTOBER			NOVEMBER			DECEMBER			ANNUAL			
DAY	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	
1	14.9	15.8	16.5	14.9	15.5	16.6	16.8	17.7	18.4	19.8	20.8	21.3	22.9	23.2	23.6	24.4	24.7	25.0	24.4	24.6	24.9	24.2	24.6	24.9	24.0	24.6	25.0	22.9	23.4	23.9	18.8	19.4	20.6	14.6	15.3	16.4	20.2	20.8	21.4	
2	15.2	16.1	17.2	14.8	15.4	16.5	16.3	16.9	17.7	19.6	20.9	21.4	22.5	23.4	23.9	24.5	24.6	25.0	24.1	24.5	25.0	24.2	24.6	25.0	24.2	24.7	25.2	22.5	23.1	23.7	18.4	19.3	20.2	14.3	15.1	16.4	20.0	20.7	21.4	
3	16.1	16.8	17.4	15.4	16.0	17.0	16.5	17.3	18.3	20.3	21.1	21.7	23.0	23.3	23.6	24.2	24.6	25.1	24.2	24.5	24.9	24.6	24.8	25.2	24.2	24.6	25.2	22.7	23.1	24.0	18.7	19.5	20.6	15.3	16.0	17.4	20.4	21.0	21.7	
4	16.4	17.0	17.8	15.8	16.3	17.2	16.8	17.5	18.5	20.7	21.3	21.5	23.1	23.4	23.8	24.5	24.8	25.0	24.1	24.5	24.9	24.3	24.7	25.1	23.9	24.4	24.8	22.5	23.1	23.7	18.6	19.5	20.3	15.7	16.3	17.3	20.5	21.1	21.7	
5	15.8	16.4	16.9	16.1	16.8	17.6	16.6	17.4	18.1	20.2	21.2	21.7	22.6	23.0	23.6	24.1	24.7	25.1	23.9	24.3	24.6	24.2	24.7	25.0	23.4	24.3	24.8	22.5	23.1	23.6	18.4	19.5	20.6	15.4	16.3	16.8	20.3	21.0	21.5	
6	15.0	15.9	16.9	16.3	16.8	17.3	16.8	17.2	18.3	20.7	21.5	22.0	22.5	22.9	23.5	24.4	24.7	24.9	24.1	24.4	24.8	24.2	24.6	25.1	24.3	24.6	25.0	22.3	23.0	23.8	18.4	19.6	20.4	14.6	15.3	16.0	20.3	20.9	21.5	
7	14.6	15.6	16.0	15.9	16.6	17.2	17.3	17.7	18.4	19.7	20.8	21.5	22.9	23.1	23.5	24.0	24.5	24.8	24.3	24.5	24.9	24.2	24.5	24.9	23.6	24.3	24.7	22.5	22.9	23.7	18.8	19.7	20.5	14.1	14.9	15.7	20.2	20.8	21.3	
8	14.4	15.0	15.7	16.0	16.7	17.6	17.4	18.1	18.9	20.2	20.9	21.3	22.9	23.3	23.8	24.0	24.7	25.1	24.3	24.5	25.0	24.1	24.4	24.8	24.2	24.5	24.9	22.3	23.0	23.5	18.5	19.3	20.1	13.3	14.7	15.6	20.1	20.8	21.4	
9	14.3	15.1	16.2	16.6	17.2	18.1	17.6	18.4	19.0	19.7	20.9	21.4	22.9	23.4	23.6	24.4	24.6	24.8	24.5	24.7	25.0	24.0	24.5	25.1	24.2	24.5	24.8	22.5	23.0	23.6	18.3	18.8	19.5	14.0	14.8	15.9	20.2	20.8	21.4	
10	14.9	15.5	16.5	16.6	17.2	17.8	18.0	18.7	19.6	20.4	21.2	21.7	23.3	23.7	24.1	24.1	24.5	25.1	24.1	24.6	25.1	24.3	24.6	25.1	24.0	24.4	24.9	22.3	22.8	23.6	17.4	18.1	19.2	14.4	15.3	16.2	20.3	20.9	21.6	
11	14.8	15.6	16.6	16.8	17.3	18.2	18.9	19.6	20.2	20.4	21.4	21.9	23.6	23.9	24.4	24.3	24.6	25.0	24.3	24.7	24.9	24.0	24.5	24.9	23.8	24.2	24.9	22.3	22.7	23.2	17.8	18.5	19.6	14.9	15.5	16.4	20.5	21.1	21.7	
12	15.3	16.1	17.2	16.8	17.5	18.5	18.7	19.6	20.6	20.5	21.5	21.9	23.8	24.1	24.7	24.2	24.7	25.1	24.0	24.5	25.0	24.0	24.5	25.0	24.1	24.4	24.9	22.4	22.8	23.8	18.1	19.0	19.9	14.8	15.5	16.5	20.6	21.2	21.9	
13	15.5	16.1	16.8	17.6	18.0	18.5	19.3	20.0	20.5	20.9	21.7	22.1	23.7	24.2	24.5	24.4	24.6	24.8	24.1	24.6	25.1	24.4	24.7	25.3	23.9	24.5	25.0	22.4	22.8	23.4	18.5	19.4	20.3	15.1	15.8	16.9	20.8	21.4	21.9	
14	14.8	15.6	16.6	17.2	18.0	18.9	18.7	19.8	20.3	21.2	21.8	22.2	23.7	24.0	24.4	24.5	24.7	25.2	24.3	24.7	25.0	24.4	24.7	25.0	24.1	24.5	24.8	22.1	22.7	23.1	18.5	19.3	20.0	15.2	15.7	16.3	20.7	21.3	21.8	
15	14.9	15.6	16.6	16.6	17.8	18.4	18.5	19.5	20.1	20.9	21.6	22.0	23.5	24.0	24.4	24.1	24.7	25.0	24.4	24.6	24.8	24.2	24.6	25.0	24.2	24.5	24.8	22.2	22.6	23.2	18.9	19.4	20.3	15.0	15.5	16.2	20.6	21.2	21.7	
16	14.8	15.5	16.3	16.9	17.7	18.2	18.4	19.3	19.7	21.2	21.8	22.5	23.9	24.0	24.2	24.7	24.9	25.2	24.0	24.5	25.0	24.3	24.7	25.1	23.5	24.0	24.6	22.6	23.1	23.7	18.7	19.6	20.4	14.5	15.1	16.0	20.6	21.2	21.7	
17	14.7	15.5	16.7	16.6	17.6	18.1	17.6	19.0	19.5	21.9	22.2	22.6	23.8	24.1	24.4	24.1	24.5	24.7	24.2	24.6	25.1	24.2	24.7	25.1	23.8	24.1	24.6	22.9	23.2	23.6	19.3	19.7	20.3	14.0	15.0	15.8	20.6	21.2	21.7	
18	15.5	16.1	17.0	16.6	17.6	18.1	17.6	18.7	19.5	21.6	22.4	22.7	23.9	24.0	24.4	24.3	24.6	25.3	24.1	24.7	25.2	24.1	24.6	25.2	23.4	24.0	24.6	22.2	22.8	23.5	18.4	18.9	19.7	14.7	15.3	16.2	20.5	21.2	21.8	
19	15.4	16.2	17.3	16.2	17.2	17.8	19.0	19.4	20.0	21.8	22.4	22.8	24.1	24.4	24.7	24.4	24.5	24.6	24.4	24.7	24.9	23.8	24.4	25.1	23.7	24.1	25.1	21.6	22.5	23.2	17.8	18.3	19.1	14.1	15.0	15.9	20.5	21.1	21.7	
20	15.4	16.1	17.2	16.2	17.5	18.1	19.3	20.0	20.8	21.9	22.4	22.9	23.9	24.2	24.6	24.4	24.7	25.1	24.4	24.7	25.2	24.0	24.5	25.1	23.6	24.1	24.8	21.2	21.9	22.6	17.2	18.1	19.0	14.2	14.9	16.1	20.5	21.1	21.8	
21	15.5	16.3	17.2	16.4	17.2	18.0	18.7	19.8	20.4	22.4	22.7	23.1	24.0	24.2	24.6	24.5	24.9	25.3	24.2	24.5	25.1	24.1	24.6	25.4	23.0	23.7	24.3	20.9	21.6	22.5	18.0	18.4	19.3	13.9	14.7	15.7	20.5	21.1	21.7	
22	15.8	16.4	17.3	15.8	16.8	17.9	18.8	20.0	20.5	21.7	22.4	22.8	24.1	24.4	24.8	24.7	24.9	25.4	24.4	24.7	25.0	24.3	24.8	25.4	23.0	23.6	24.2	20.3	21.4	22.0	17.9	18.3	19.0	14.2	14.7	15.7	20.4	21.0	21.7	
23	15.4	15.9	16.5	16.5	17.3	18.2	19.1	20.0	20.7	21.9	22.4	22.9	23.9	24.4	24.6	24.6	24.8	24.9	23.9	24.4	24.7	24.1	24.7	25.2	22.8	23.7	24.4	20.3	21.3	21.9	17.2	17.9	18.7	13.0	14.1	14.7	20.2	20.9	21.4	
24	15.1	15.7	16.6	17.0	17.7	18.5	19.6	20.3	20.8	22.4	22.6	23.1	23.8	24.3	24.7	24.2	24.7	25.2	24.1	24.5	24.9	24.1	24.6	25.1	23.0	23.8	24.5	20.3	21.0	22.1	16.3	17.3	18.1	12.9	13.6	14.7	20.2	20.8	21.5	
25	15.2	15.9	16.7	17.6	18.3	19.2	19.8	20.7	21.1	22.4	22.9	23.6	24.0	24.3	24.5	24.4	24.7	25.0	24.3	24.5	24.8	24.0	24.6	25.3	22.6	23.5	24.4	20.0	20.7	21.5	16.3	17.2	18.1	13.6	14.3	15.5	20.3	21.0	21.6	
26	15.1	15.7	16.7	18.2	18.7	19.5	19.7	20.3	20.8	22.3	23.0	23.3	24.0	24.5	24.9	24.4	24.6	25.0	24.2	24.7	25.1	24.3	24.7	25.2	22.7	23.6	24.3	19.9	20.6	21.5	16.5	17.3	18.1	13.5	14.4	15.1	20.4	21.0	21.6	
27	14.5	15.3	16.5	18.1	18.7	19.4	19.2	20.2	20.5	22.7	22.8	23.1	24.0	24.6	25.1	24.3	24.6	25.0	24.3	24.7	24.9	24.1	24.6	25.1	22.9	23.7	24.4	19.0	20.3	20.9	17.0	17.6	18.4	13.8	14.5	15.9	20.3	21.0	21.6	
28	14.3	15.2	16.2	17.4	18.0	18.8	19.8	20.5	20.9	22.3	22.9	23.7	24.1	24.5	24.9	24.1	24.3	24.5	24.5	24.7	25.0	24.3	24.8	25.6	23.0	23.8	24.4	19.6	20.2	21.1	16.7	17.3	17.9	13.8	14.5	15.5	20.3	20.9	21.5	
29	14.8	15.4	16.6	17.3	17.9	18.4	20.2	20.7	21.3	22.9	23.3	23.6	23.9	24.5	24.8	24.3	24.4	24.7	24.1	24.5	24.7	24.6	24.9	25.2	22.6	23.5	24.2	19.7	20.3	21.0	16.2	16.9	17.8	14.4	14.9	15.6	20.4	20.9	21.5	
30	15.1	15.8	16.8	20.6	20.9	21.3	22.9	23.2	23.7	24.3	24.6	24.8	24.3	24.5	25.0	24.1	24.6	25.0	24.0	24.5	25.1	22.3	23.3	24.1	18.8	19.7	20.2	15.4	16.2	16.9	14.4	15.2	16.0	20.6	21.1	21.7				
31	14.8	15.7	16.6	19.8	20.8	21.1	24.4	24.7	25.0	24.2	24.4	24.8	24.4	24.6	24.9	18.6	19.4	20.3	20.2	20.7	21.3	21.8	22.4	22.9	23.4	23.9	24.4	24.9	25.4	25.9	26.4	26.9	27.4	27.9	28.4	28.9	29.4	29.9	30.4	30.9
Average	15.1	15.8	16.7	16.6	17.3	18.1	18.4	19.2	19.9	21.2	21.9	22.4	23.6	24.0	24.3	24.3	24.6	25.0	24.2	24.6	24.9	24.2	24.6	25.1	23.5	24.1	24.7	21.4	22.1	22.8	17.8	18.6	19.4	14.4	15.1	16.0	20.4	21.0	21.6	
Extremes	2.3		23.0	2.8		23.6	1.5		26.9	9.8		26.7	16.2		28.0	19.4		27.6	20.7		27.5	21.4		2																

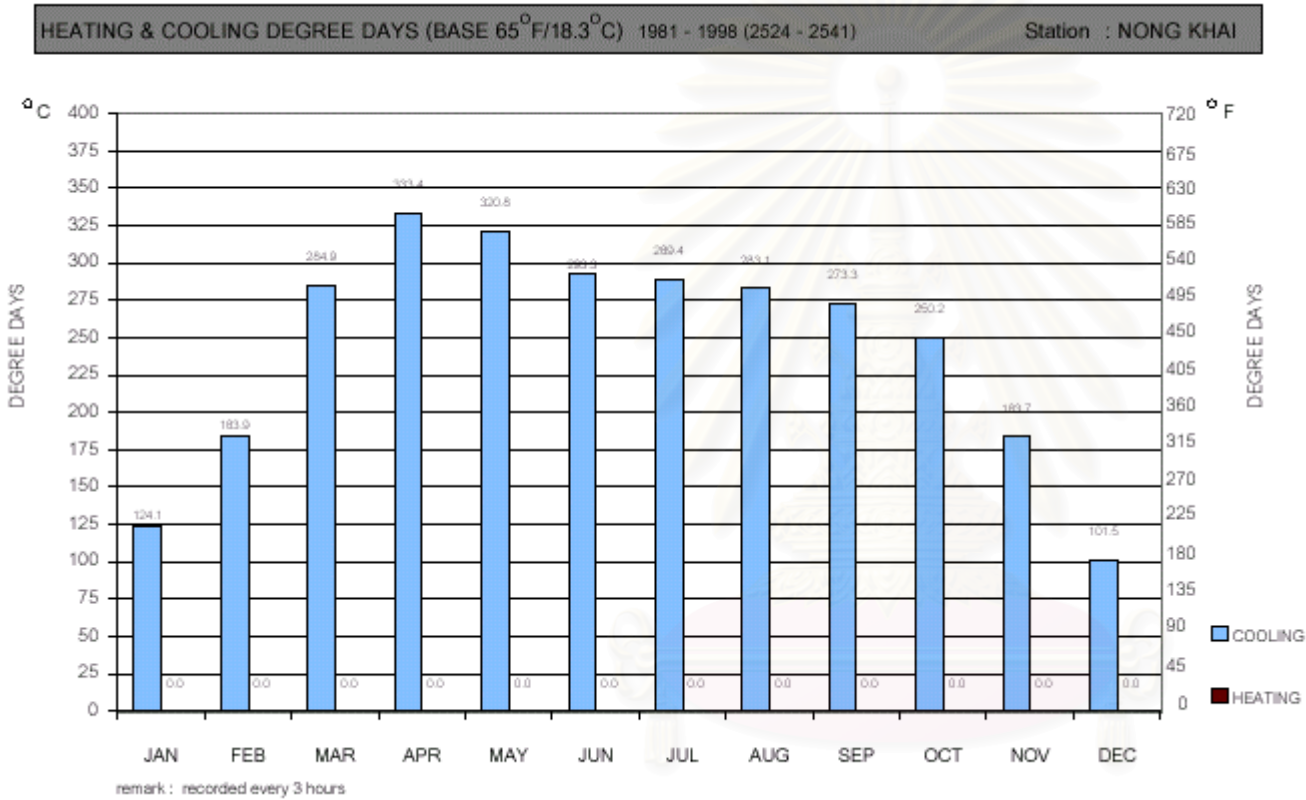
ตารางแสดงผลข้อมูลปริมาณองศาวัน การทำความร้อนและการทำความเย็น (heating and cooling degree days)

HEATING & COOLING DEGREE DAYS BASE RANGE 35 - 100 °F (1.7 - 37.8 °C) 1981 - 1998 (2524 - 2541)													Station : NONG KHAI		
MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	ANNUAL		
Degree	Cooling Heating	Cooling Heating	Cooling Heating	Cooling Heating	Cooling Heating	Cooling Heating	Cooling Heating	Cooling Heating	Cooling Heating	Cooling Heating	Cooling Heating	Cooling Heating	Cooling Heating	Cooling	Heating
°F	°C		°C		°C		°C		°C		°C		°C		
35	1.7	640.8 0.0	667.3 0.0	801.6 0.0	833.4 0.0	837.4 0.0	793.3 0.0	806.0 0.0	799.8 0.0	773.3 0.0	766.9 0.0	683.7 0.0	618.2 0.0	9,021.7	0.0
36	2.2	623.6 0.0	651.2 0.0	784.4 0.0	816.8 0.0	820.2 0.0	776.6 0.0	788.8 0.0	782.6 0.0	756.6 0.0	749.7 0.0	667.0 0.0	601.0 0.0	8,818.4	0.0
37	2.8	606.4 0.0	635.1 0.0	767.2 0.0	800.1 0.0	803.0 0.0	759.9 0.0	771.6 0.0	765.3 0.0	740.0 0.0	732.5 0.0	650.3 0.0	583.7 0.0	8,615.0	0.0
38	3.3	589.1 0.0	618.9 0.0	749.9 0.0	783.4 0.0	785.8 0.0	743.3 0.0	754.4 0.0	748.1 0.0	723.3 0.0	715.2 0.0	633.7 0.0	566.5 0.0	8,411.7	0.0
39	3.9	571.9 0.0	602.8 0.0	732.7 0.0	766.8 0.0	768.5 0.0	726.6 0.0	737.1 0.0	730.9 0.0	706.6 0.0	698.0 0.0	617.0 0.0	549.3 0.0	8,208.4	0.0
40	4.4	554.7 0.0	586.7 0.0	715.5 0.0	750.1 0.0	751.3 0.0	709.9 0.0	719.9 0.0	713.7 0.0	690.0 0.0	680.8 0.0	600.3 0.0	532.1 0.0	8,005.0	0.0
41	5.0	537.5 0.0	570.6 0.0	698.3 0.0	733.4 0.0	734.1 0.0	693.3 0.0	702.7 0.0	696.4 0.0	673.3 0.0	663.6 0.0	583.7 0.0	514.9 0.0	7,801.7	0.0
42	5.6	520.2 0.0	554.5 0.0	681.0 0.0	716.8 0.0	716.9 0.0	676.6 0.0	685.5 0.0	679.2 0.0	656.6 0.0	646.4 0.0	567.0 0.0	497.6 0.0	7,598.4	0.0
43	6.1	503.0 0.0	538.4 0.0	663.8 0.0	700.1 0.0	699.7 0.0	659.9 0.0	668.3 0.0	662.0 0.0	640.0 0.0	629.1 0.0	550.3 0.0	480.4 0.0	7,395.0	0.0
44	6.7	485.8 0.0	522.3 0.0	646.6 0.0	683.4 0.0	682.4 0.0	643.3 0.0	651.0 0.0	644.8 0.0	623.3 0.0	611.9 0.0	533.7 0.0	463.2 0.0	7,191.7	0.0
45	7.2	468.6 0.0	506.2 0.0	629.4 0.0	666.8 0.0	665.2 0.0	626.6 0.0	633.8 0.0	627.6 0.0	606.6 0.0	594.7 0.0	517.0 0.0	446.0 0.0	6,988.4	0.0
46	7.8	451.4 0.0	490.1 0.0	612.2 0.0	650.1 0.0	648.0 0.0	609.9 0.0	616.6 0.0	610.3 0.0	590.0 0.0	577.5 0.0	500.3 0.0	428.7 0.0	6,785.0	0.0
47	8.3	434.1 0.0	473.9 0.0	594.9 0.0	633.4 0.0	630.8 0.0	593.3 0.0	599.4 0.0	593.1 0.0	573.3 0.0	560.2 0.0	483.7 0.0	411.5 0.0	6,581.7	0.0
48	8.9	416.9 0.0	457.8 0.0	577.7 0.0	616.8 0.0	613.5 0.0	576.6 0.0	582.1 0.0	575.9 0.0	556.6 0.0	543.0 0.0	467.0 0.0	394.3 0.0	6,378.4	0.0
49	9.4	399.7 0.0	441.7 0.0	560.5 0.0	600.1 0.0	596.3 0.0	559.9 0.0	564.9 0.0	558.7 0.0	540.0 0.0	525.8 0.0	450.3 0.0	377.1 0.0	6,175.0	0.0
50	10.0	382.5 0.0	425.6 0.0	543.3 0.0	583.4 0.0	579.1 0.0	543.3 0.0	547.7 0.0	541.4 0.0	523.3 0.0	508.6 0.0	433.7 0.0	359.9 0.0	5,971.7	0.0
51	10.6	365.2 0.0	409.5 0.0	526.0 0.0	566.8 0.0	561.9 0.0	526.6 0.0	530.5 0.0	524.2 0.0	506.6 0.0	491.4 0.0	417.0 0.0	342.6 0.0	5,768.4	0.0
52	11.1	348.0 0.0	393.4 0.0	508.8 0.0	550.1 0.0	544.7 0.0	509.9 0.0	513.3 0.0	507.0 0.0	490.0 0.0	474.1 0.0	400.3 0.0	325.4 0.0	5,565.0	0.0
53	11.7	330.8 0.0	377.3 0.0	491.6 0.0	533.4 0.0	527.4 0.0	493.3 0.0	496.0 0.0	489.8 0.0	473.3 0.0	456.9 0.0	383.7 0.0	308.2 0.0	5,361.7	0.0
54	12.2	313.6 0.0	361.2 0.0	474.4 0.0	516.8 0.0	510.2 0.0	476.6 0.0	478.8 0.0	472.6 0.0	456.6 0.0	439.7 0.0	367.0 0.0	291.0 0.0	5,158.4	0.0
55	12.8	296.4 0.0	345.1 0.0	457.2 0.0	500.1 0.0	493.0 0.0	459.9 0.0	461.6 0.0	455.3 0.0	440.0 0.0	422.5 0.0	350.3 0.0	273.7 0.0	4,955.0	0.0
56	13.3	279.1 0.0	328.9 0.0	439.9 0.0	483.4 0.0	475.8 0.0	443.3 0.0	444.4 0.0	438.1 0.0	423.3 0.0	405.2 0.0	333.7 0.0	256.5 0.0	4,751.7	0.0
57	13.9	261.9 0.0	312.8 0.0	422.7 0.0	466.8 0.0	458.5 0.0	426.6 0.0	427.1 0.0	420.9 0.0	406.6 0.0	388.0 0.0	317.0 0.0	239.3 0.0	4,548.4	0.0
58	14.4	244.7 0.0	296.7 0.0	405.5 0.0	450.1 0.0	441.3 0.0	409.9 0.0	409.9 0.0	403.7 0.0	390.0 0.0	370.8 0.0	300.3 0.0	222.1 0.0	4,345.0	0.0
59	15.0	227.5 0.0	280.6 0.0	388.3 0.0	433.4 0.0	424.1 0.0	393.3 0.0	392.7 0.0	386.4 0.0	373.3 0.0	353.6 0.0	283.7 0.0	204.9 0.0	4,141.7	0.0
60	15.6	210.2 0.0	264.5 0.0	371.0 0.0	416.8 0.0	406.9 0.0	376.6 0.0	375.5 0.0	369.2 0.0	356.6 0.0	336.4 0.0	267.0 0.0	187.6 0.0	3,938.4	0.0
61	16.1	193.0 0.0	248.4 0.0	353.8 0.0	400.1 0.0	389.7 0.0	359.9 0.0	358.3 0.0	352.0 0.0	340.0 0.0	319.1 0.0	250.3 0.0	170.4 0.0	3,735.0	0.0
62	16.7	175.8 0.0	232.3 0.0	336.6 0.0	383.4 0.0	372.4 0.0	343.3 0.0	341.0 0.0	334.8 0.0	323.3 0.0	301.9 0.0	233.7 0.0	153.2 0.0	3,531.7	0.0
63	17.2	158.6 0.0	216.2 0.0	319.4 0.0	366.8 0.0	355.2 0.0	326.6 0.0	323.8 0.0	317.6 0.0	306.6 0.0	284.7 0.0	217.0 0.0	136.0 0.0	3,328.4	0.0
64	17.8	141.4 0.0	200.1 0.0	302.2 0.0	350.1 0.0	338.0 0.0	309.9 0.0	306.6 0.0	300.3 0.0	290.0 0.0	267.5 0.0	200.3 0.0	118.7 0.0	3,125.0	0.0
65	18.3	124.1 0.0	183.9 0.0	284.9 0.0	333.4 0.0	320.8 0.0	293.3 0.0	289.4 0.0	283.1 0.0	273.3 0.0	250.2 0.0	183.7 0.0	101.5 0.0	2,921.7	0.0
66	18.9	106.9 0.0	167.8 0.0	267.7 0.0	316.8 0.0	303.5 0.0	276.6 0.0	272.1 0.0	265.9 0.0	256.6 0.0	233.0 0.0	167.0 0.0	84.3 0.0	2,718.4	0.0
67	19.4	89.7 0.0	151.7 0.0	250.5 0.0	300.1 0.0	286.3 0.0	259.9 0.0	254.9 0.0	248.7 0.0	240.0 0.0	215.8 0.0	150.3 0.0	67.1 0.0	2,515.0	0.0
68	20.0	72.5 0.0	135.6 0.0	233.3 0.0	283.4 0.0	269.1 0.0	243.3 0.0	237.7 0.0	231.4 0.0	223.3 0.0	198.6 0.0	133.7 0.0	49.9 0.0	2,311.7	0.0

HEATING & COOLING DEGREE DAYS BASE RANGE 35 - 100 °F (1.7 - 37.8 °C) 1981 - 1998 (2524 - 2541)															Station : NONG KHAI												
MONTH		JANUARY		FEBRUARY		MARCH		APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER		OCTOBER		NOVEMBER		DECEMBER		ANNUAL	
Degree		Cooling Heating		Cooling Heating		Cooling Heating		Cooling Heating		Cooling Heating		Cooling Heating		Cooling Heating		Cooling Heating		Cooling Heating		Cooling Heating		Cooling Heating		Cooling Heating		Cooling Heating	
°F	°C																										
69	20.6	55.2	0.0	119.5	0.0	216.0	0.0	266.8	0.0	251.9	0.0	226.6	0.0	220.5	0.0	214.2	0.0	206.6	0.0	181.4	0.0	117.0	0.0	32.9	-0.2	2,108.6	-0.2
70	21.1	38.0	0.0	103.4	0.0	198.8	0.0	250.1	0.0	234.7	0.0	209.9	0.0	203.3	0.0	197.0	0.0	190.0	0.0	164.1	0.0	100.3	0.0	17.5	-2.1	1,907.2	-2.1
71	21.7	20.8	0.0	87.3	0.0	181.6	0.0	233.4	0.0	217.4	0.0	193.3	0.0	186.0	0.0	179.8	0.0	173.3	0.0	146.9	0.0	83.7	0.0	5.5	-7.3	1,709.0	-7.3
72	22.2	6.9	-3.3	71.2	0.0	164.4	0.0	216.8	0.0	200.2	0.0	176.6	0.0	168.8	0.0	162.6	0.0	156.6	0.0	129.7	0.0	67.0	0.0	1.0	-20.0	1,521.7	-23.3
73	22.8	0.8	-14.5	55.1	0.0	147.2	0.0	200.1	0.0	183.0	0.0	159.9	0.0	151.6	0.0	145.3	0.0	140.0	0.0	112.5	0.0	50.3	0.0	0.0	-36.3	1,345.7	-50.7
74	23.3	0.0	-30.9	39.3	-0.3	129.9	0.0	183.4	0.0	165.8	0.0	143.3	0.0	134.4	0.0	128.1	0.0	123.3	0.0	95.2	0.0	34.1	-0.4	0.0	-53.5	1,176.8	-85.1
75	23.9	0.0	-48.1	25.9	-3.0	112.7	0.0	166.8	0.0	148.5	0.0	126.6	0.0	117.1	0.0	110.9	0.0	106.6	0.0	78.0	0.0	19.4	-2.4	0.0	-70.7	1,012.6	-124.2
76	24.4	0.0	-65.3	14.6	-7.8	95.5	0.0	150.1	0.0	131.3	0.0	109.9	0.0	99.9	0.0	93.7	0.0	90.0	0.0	60.8	0.0	8.3	-7.9	0.0	-87.9	854.0	-169.0
77	25.0	0.0	-82.5	5.4	-14.8	78.7	-0.4	133.4	0.0	114.1	0.0	93.3	0.0	82.7	0.0	76.4	0.0	73.3	0.0	43.6	0.0	1.2	-17.6	0.0	-105.1	702.2	-220.5
78	25.6	0.0	-99.8	0.4	-25.9	63.6	-2.6	116.8	0.0	96.9	0.0	76.6	0.0	65.5	0.0	59.2	0.0	56.6	0.0	27.0	-0.7	0.0	-33.0	0.0	-122.4	562.6	-284.2
79	26.1	0.0	-117.0	0.0	-41.6	49.7	-5.9	100.1	0.0	79.7	0.0	59.9	0.0	48.3	0.0	42.0	0.0	40.0	0.0	13.7	-4.6	0.0	-49.7	0.0	-139.6	433.4	-358.4
80	26.7	0.0	-134.2	0.0	-57.7	36.9	-10.3	83.4	0.0	62.4	0.0	43.3	0.0	31.0	0.0	24.8	0.0	23.3	0.0	3.1	-11.2	0.0	-66.3	0.0	-156.8	308.2	-436.5
81	27.2	0.0	-151.4	0.0	-73.8	24.4	-15.0	66.8	0.0	45.2	0.0	26.6	0.0	14.2	-0.4	8.5	-0.9	7.1	-0.5	0.0	-25.4	0.0	-83.0	0.0	-174.0	192.9	-524.5
82	27.8	0.0	-168.6	0.0	-89.9	12.6	-20.5	50.1	0.0	28.8	-0.8	10.6	-0.7	1.7	-5.1	0.7	-10.4	0.1	-10.1	0.0	-42.5	0.0	-99.7	0.0	-191.3	104.7	-639.6
83	28.3	0.0	-185.9	0.0	-106.1	3.8	-28.9	33.4	0.0	14.2	-3.4	1.9	-8.6	0.0	-20.6	0.0	-26.9	0.0	-26.7	0.0	-59.8	0.0	-116.3	0.0	-208.5	53.3	-791.6
84	28.9	0.0	-203.1	0.0	-122.2	0.1	-42.4	16.9	-0.1	5.4	-11.8	0.0	-23.4	0.0	-37.9	0.0	-44.1	0.0	-43.4	0.0	-77.0	0.0	-133.0	0.0	-225.7	22.4	-964.0
85	29.4	0.0	-220.3	0.0	-138.3	0.0	-59.5	4.7	-4.6	1.2	-24.9	0.0	-40.1	0.0	-55.1	0.0	-61.3	0.0	-60.0	0.0	-94.2	0.0	-149.7	0.0	-242.9	5.8	-1,150.8
86	30.0	0.0	-237.5	0.0	-154.4	0.0	-76.7	0.7	-17.3	0.2	-41.1	0.0	-56.7	0.0	-72.3	0.0	-78.6	0.0	-76.7	0.0	-111.4	0.0	-166.3	0.0	-260.1	0.9	-1,349.2
87	30.6	0.0	-254.8	0.0	-170.5	0.0	-94.0	0.0	-33.2	0.0	-58.1	0.0	-73.4	0.0	-89.5	0.0	-95.8	0.0	-93.4	0.0	-128.6	0.0	-183.0	0.0	-277.4	0.0	-1,551.6
88	31.1	0.0	-272.0	0.0	-186.6	0.0	-111.2	0.0	-49.9	0.0	-75.3	0.0	-90.1	0.0	-106.7	0.0	-113.0	0.0	-110.0	0.0	-145.9	0.0	-199.7	0.0	-294.6	0.0	-1,755.0
89	31.7	0.0	-289.2	0.0	-202.7	0.0	-128.4	0.0	-66.6	0.0	-92.6	0.0	-106.7	0.0	-124.0	0.0	-130.2	0.0	-126.7	0.0	-163.1	0.0	-216.3	0.0	-311.8	0.0	-1,958.3
90	32.2	0.0	-306.4	0.0	-218.8	0.0	-145.6	0.0	-83.2	0.0	-109.8	0.0	-123.4	0.0	-141.2	0.0	-147.4	0.0	-143.4	0.0	-180.3	0.0	-233.0	0.0	-329.0	0.0	-2,161.6
91	32.8	0.0	-323.6	0.0	-234.9	0.0	-162.8	0.0	-99.9	0.0	-127.0	0.0	-140.1	0.0	-158.4	0.0	-164.7	0.0	-160.0	0.0	-197.5	0.0	-249.7	0.0	-346.3	0.0	-2,365.0
92	33.3	0.0	-340.9	0.0	-251.1	0.0	-180.1	0.0	-116.6	0.0	-144.2	0.0	-156.7	0.0	-175.6	0.0	-181.9	0.0	-176.7	0.0	-214.8	0.0	-266.3	0.0	-363.5	0.0	-2,568.3
93	33.9	0.0	-358.1	0.0	-267.2	0.0	-197.3	0.0	-133.2	0.0	-161.5	0.0	-173.4	0.0	-192.9	0.0	-199.1	0.0	-193.4	0.0	-232.0	0.0	-283.0	0.0	-380.7	0.0	-2,771.6
94	34.4	0.0	-375.3	0.0	-283.3	0.0	-214.5	0.0	-149.9	0.0	-178.7	0.0	-190.1	0.0	-210.1	0.0	-216.3	0.0	-210.0	0.0	-249.2	0.0	-299.7	0.0	-397.9	0.0	-2,975.0
95	35.0	0.0	-392.5	0.0	-299.4	0.0	-231.7	0.0	-166.6	0.0	-195.9	0.0	-206.7	0.0	-227.3	0.0	-233.6	0.0	-226.7	0.0	-266.4	0.0	-316.3	0.0	-415.1	0.0	-3,178.3
96	35.6	0.0	-409.8	0.0	-315.5	0.0	-249.0	0.0	-183.2	0.0	-213.1	0.0	-223.4	0.0	-244.5	0.0	-250.8	0.0	-243.4	0.0	-283.6	0.0	-333.0	0.0	-432.4	0.0	-3,381.6
97	36.1	0.0	-427.0	0.0	-331.6	0.0	-266.2	0.0	-199.9	0.0	-230.3	0.0	-240.1	0.0	-261.7	0.0	-268.0	0.0	-260.0	0.0	-300.9	0.0	-349.7	0.0	-449.6	0.0	-3,585.0
98	36.7	0.0	-444.2	0.0	-347.7	0.0	-283.4	0.0	-216.6	0.0	-247.6	0.0	-256.7	0.0	-279.0	0.0	-285.2	0.0	-276.7	0.0	-318.1	0.0	-366.3	0.0	-466.8	0.0	-3,788.3
99	37.2	0.0	-461.4	0.0	-363.8	0.0	-300.6	0.0	-233.2	0.0	-264.8	0.0	-273.4	0.0	-296.2	0.0	-302.4	0.0	-293.4	0.0	-335.3	0.0	-383.0	0.0	-484.0	0.0	-3,991.6
100	37.8	0.0	-478.6	0.0	-379.9	0.0	-317.8	0.0	-249.9	0.0	-282.0	0.0	-290.1	0.0	-313.4	0.0	-319.7	0.0	-310.0	0.0	-352.5	0.0	-399.7	0.0	-501.3	0.0	-4,195.0

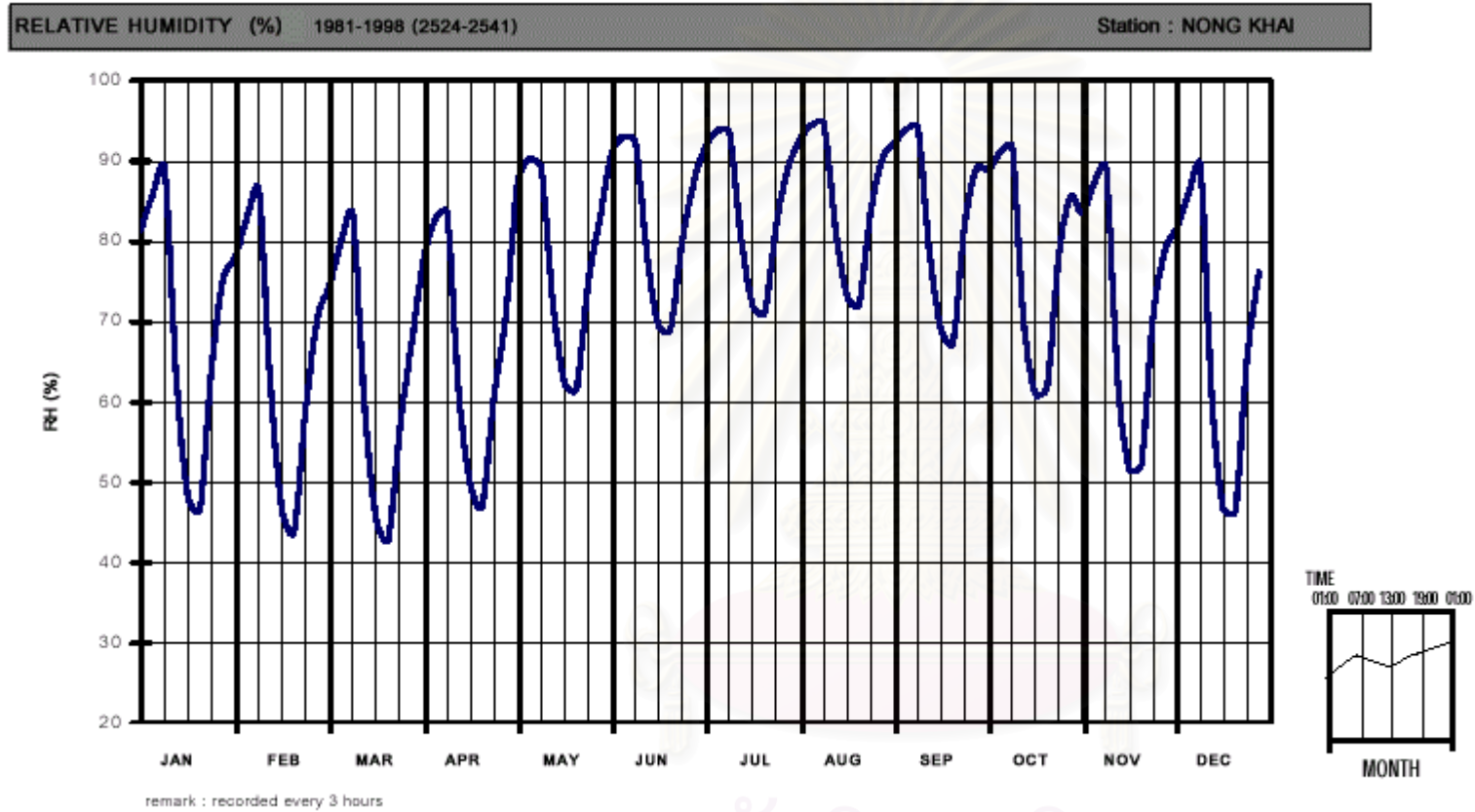
สถาบันวิทยบริการ
จุฬาลงกรณ์มหาวิทยาลัย

แผนภูมิปริมาณองศาวัน การทำความร้อนและการทำความเย็น (heating and cooling degree days)



สถาบันวิทยบริการ
จุฬาลงกรณ์มหาวิทยาลัย

แผนภูมิความชื้นสัมพัทธ์ (relative humidity)



สถาบันวิทยบริการ
จุฬาลงกรณ์มหาวิทยาลัย

ตารางแสดงผลข้อมูลจำแนกความถี่ของลม ในแต่ละความเร็วและทิศทาง ที่เกิดลมรายเดือน
(monthly frequency distribution of wind in each speed and direction)

MONTHLY FREQUENCY DISTRIBUTION OF WIND IN EACH SPEED AND DIRECTION 1981 - 1998 (2524 - 2541)												Station : NONG KHAI																														
January			N	NE	E	SE	S	SW	W	NW	Calm	Total	February			N	NE	E	SE	S	SW	W	NW	Calm	Total	March			N	NE	E	SE	S	SW	W	NW	Calm	Total				
kts	km/h	m/s										67.7	67.7	kts	km/h	m/s										65.1	65.1	kts	km/h	m/s											64.8	64.8
1-3	2-6	0.6-1.5	2.8	7.7	7	1.7	0.5	0.3	0.8	1.1		21.9	1-3	2-6	0.6-1.5	2.4	6.5	6.6	1.7	0.6	0.9	1.2	1.8		21.7	1-3	2-6	0.6-1.5	1.5	5	5.6	2.3	1.4	1.8	2.1	1.9		21.6				
4-16	7-30	1.6-8.5	0.8	4.1	4.1	1	0.1	0	0.2	0.1		10.4	4-16	7-30	1.6-8.5	0.6	3.3	6.5	1.5	0.1	0.3	0.5	0.4		13.2	4-16	7-30	1.6-8.5	0.7	3.6	5.3	1.4	0.5	0.6	0.9	0.8		13.0				
17-27	31-50	8.6-14	0	0	0	0	0	0	0	0		0	17-27	31-50	8.6-14	0	0	0	0	0	0	0	0		0	17-27	31-50	8.6-14	0	0	0	0	0	0	0	0		0				
>27	>50	>14	0	0	0	0	0	0	0	0		0	>27	>50	>14	0	0	0	0	0	0	0	0		0	>27	>50	>14	0	0	0	0	0	0	0	0		0				
Total			3.6	11.8	11.1	2.7	0.6	0.3	1	1.2		67.7	100	Total			3	9.8	13.1	3.2	0.7	1.2	1.7	2.2		65.1	100	Total			2.2	8.6	10.9	3.7	1.9	2.4	3	2.7		64.8	100	
April			N	NE	E	SE	S	SW	W	NW	Calm	Total	May			N	NE	E	SE	S	SW	W	NW	Calm	Total	June			N	NE	E	SE	S	SW	W	NW	Calm	Total				
kts	km/h	m/s										63.2	63.2	kts	km/h	m/s										67.3	67.3	kts	km/h	m/s											70.8	70.8
1-3	2-6	0.6-1.5	1.5	4.2	5.5	1.5	3	2.6	2.5	2.2		23	1-3	2-6	0.6-1.5	1.5	3.5	5	2.2	3	2.9	2.2	1.4		21.7	1-3	2-6	0.6-1.5	1	1.8	2.7	1.7	3	4.3	3.5	1.3		19.3				
4-16	7-30	1.6-8.5	0.8	3	3.5	1.7	1.2	1.2	1.3	1.1		13.0	4-16	7-30	1.6-8.5	0.9	1.7	2.3	1.6	1.3	1.2	1.2	0.7		10.9	4-16	7-30	1.6-8.5	0.3	0.3	0.8	0.8	1.5	2.6	3	0.6		9.9				
17-27	31-50	8.6-14	0	0	0	0	0	0	0	0		0	17-27	31-50	8.6-14	0	0	0	0	0	0	0	0		0	17-27	31-50	8.6-14	0	0	0	0	0	0	0	0		0				
>27	>50	>14	0	0	0	0	0	0	0	0		0	>27	>50	>14	0	0	0	0	0	0	0	0		0	>27	>50	>14	0	0	0	0	0	0	0	0		0				
Total			2.3	7.2	9	3.2	4.2	3.8	3.5	3.3		63.2	100	Total			2.4	5.2	7.3	3.8	4.3	4.1	3.4	2.1		67.3	100	Total			1.3	2.1	3.5	2.5	4.5	6.9	6.5	1.9		70.8	100	
July			N	NE	E	SE	S	SW	W	NW	Calm	Total	August			N	NE	E	SE	S	SW	W	NW	Calm	Total	September			N	NE	E	SE	S	SW	W	NW	Calm	Total				
kts	km/h	m/s										71.5	71.5	kts	km/h	m/s										71.7	71.7	kts	km/h	m/s											75.4	75.4
1-3	2-6	0.6-1.5	0.9	1.3	1.8	1.5	3.4	4.5	3.5	1.3		18.2	1-3	2-6	0.6-1.5	0.7	1.4	2	1.1	3	3.9	4.4	1.1		17.6	1-3	2-6	0.6-1.5	1.3	3.8	3.9	1.3	1.9	1.7	1.8	1.3		17				
4-16	7-30	1.6-8.5	0.2	0.4	0.5	0.7	1.4	2.9	3.4	0.6		10.1	4-16	7-30	1.6-8.5	0.3	0.8	1	0.6	1.1	2.6	3.2	0.8		10.4	4-16	7-30	1.6-8.5	0.6	1.8	2.4	0.8	0.4	0.3	0.7	0.3		7.3				
17-27	31-50	8.6-14	0	0	0	0	0	0	0	0		0	17-27	31-50	8.6-14	0	0	0	0	0	0	0	0		0	17-27	31-50	8.6-14	0	0	0	0	0	0	0	0		0				
>27	>50	>14	0	0	0	0	0	0	0	0		0	>27	>50	>14	0	0	0	0	0	0	0	0		0	>27	>50	>14	0	0	0	0	0	0	0	0		0				
Total			1.1	1.7	2.3	2.2	4.8	7.4	6.9	1.9		71.5	100	Total			1	2.2	3	1.7	4.1	6.5	7.6	1.9		71.7	100	Total			1.9	5.6	6.3	2.1	2.3	2	2.5	1.6		75.4	100	
October			N	NE	E	SE	S	SW	W	NW	Calm	Total	November			N	NE	E	SE	S	SW	W	NW	Calm	Total	December			N	NE	E	SE	S	SW	W	NW	Calm	Total				
kts	km/h	m/s										70.4	70.4	kts	km/h	m/s										69.1	69.1	kts	km/h	m/s											67.8	67.8
1-3	2-6	0.6-1.5	1.9	6.9	5.6	1.8	0.5	0.6	0.7	0.7		18.7	1-3	2-6	0.6-1.5	3.1	8.7	4.7	1	0.2	0.1	0.5	1		19.3	1-3	2-6	0.6-1.5	4.1	9.6	3.9	0.7	0.3	0.2	0.5	1.5		20.9				
4-16	7-30	1.6-8.5	0.4	4.7	3.3	0.9	0.3	0.2	0.5	0.4		10.7	4-16	7-30	1.6-8.5	1.1	5.8	4	0.5	0	0.1	0	0.1		11.6	4-16	7-30	1.6-8.5	1	5.8	4	0.4	0	0.1	0	0		11.3				
17-27	31-50	8.6-14	0	0	0	0	0	0	0	0		0	17-27	31-50	8.6-14	0	0	0	0	0	0	0	0		0	17-27	31-50	8.6-14	0	0	0	0	0	0	0	0		0				
>27	>50	>14	0	0	0	0	0	0	0	0		0	>27	>50	>14	0	0	0	0	0	0	0	0		0	>27	>50	>14	0	0	0	0	0	0	0	0		0				
Total			2.3	11.6	8.9	2.7	0.8	0.8	1.2	1.1		70.4	100	Total			4.2	14.5	8.7	1.5	0.2	0.2	0.5	1.1		69.1	100	Total			5.1	15.4	7.9	1.1	0.3	0.3	0.5	1.5		67.8	100	

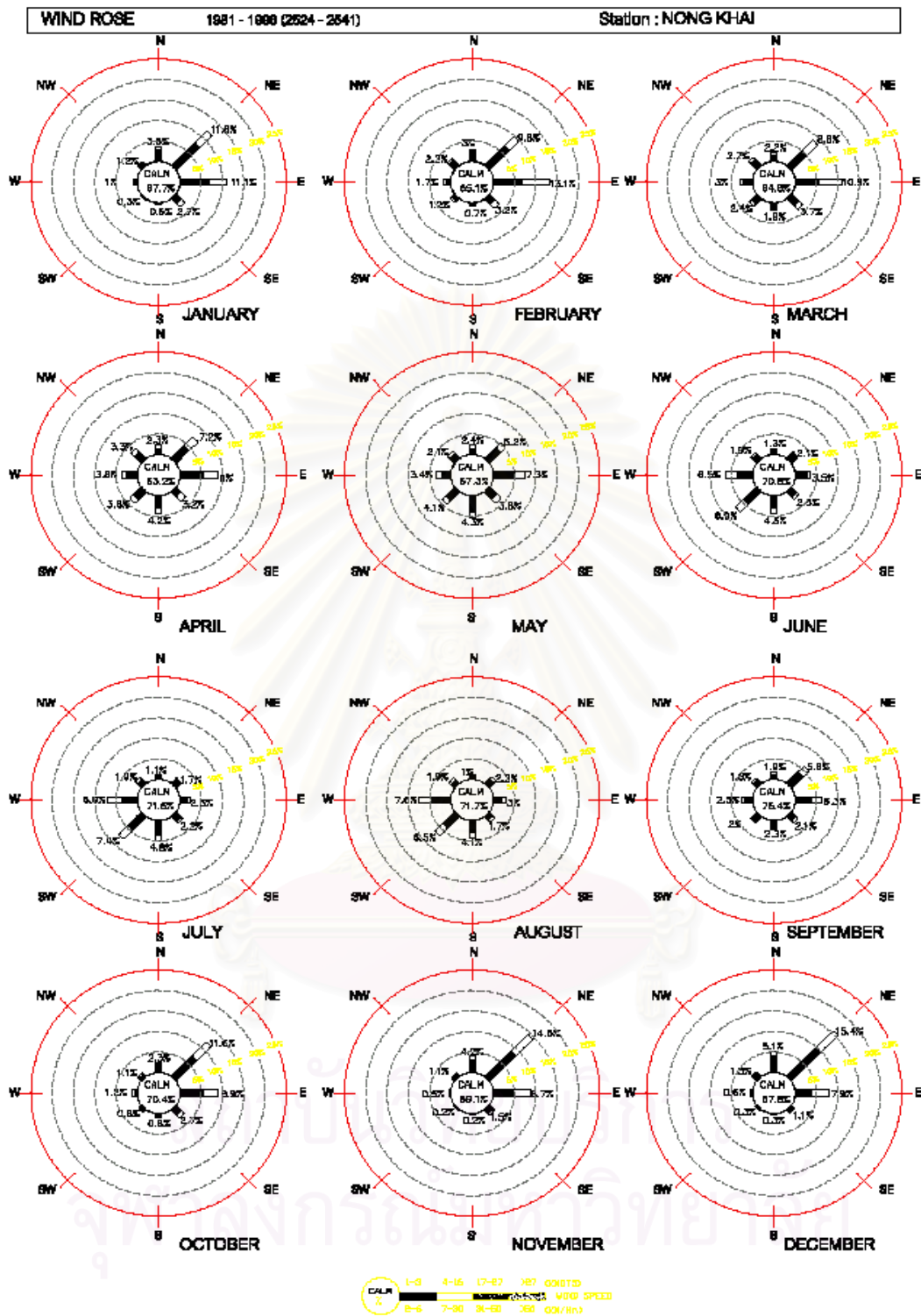
remark : kts = KNOTS

* this tabel shows the frequency of wind speed & direction in percent

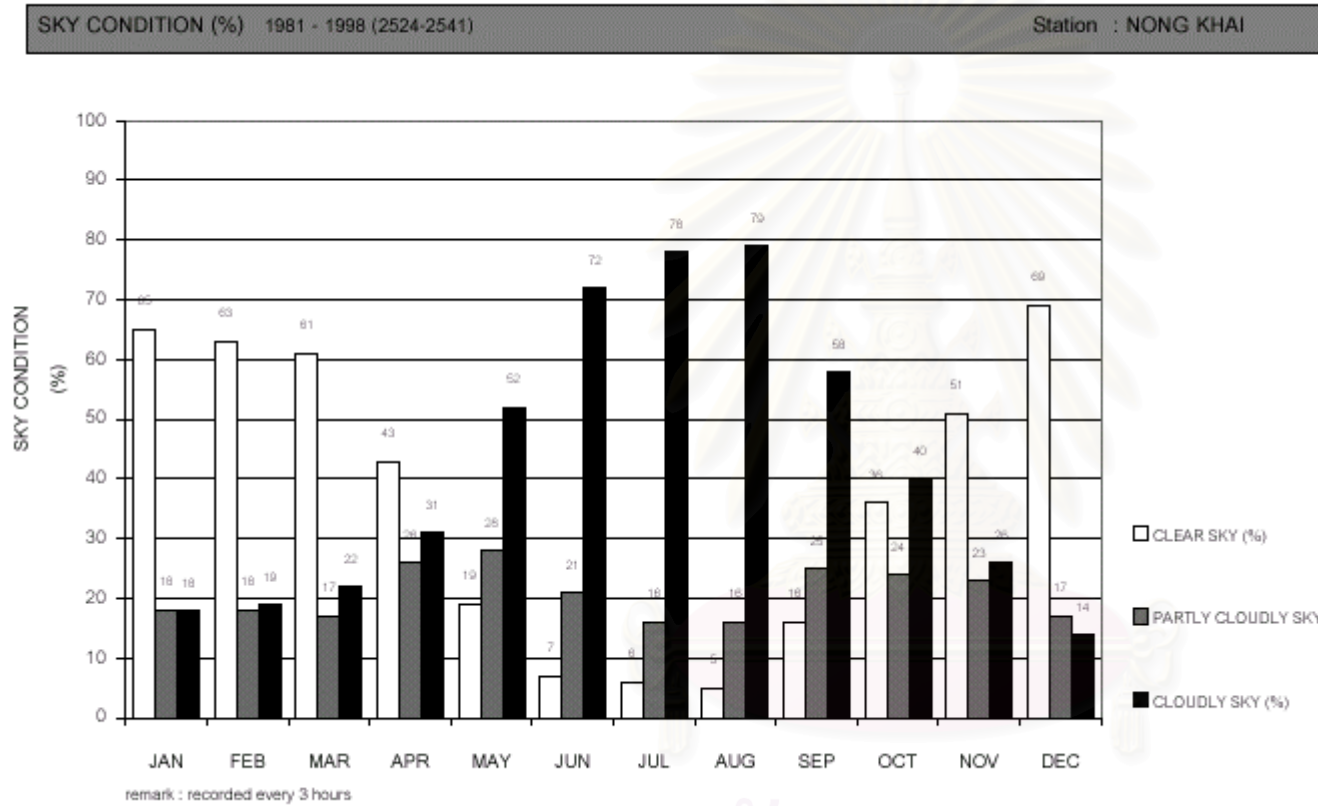
1 kts = 1.853 km/h = 0.514 m/s



แผนภูมิจำแนกความถี่ของลม ในแต่ละความเร็วและทิศทาง ที่เกิดลมรายเดือน (wind rose)



แผนภูมิสภาพท้องฟ้าและสัดส่วนเปอร์เซ็นต์สภาพท้องฟ้า (sky cover and percentage of sky condition)



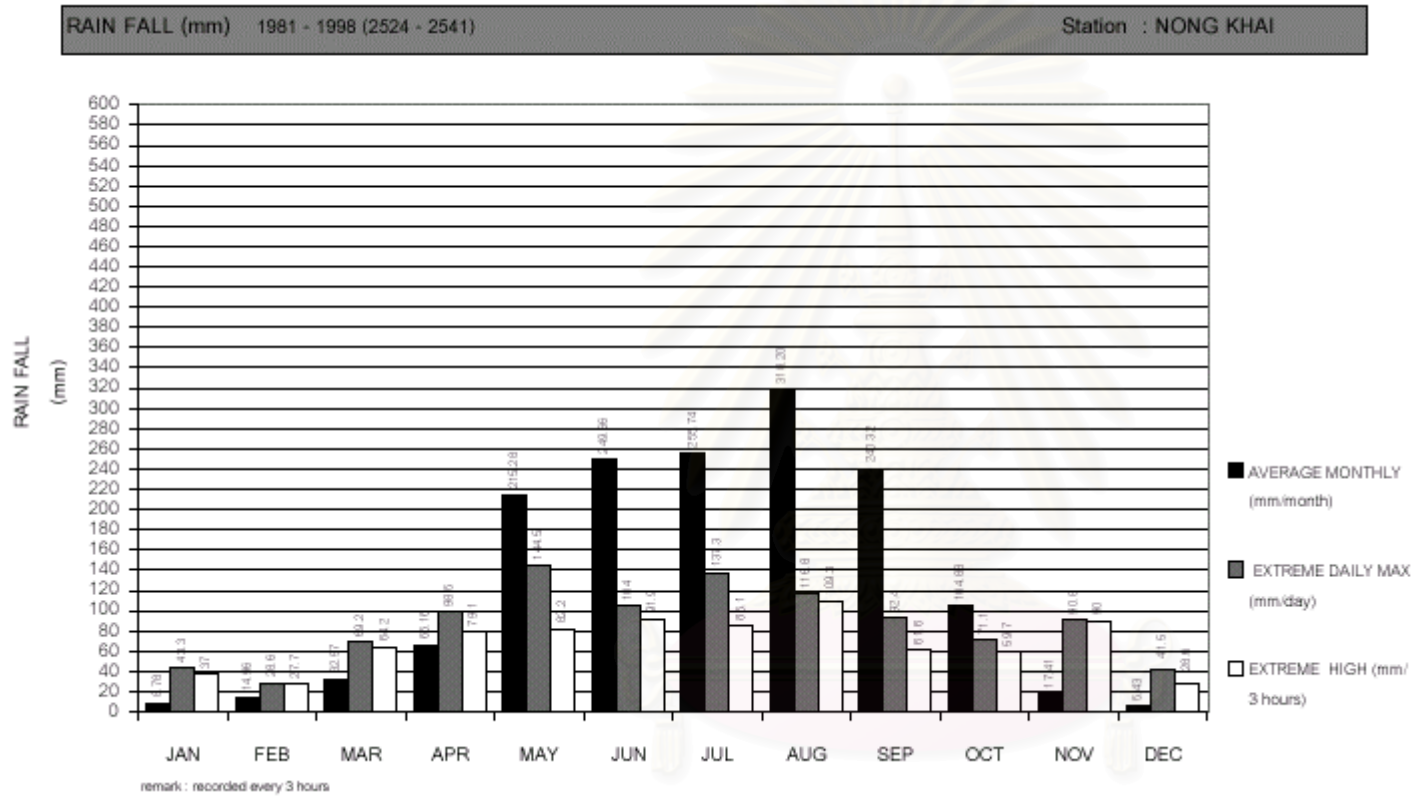
สถาบันวิทยบริการ
จุฬาลงกรณ์มหาวิทยาลัย

ตารางแสดงผลข้อมูลปริมาณน้ำฝน (rain fall)

RAIN FALL (mm) 1981 - 1998 (2524 - 2541) Station : NONG KHAI													
MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	ANNUAL
DAY	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total
1	0.1	0.0	0.0	0.3	0.4	4.7	5.0	13.7	20.4	6.4	0.0	0.1	51.0
2	0.0	0.0	0.4	1.0	0.4	18.0	7.8	9.1	15.9	6.8	0.1	0.0	59.5
3	2.6	0.0	2.2	0.0	5.9	12.2	5.5	5.7	12.1	6.1	54.6	2.4	109.4
4	0.7	0.7	0.6	1.1	3.3	10.2	9.9	14.4	4.2	6.9	1.0	0.0	53.0
5	1.1	1.0	0.7	0.8	10.0	8.9	7.2	8.9	8.3	11.1	1.3	0.0	59.4
6	1.9	0.1	0.2	0.8	1.1	16.6	6.8	15.6	7.2	5.4	0.0	0.0	55.7
7	0.2	0.0	0.0	2.5	3.9	9.5	3.7	8.2	18.8	8.9	1.1	0.7	57.5
8	0.1	0.0	0.5	3.0	3.8	7.6	3.8	11.3	15.7	4.4	0.5	0.0	50.8
9	0.0	0.0	0.5	0.7	6.1	13.5	7.1	11.1	14.0	0.7	2.7	0.0	56.4
10	0.0	1.3	1.6	0.1	6.9	9.3	10.1	13.0	6.9	0.4	0.3	0.0	49.9
11	0.0	0.2	0.2	0.0	11.0	7.1	5.3	9.2	7.3	3.5	0.4	0.0	44.2
12	0.0	0.1	0.4	4.4	2.6	6.4	18.3	9.1	3.1	5.8	0.0	0.0	50.2
13	0.0	0.1	1.2	5.4	3.8	15.6	10.4	4.8	4.8	0.8	0.2	0.0	47.0
14	0.0	0.0	4.1	1.0	8.7	8.5	10.6	8.8	5.6	2.4	2.0	0.0	51.7
15	0.0	1.9	0.5	1.8	9.4	8.4	8.7	12.3	3.7	0.7	0.1	0.0	47.4
16	0.0	1.1	0.0	0.5	6.9	6.3	15.9	11.7	8.1	2.9	0.1	0.0	53.4
17	0.0	0.0	0.0	4.0	3.8	6.0	10.4	11.9	11.7	5.1	1.7	0.0	54.6
18	0.0	0.5	0.3	1.4	6.3	3.4	4.9	7.0	9.7	5.4	0.1	0.0	39.0
19	0.0	1.4	0.0	1.2	6.5	7.2	4.4	10.6	6.2	4.7	0.0	0.0	42.2
20	0.0	2.8	1.4	3.5	6.1	3.2	6.3	5.4	7.1	0.2	0.1	0.0	36.1
21	0.0	0.3	1.2	0.2	4.6	3.0	9.2	9.1	4.8	3.7	0.4	0.0	36.4
22	0.8	0.5	0.5	1.5	15.6	4.8	13.6	8.1	9.5	0.2	0.0	0.0	55.2
23	0.0	0.1	3.0	1.7	15.1	9.2	10.8	17.8	8.8	3.8	0.0	0.0	70.2
24	0.0	0.2	1.8	1.1	12.3	7.8	7.4	18.3	7.1	0.9	0.0	0.4	57.4
25	0.6	0.3	1.4	3.8	5.9	6.5	3.9	14.7	3.4	2.8	0.0	0.5	43.7
26	0.3	0.4	1.8	1.6	7.7	10.1	10.1	16.0	5.7	0.5	0.0	0.0	54.2
27	0.2	1.3	2.5	13.9	10.4	5.4	5.3	4.0	0.5	0.1	0.0	0.0	43.8
28	0.0	0.5	2.1	1.4	15.3	6.7	4.0	1.7	3.2	0.7	0.0	0.2	35.9
29	0.0	0.0	1.5	3.3	9.1	7.3	4.1	3.8	3.9	3.7	0.0	0.9	37.4
30	0.0		0.1	3.9	8.0	6.4	7.4	13.3	2.7	0.0	0.0	0.1	42.0
31	0.0		1.8		4.2		17.8	9.8		0.1			33.7
Monthly	8.8	15.0	32.6	66.2	215.3	249.7	255.7	318.2	240.3	104.9	17.4	5.4	1,529.4
Daily record high	43.3	28.6	69.2	98.5	144.5	104.0	137.3	116.8	92.4	71.1	90.8	41.5	144.5
3 hr. Extremes	37.0	27.7	64.2	79.1	82.2	91.9	85.1	109.3	61.6	59.7	90.0	28.6	109.3
No. of rainy days	1	3	4	8	16	19	21	23	17	9	2	1	124

สถาบันวิทยบริการ
จุฬาลงกรณ์มหาวิทยาลัย

แผนภูมิปริมาณน้ำฝน (rain fall)



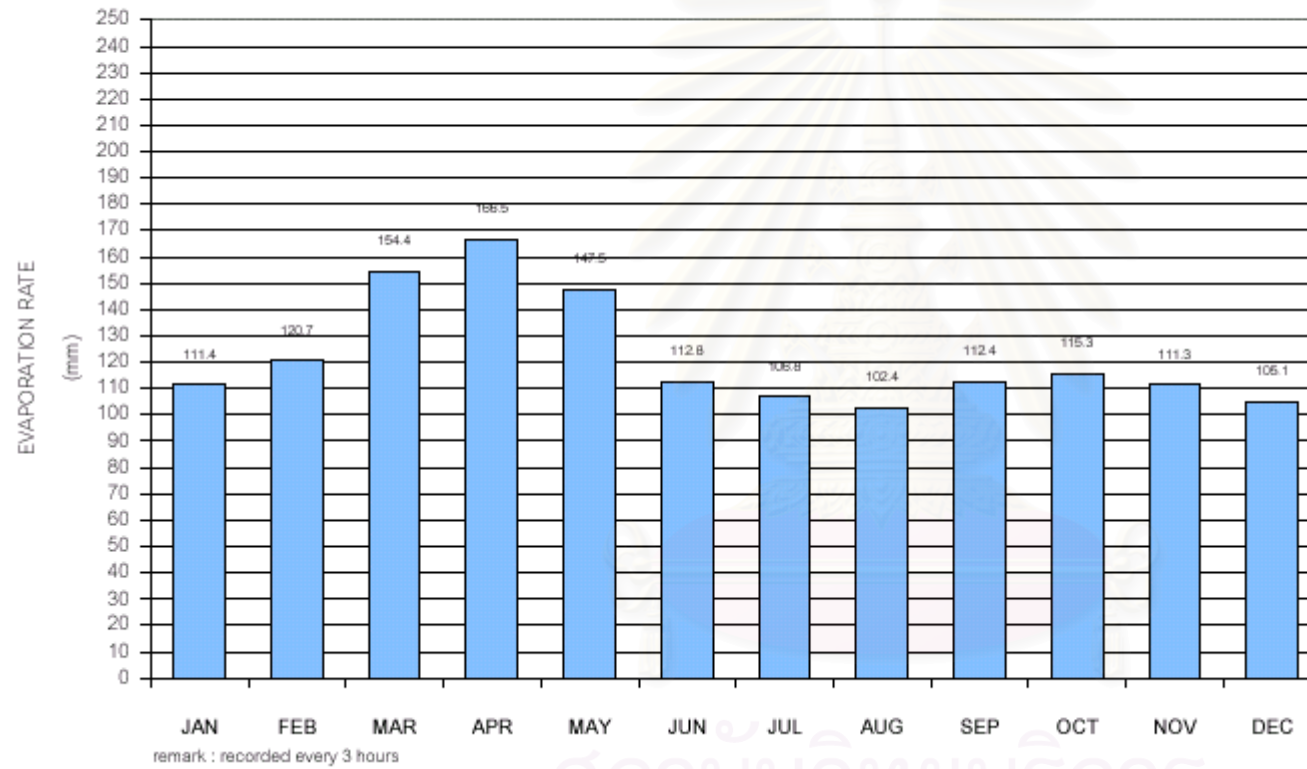
สถาบันวิทยบริการ
จุฬาลงกรณ์มหาวิทยาลัย

ตารางแสดงผลข้อมูลค่าเฉลี่ยอัตราการระเหยของน้ำรายวัน (evaporation)

EVAPORATION (mm) 1981 - 1998 (2524 - 2541)													Station : NONG KHAI
MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	ANNUAL
DAY	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total
1	3.0	4.3	5.0	5.3	5.3	4.2	3.9	3.2	3.3	3.5	4.0	3.6	48.6
2	3.4	4.2	4.7	5.6	6.0	3.7	4.2	3.2	3.4	4.2	4.0	3.3	50.1
3	3.1	3.9	4.4	5.7	6.1	3.7	3.8	3.7	3.2	3.5	3.8	3.2	48.2
4	3.1	4.2	4.9	5.0	5.6	3.9	3.3	3.3	3.3	4.0	3.7	3.3	47.4
5	3.7	3.8	4.1	4.6	5.3	4.0	3.3	3.2	3.7	3.3	3.3	3.7	46.0
6	3.3	4.2	4.1	5.3	5.5	3.9	3.5	3.4	3.6	3.5	3.8	3.9	47.9
7	3.3	4.0	4.3	6.3	5.7	3.2	3.5	3.6	3.6	3.5	3.8	3.6	48.3
8	3.7	3.9	4.6	5.5	5.1	3.5	3.6	3.4	3.2	3.8	3.8	3.6	47.7
9	3.7	3.9	4.8	5.5	5.1	3.6	4.0	3.3	3.3	3.8	3.6	3.5	48.1
10	3.6	3.9	4.6	5.7	5.0	4.1	3.4	3.5	3.6	3.8	3.5	3.3	48.0
11	3.5	3.9	4.9	5.9	4.5	3.6	3.8	3.3	3.8	4.0	3.4	3.3	47.9
12	3.7	4.0	4.6	5.8	4.9	4.2	3.6	3.4	3.6	3.5	3.7	3.3	48.4
13	3.7	3.9	4.9	5.0	4.6	3.6	3.7	3.3	3.8	3.5	3.6	3.3	47.1
14	3.6	3.8	4.9	5.9	4.5	3.4	2.5	3.0	3.6	3.7	3.6	3.8	46.2
15	3.7	4.1	4.8	5.9	4.7	3.9	2.7	3.1	3.8	3.6	3.4	3.5	47.2
16	3.4	4.1	5.3	5.6	4.6	4.1	2.8	3.0	4.2	3.2	3.5	3.3	47.1
17	3.4	4.2	5.5	5.6	4.2	4.1	3.7	3.1	4.2	3.3	3.5	3.4	48.3
18	3.4	4.2	5.5	5.9	4.6	3.6	3.4	3.4	4.1	3.7	3.7	3.7	49.2
19	4.1	4.3	5.2	6.1	4.5	3.8	3.6	3.8	3.4	3.5	4.0	3.4	49.6
20	3.9	4.3	5.2	4.8	4.3	3.8	3.8	3.4	2.8	3.7	3.9	3.4	47.2
21	3.9	4.5	5.4	5.4	4.5	4.1	3.7	3.4	4.3	4.1	3.6	3.6	50.4
22	3.7	4.5	5.2	5.5	5.2	4.1	3.6	3.2	3.8	3.4	3.5	3.5	49.2
23	3.9	4.5	5.0	5.6	4.7	3.8	3.1	3.0	3.3	3.9	4.0	3.3	47.9
24	3.5	4.1	5.8	6.1	5.0	3.8	3.2	2.6	4.0	3.9	4.2	3.4	49.6
25	3.5	4.4	5.5	5.3	4.1	3.6	3.6	3.0	4.0	3.9	3.7	3.1	47.7
26	3.9	4.0	5.6	5.8	4.5	3.8	3.6	3.2	4.3	4.1	3.3	3.3	49.5
27	3.6	4.4	5.1	5.6	3.3	3.5	3.7	3.6	4.4	3.8	3.8	3.6	48.2
28	3.3	4.9	4.9	5.4	3.8	3.0	3.5	3.8	4.0	3.7	3.8	3.0	47.2
29	3.7	4.4	5.2	5.4	4.0	3.7	3.0	3.1	4.5	4.1	3.8	2.8	47.6
30	4.0		5.2	5.4	4.1	3.6	3.4	2.7	4.2	4.0	4.0	2.7	43.4
31	4.3		5.2		4.3		2.7	3.9		3.9		3.2	27.4
AVG. Monthly	111.4	120.7	154.4	166.5	147.5	112.8	106.8	102.4	112.4	115.3	111.3	105.1	1,466.6
Daily Mean	3.6	4.2	5.0	5.6	4.8	3.8	3.4	3.3	3.7	3.7	3.7	3.4	4.0
Extremes	6.9	8.6	12.3	12.1	13.2	8.4	8.0	8.3	11.2	6.9	7.7	6.6	13.2

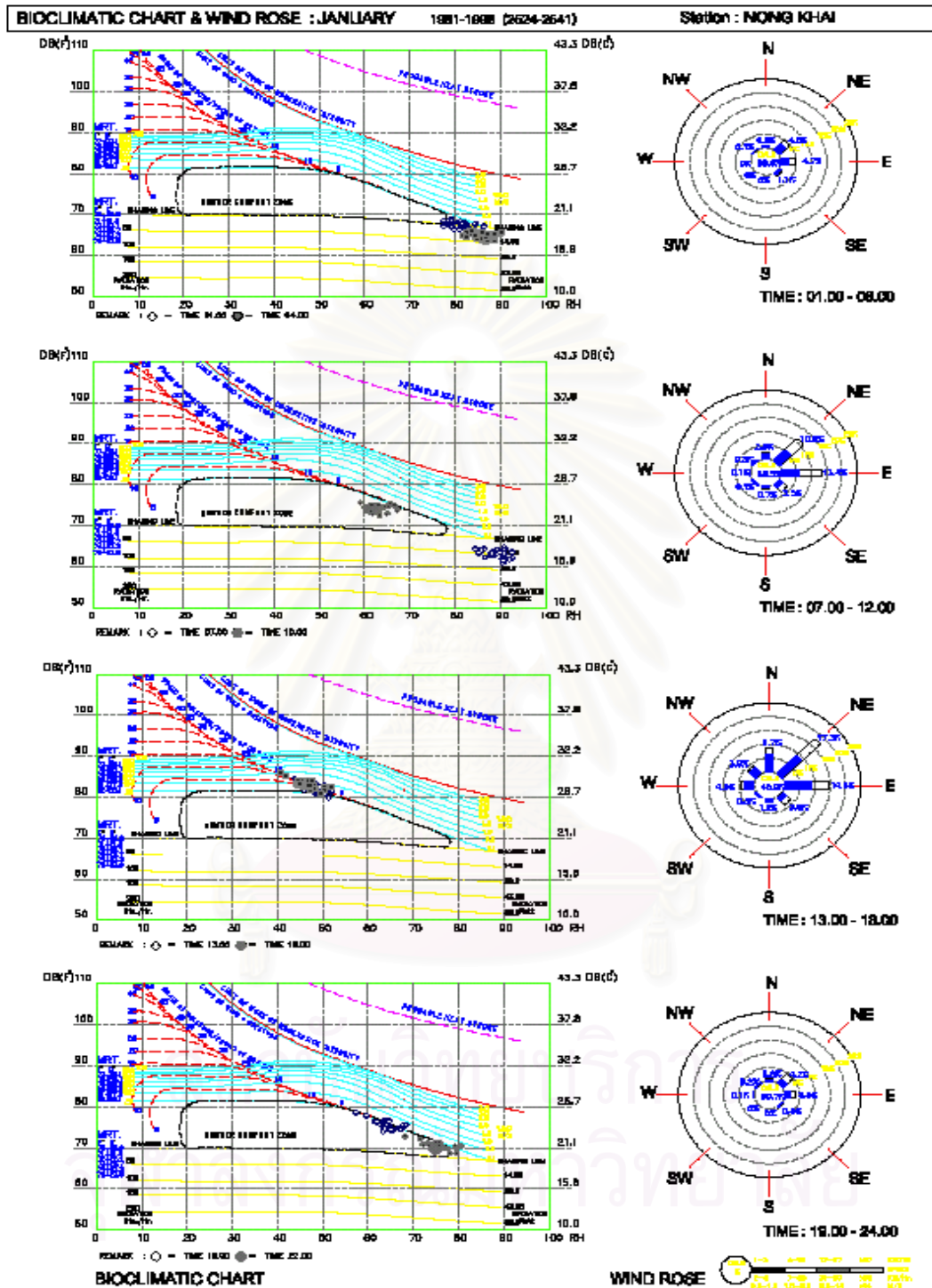
แผนภูมิค่าเฉลี่ยอัตราการระเหยของน้ำรายเดือน (average monthly evaporation from U.S. class "A" pan)

AVERAGE MONTHLY EVAPORATION (mm) from U.S. class "A" pan 1981 - 1998 (2524 - 2541) Station : NONG KHAI

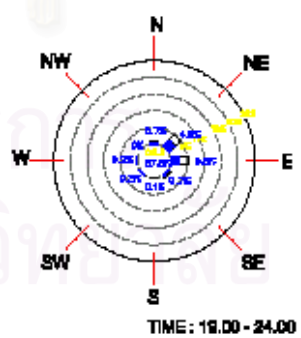
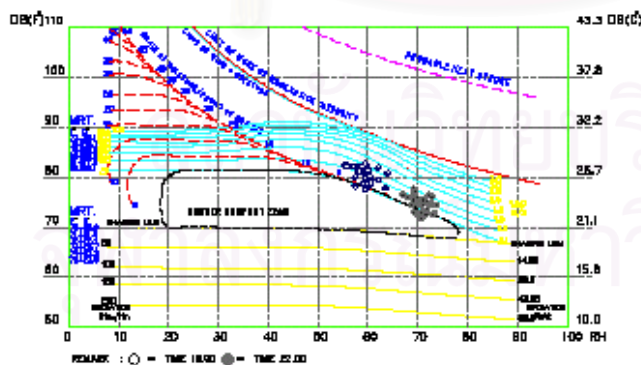
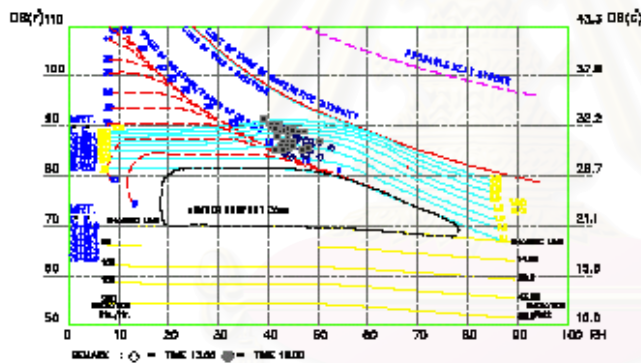
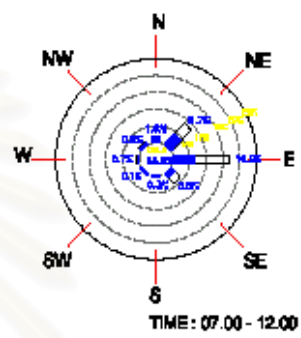
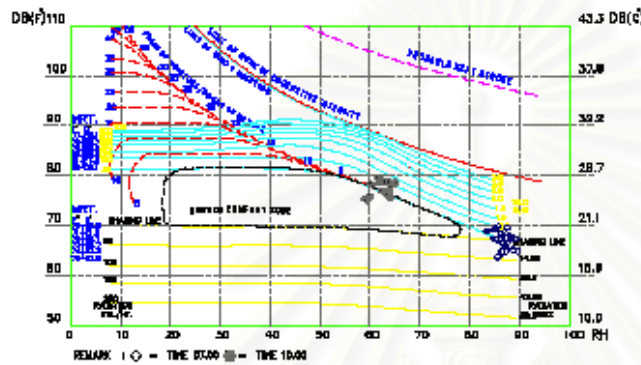
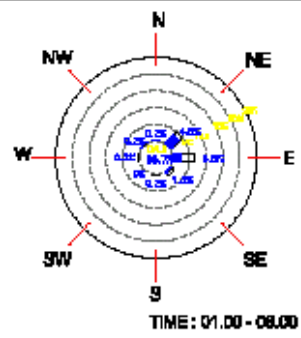
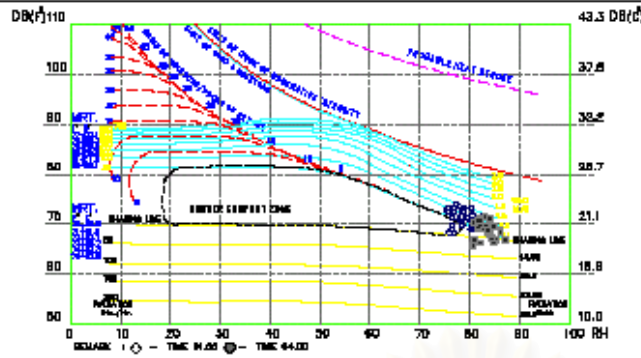


สถาบันวิทยบริการ
จุฬาลงกรณ์มหาวิทยาลัย

แผนภูมิความสัมพันธ์ระหว่างข้อมูลสภาพอากาศในแผนภูมิไบโอไคลเมตริก (bioclimatic chart) กับแผนภูมิแสดงความเร็วและทิศทางที่เกิดลมรายเดือน (wind rose) แยกตามช่วงเวลา



BIOCLIMATIC CHART & WIND ROSE : FEBRUARY 1981-1988 (2624-2641) Station : NONG KHAI

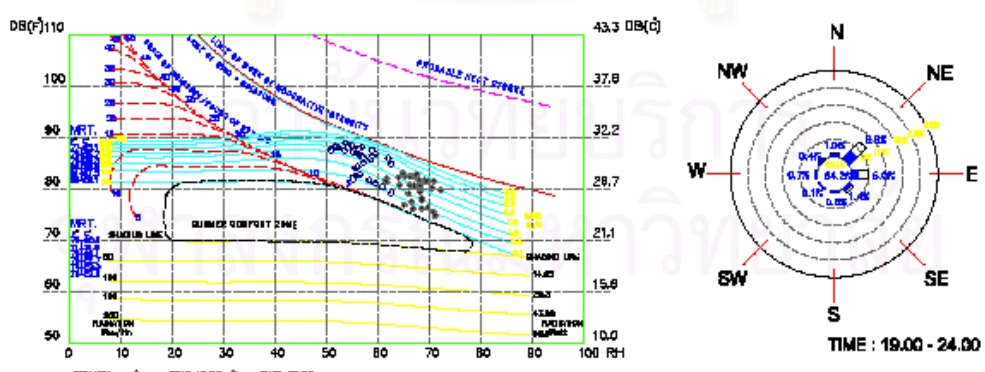
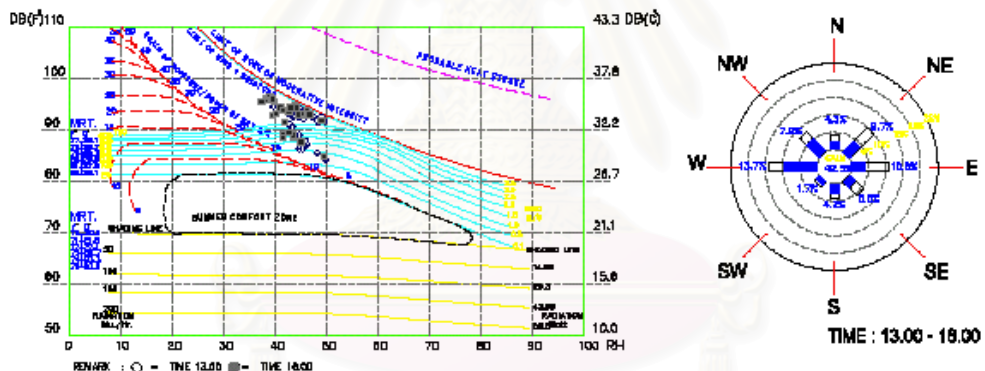
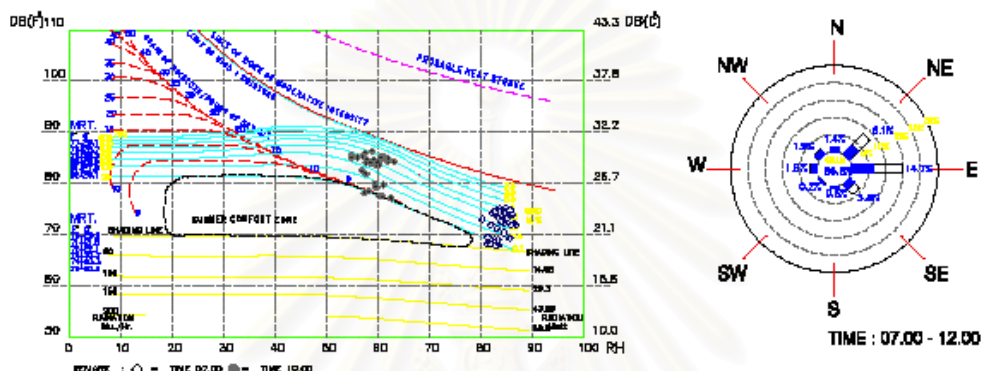
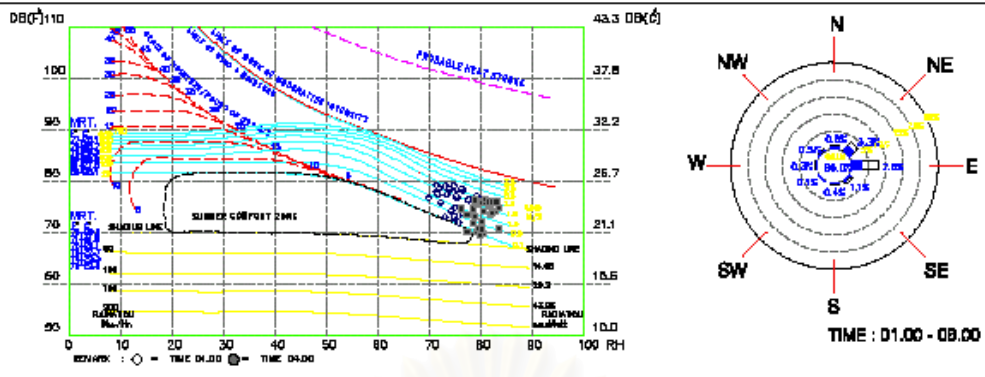


BIOCLIMATIC CHART

WIND ROSE

0.0%	0.5%	1.0%	1.5%	2.0%	2.5%	3.0%	3.5%	4.0%	4.5%	5.0%
------	------	------	------	------	------	------	------	------	------	------

BIOCLIMATIC CHART & WIND ROSE : MARCH 1961-1996 (2524-2541) Station : NONG KHAI

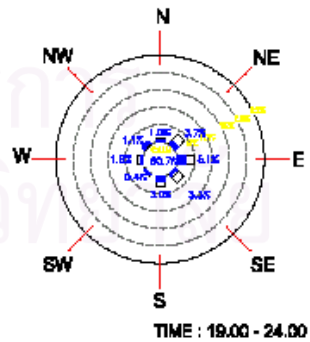
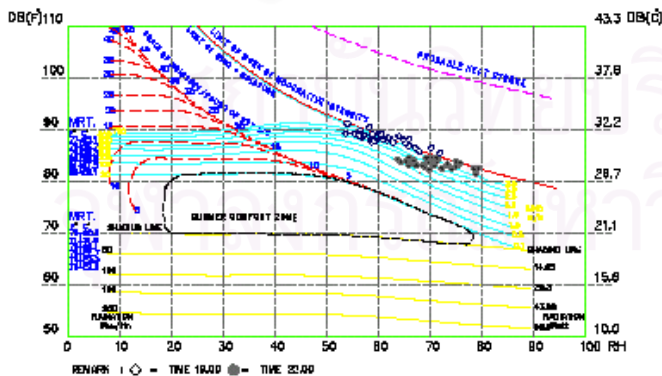
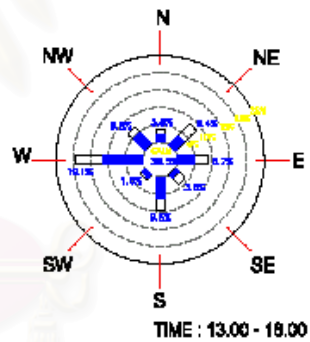
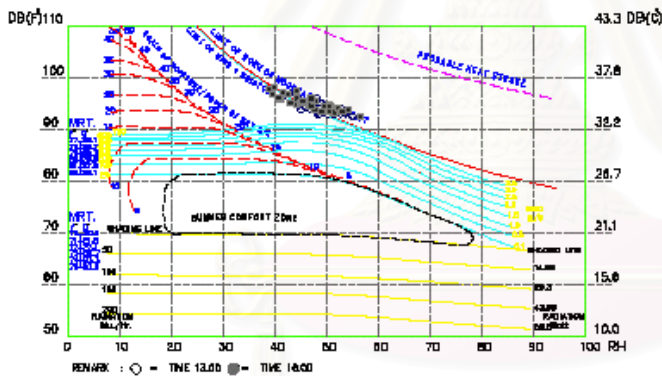
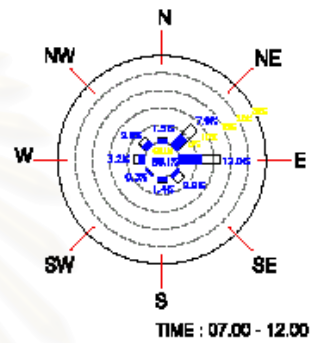
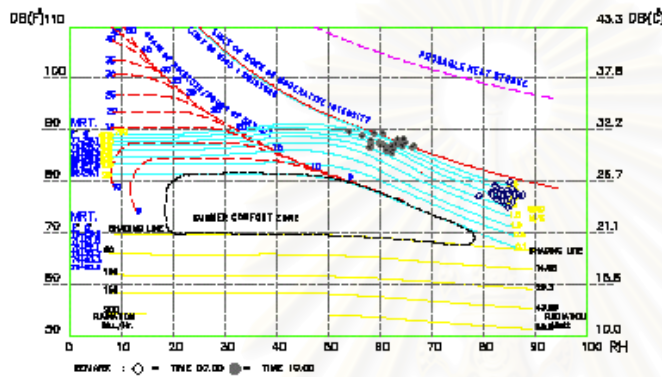
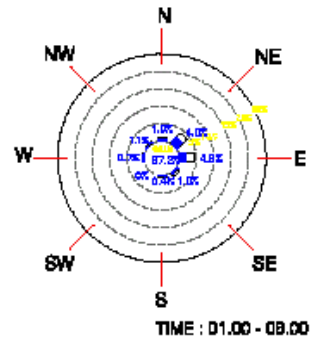
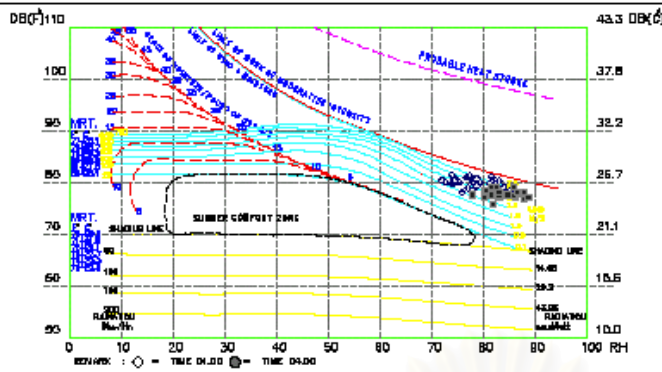


BIOCLIMATIC CHART

WIND ROSE



BIOCLIMATIC CHART & WIND ROSE : APRIL 1991-1998 (2524-2541) Station : NONG KHAI

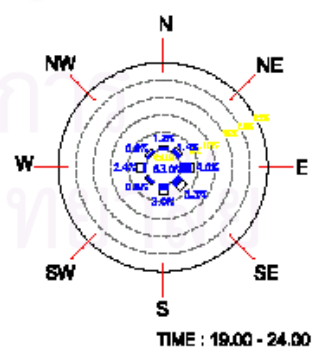
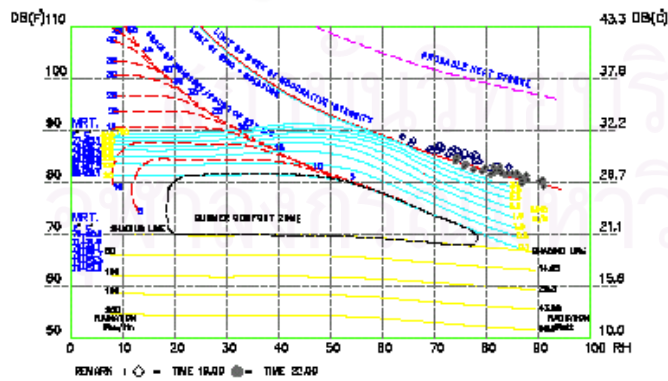
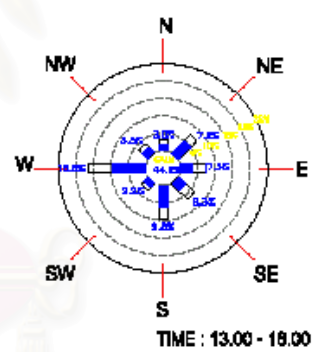
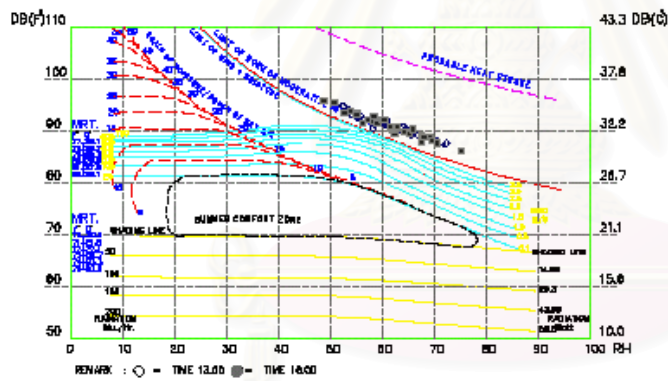
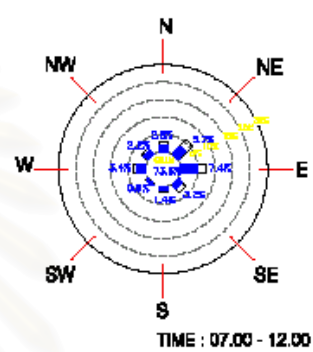
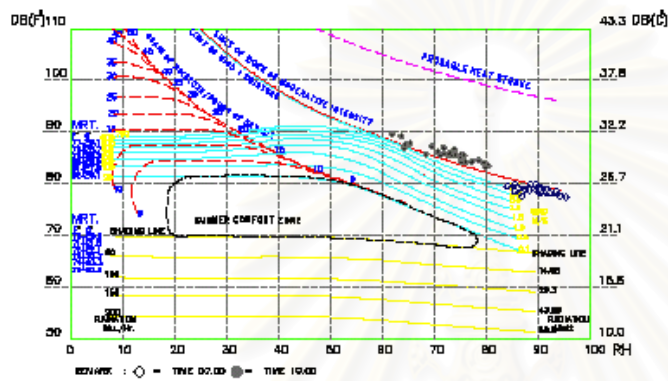
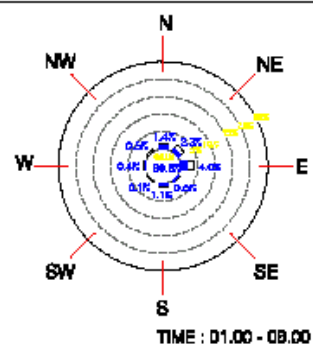
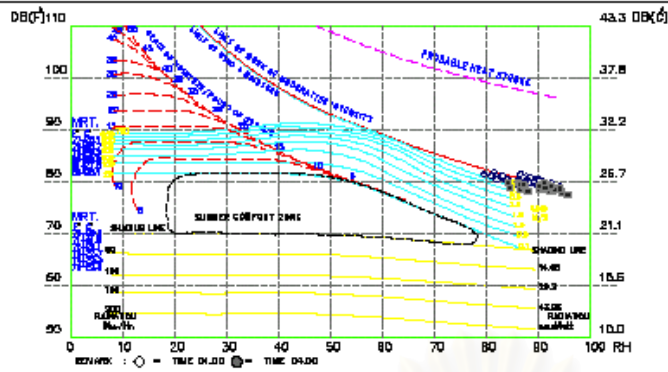


BIOCLIMATIC CHART

WIND ROSE



BIOCLIMATIC CHART & WIND ROSE : MAY 1981-1998 (2524-2541) Station : NONG KHAI

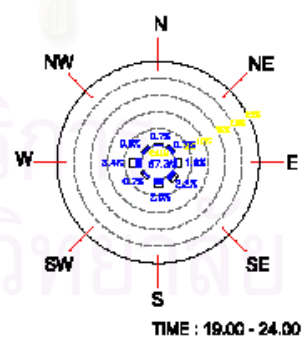
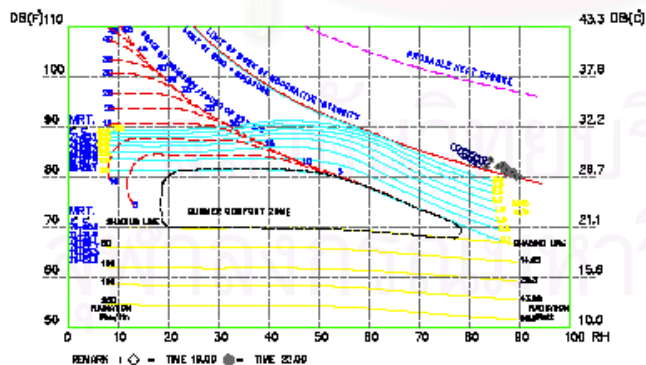
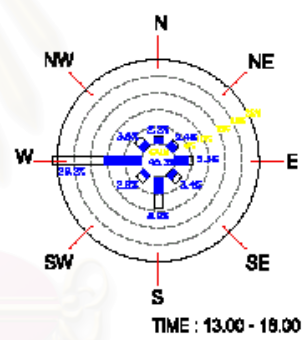
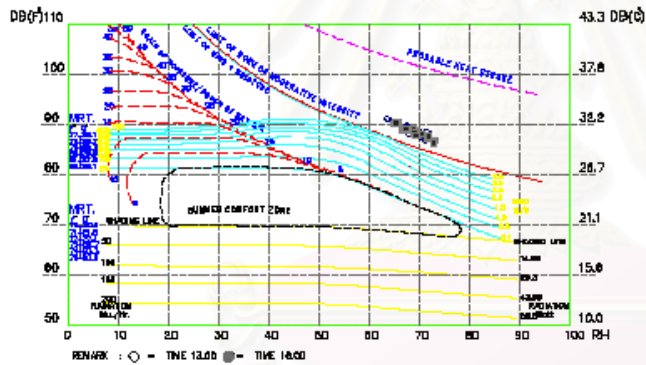
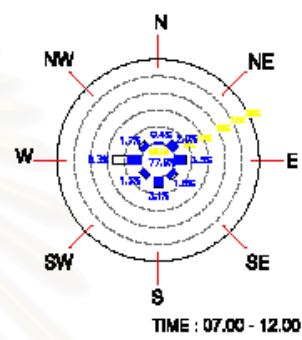
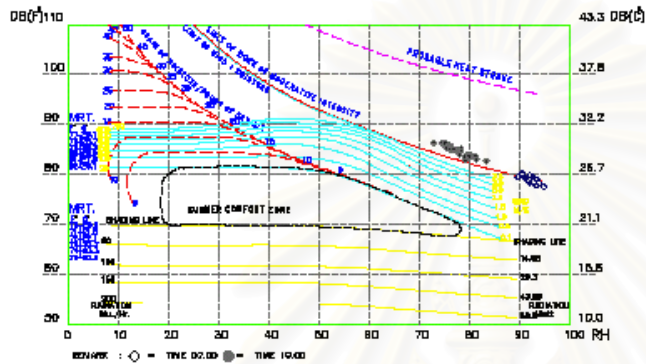
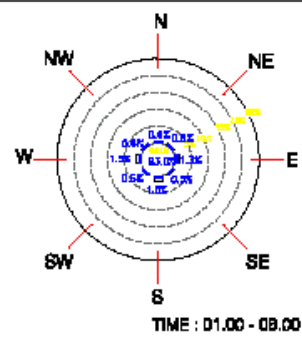
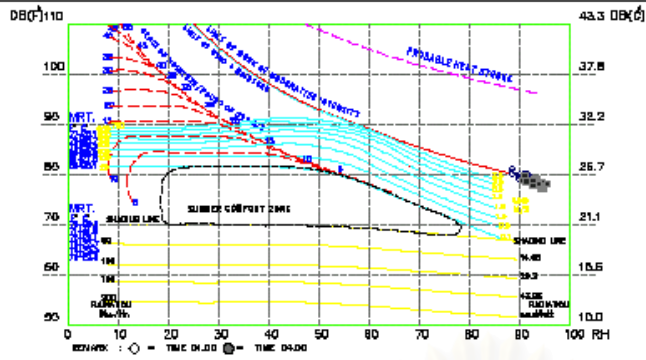


BIOCLIMATIC CHART

WIND ROSE



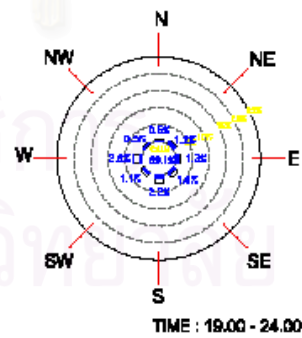
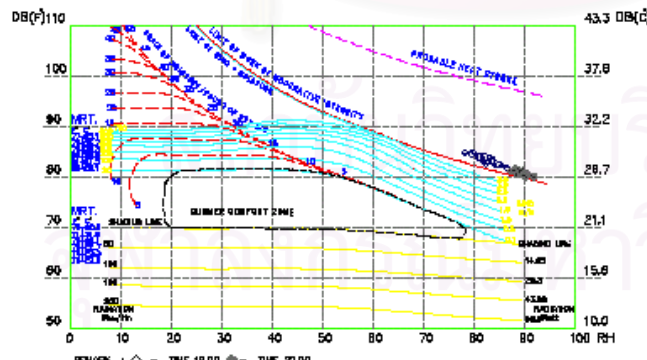
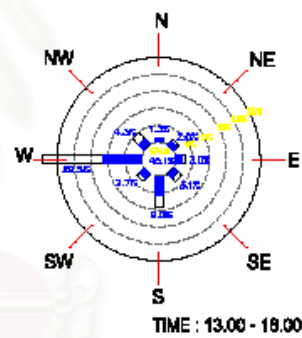
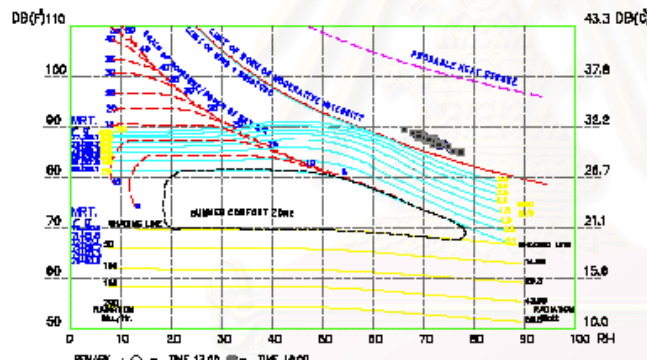
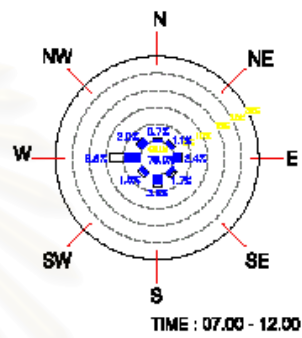
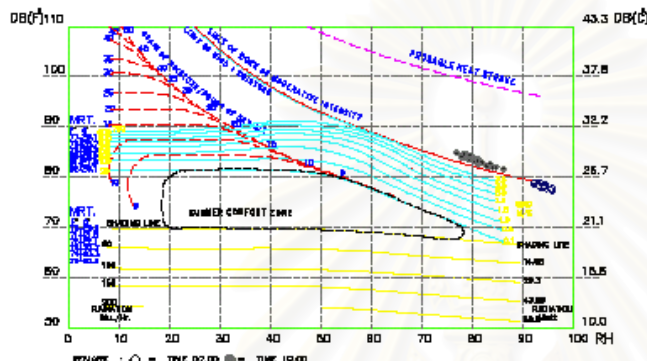
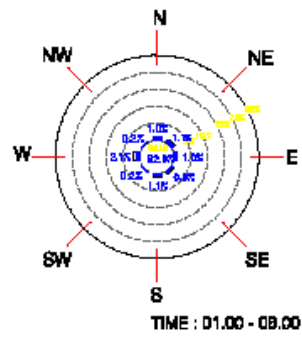
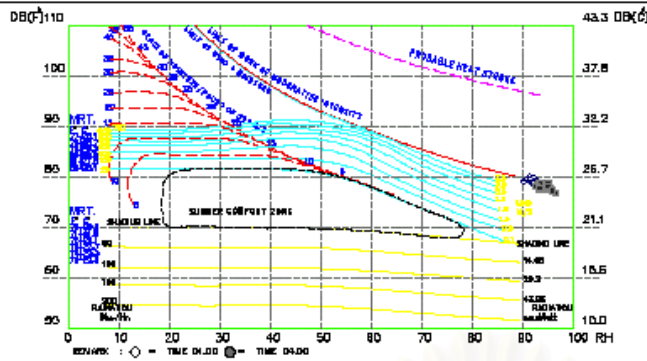
BIOCLIMATIC CHART & WIND ROSE : JUNE 1981-1988 (2524-2541) Station : NONG KHAI



BIOCLIMATIC CHART



BIOCLIMATIC CHART & WIND ROSE : JULY 1981-1988 (2524-2541) Station : NONG KHAI

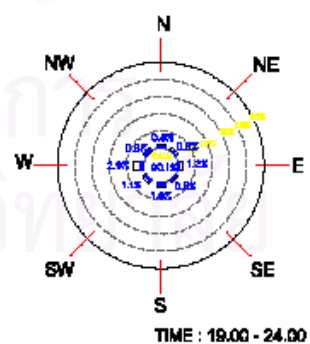
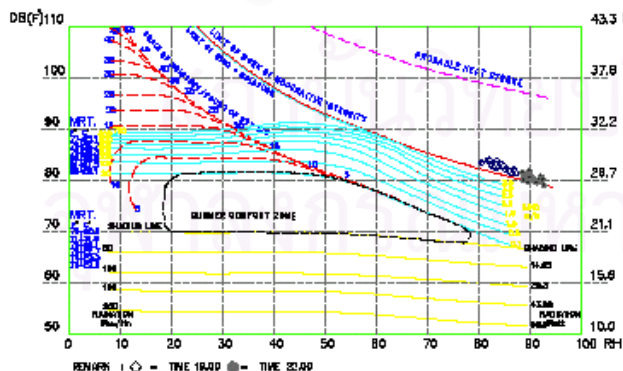
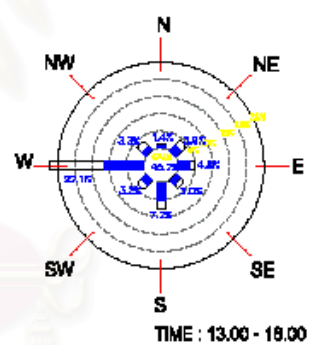
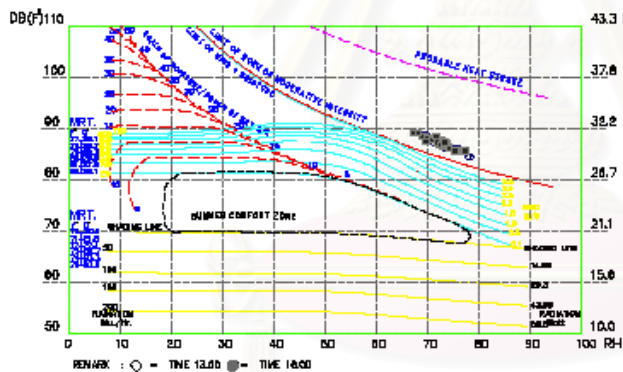
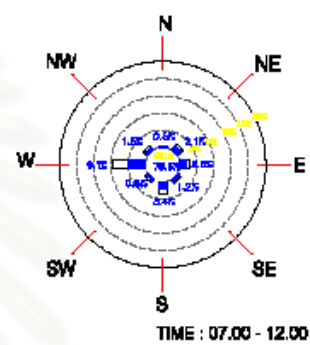
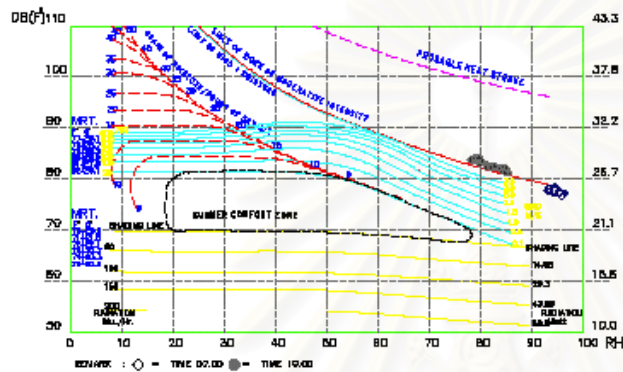
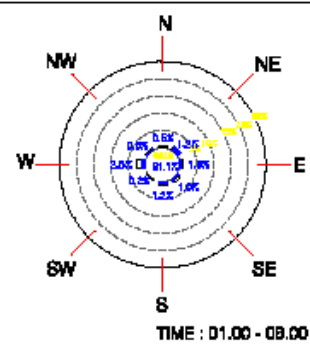
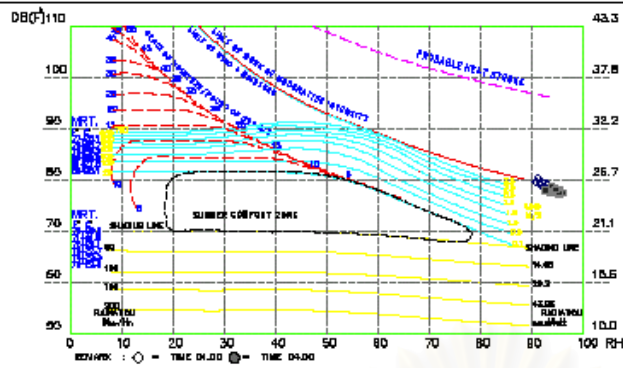


BIOCLIMATIC CHART

WIND ROSE



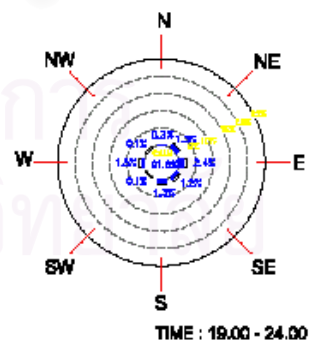
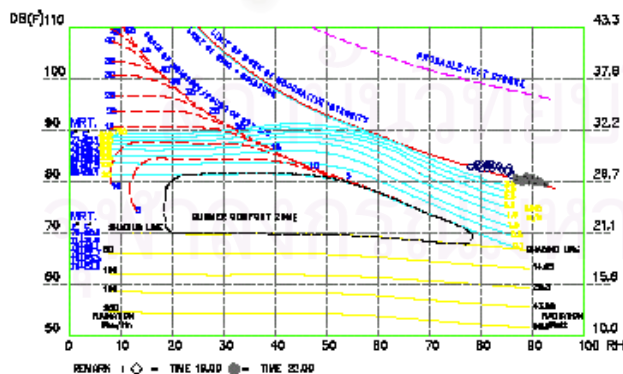
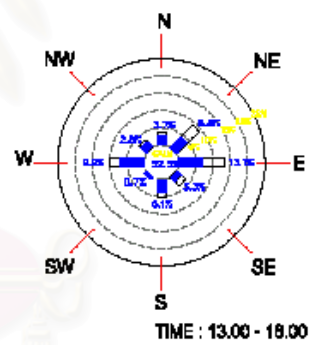
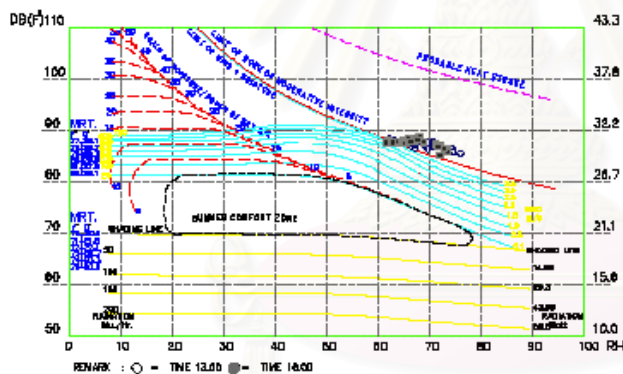
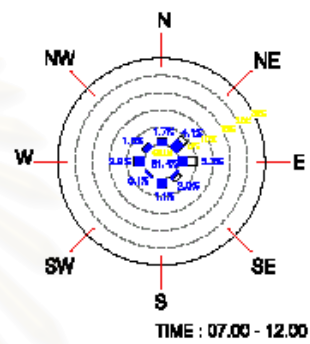
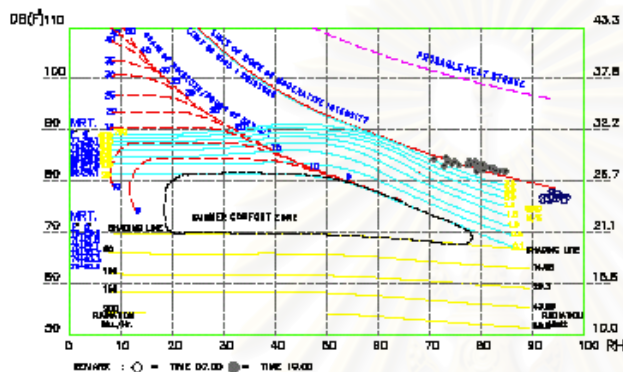
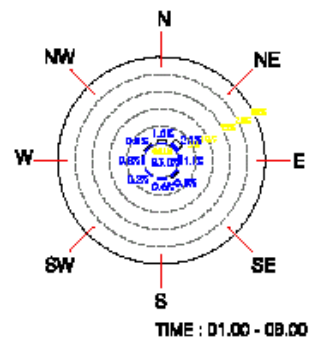
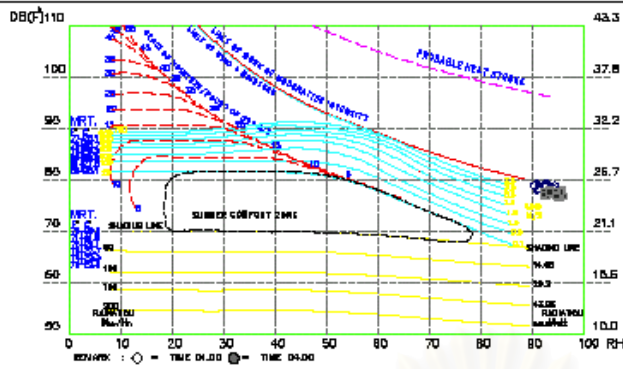
BIOCLIMATIC CHART & WIND ROSE : AUGUST 1981-1986 (2524-2541) Station : NONG KHAI



BIOCLIMATIC CHART



BIOCLIMATIC CHART & WIND ROSE : SEPTEMBER 1981-1998 (2524-2541) Station : NONG KHAI

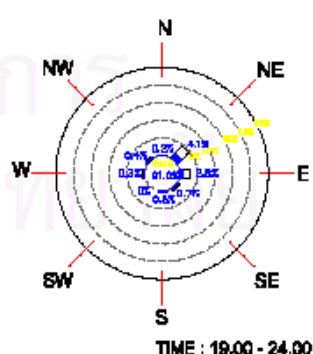
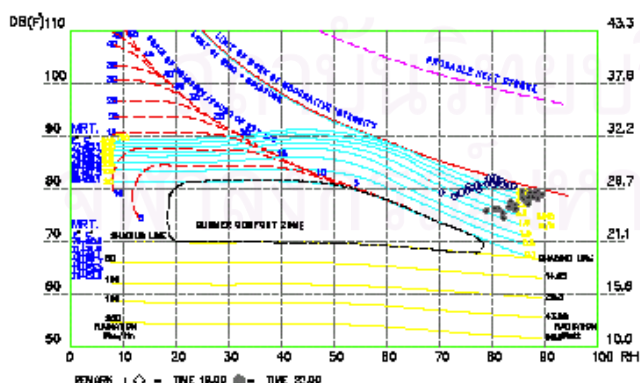
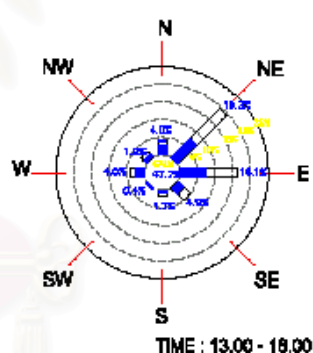
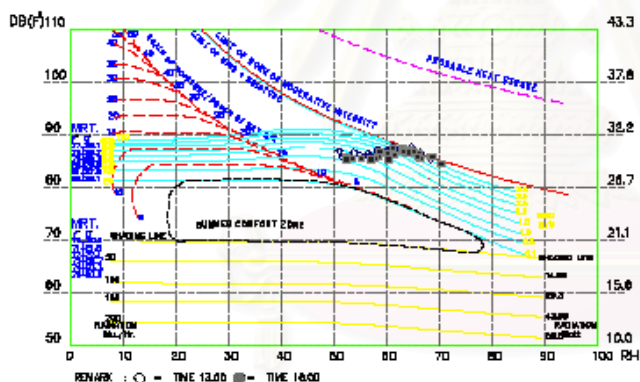
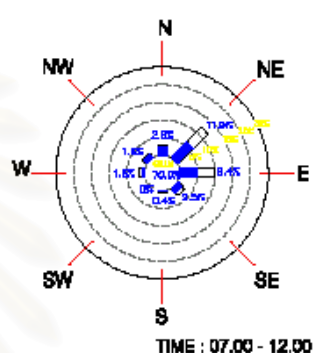
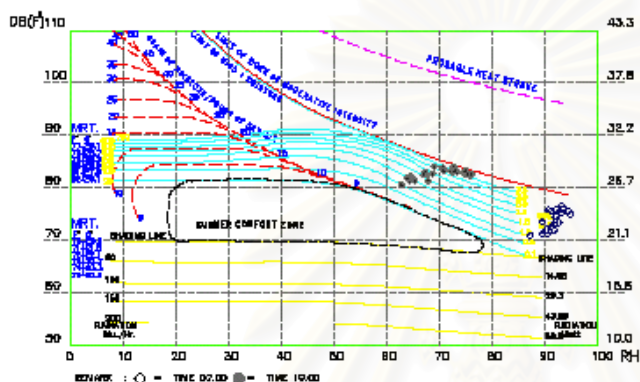
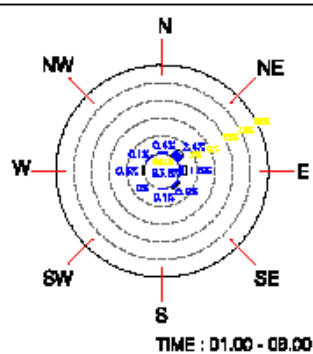
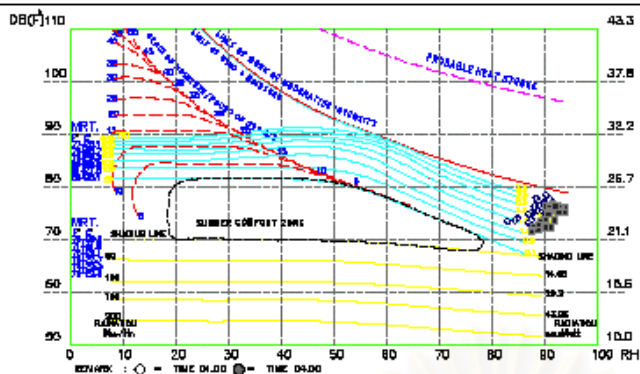


BIOCLIMATIC CHART

WIND ROSE



BIOCLIMATIC CHART & WIND ROSE : OCTOBER 1981-1986 (2524-2541) Station : NONG KHAI

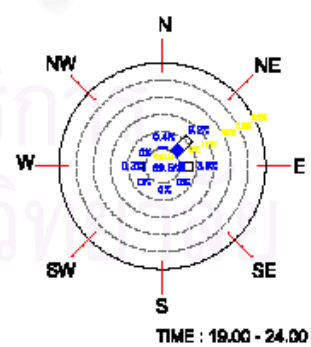
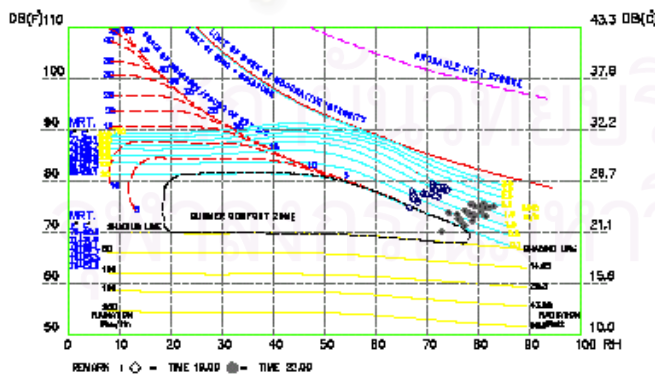
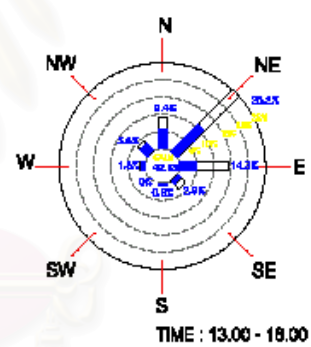
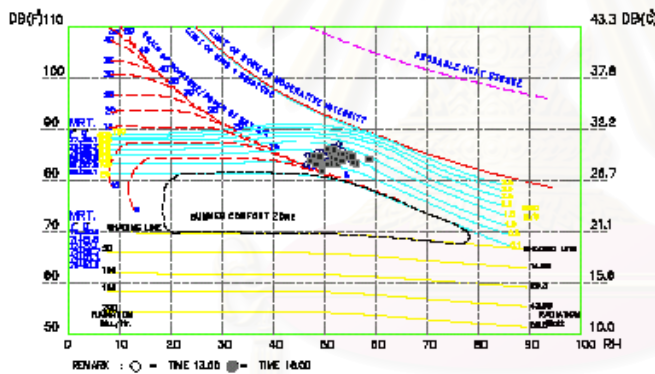
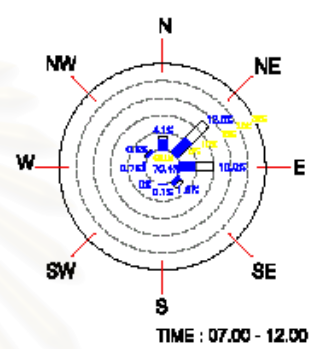
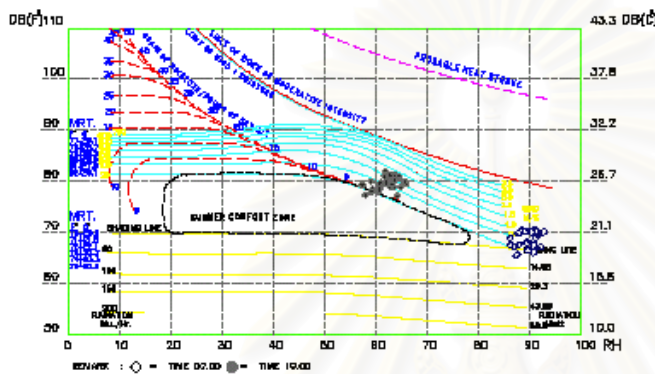
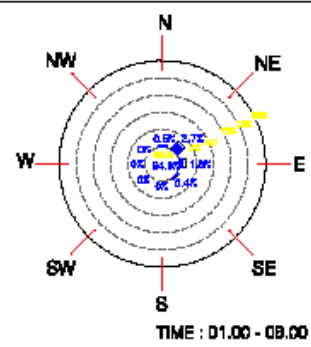
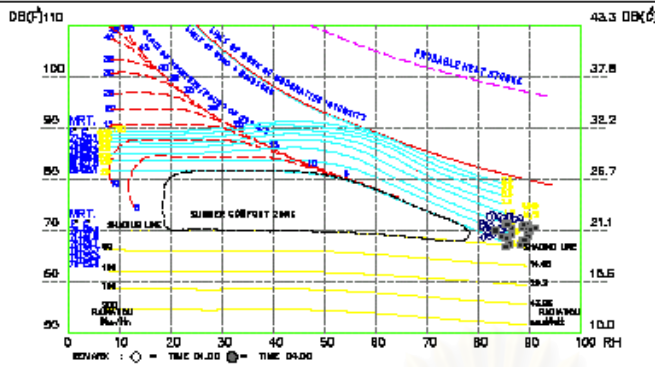


BIOCLIMATIC CHART

WIND ROSE



BIOCLIMATIC CHART & WIND ROSE : NOVEMBER 1991-1998 (2524-2541) Station : NONG KHAI

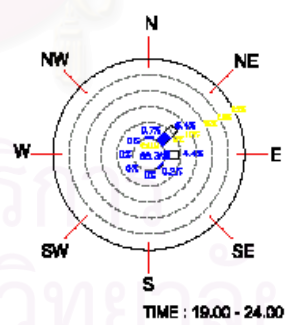
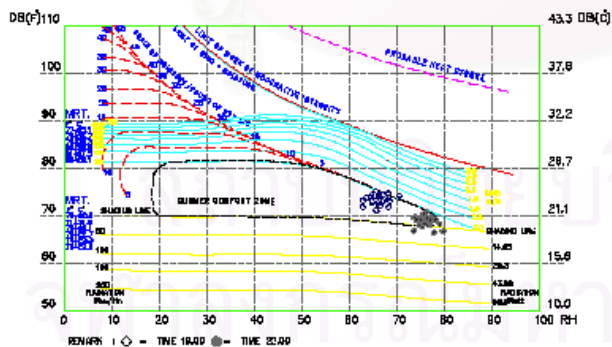
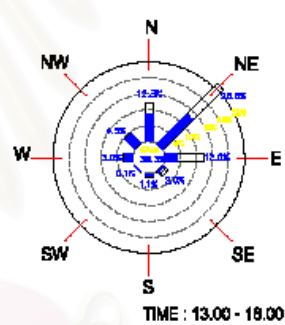
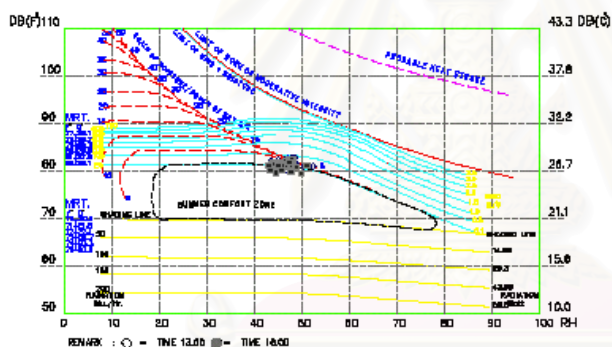
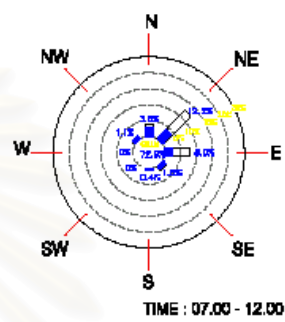
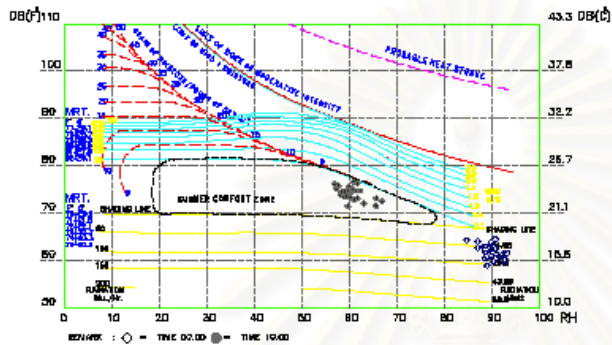
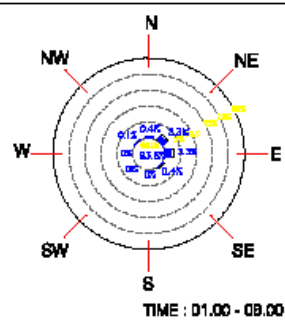
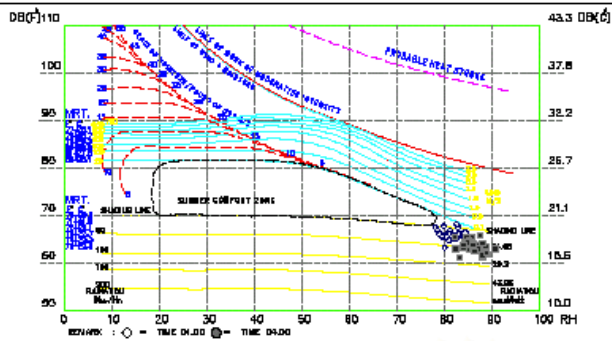


BIOCLIMATIC CHART

WIND ROSE



BIOCLIMATIC CHART & WIND ROSE : DECEMBER 1981-1986 (2524-2541) Station : NONG KHAI



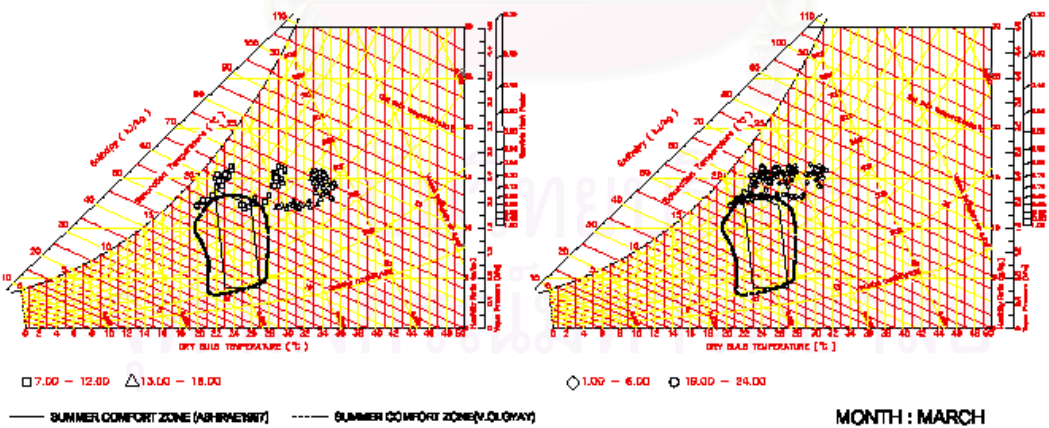
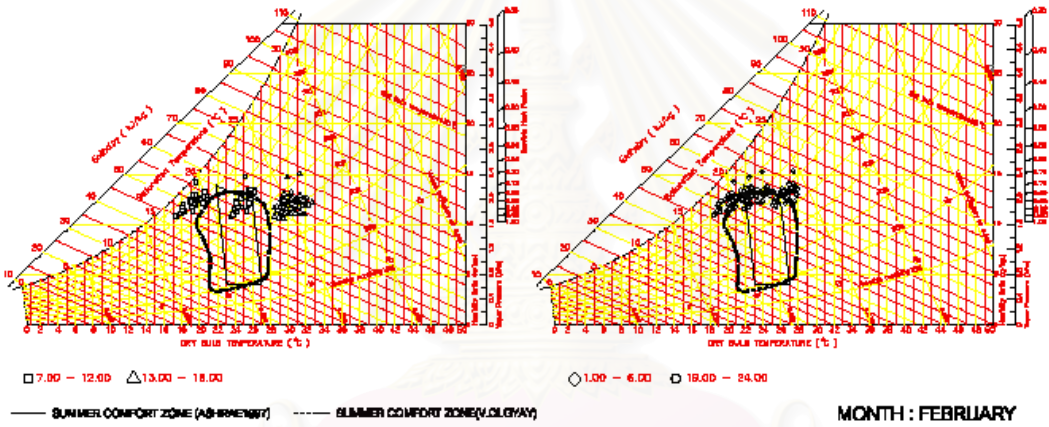
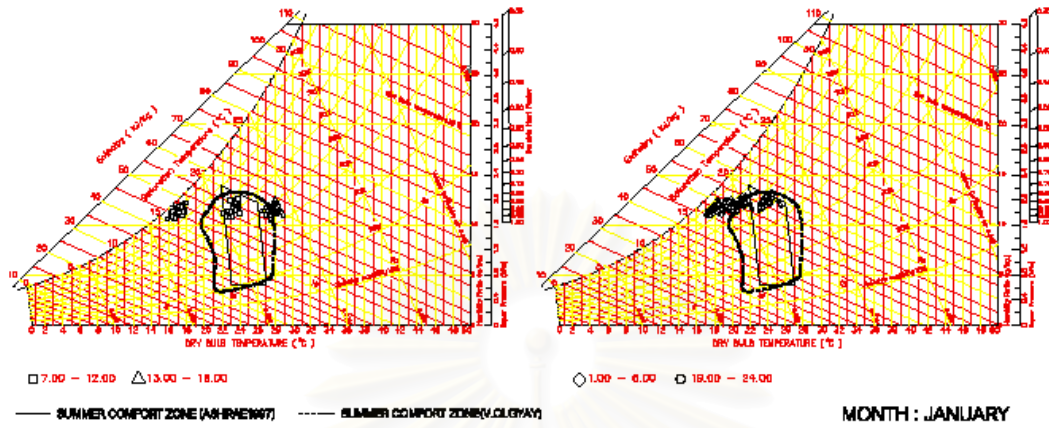
BIOCLIMATIC CHART

WIND ROSE

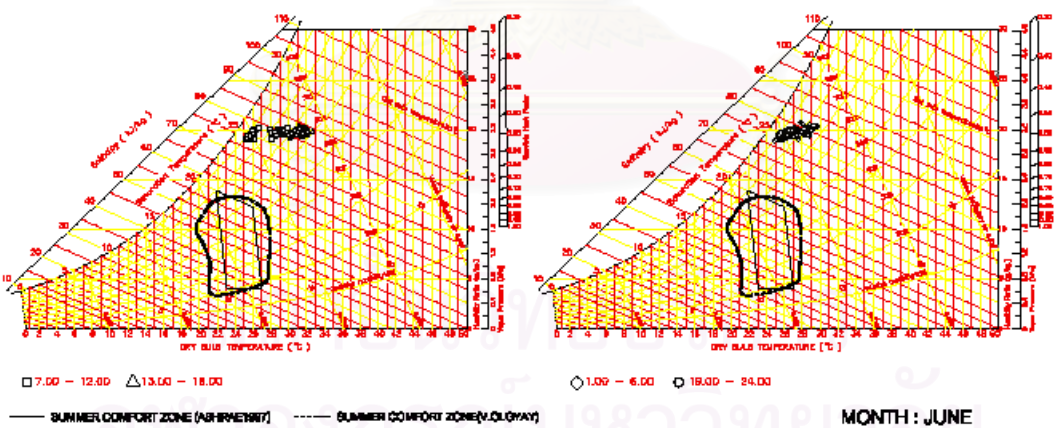
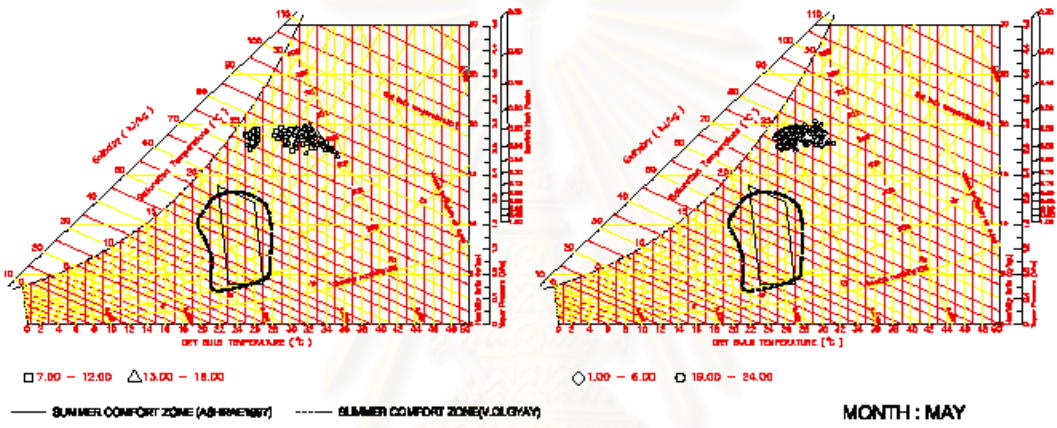
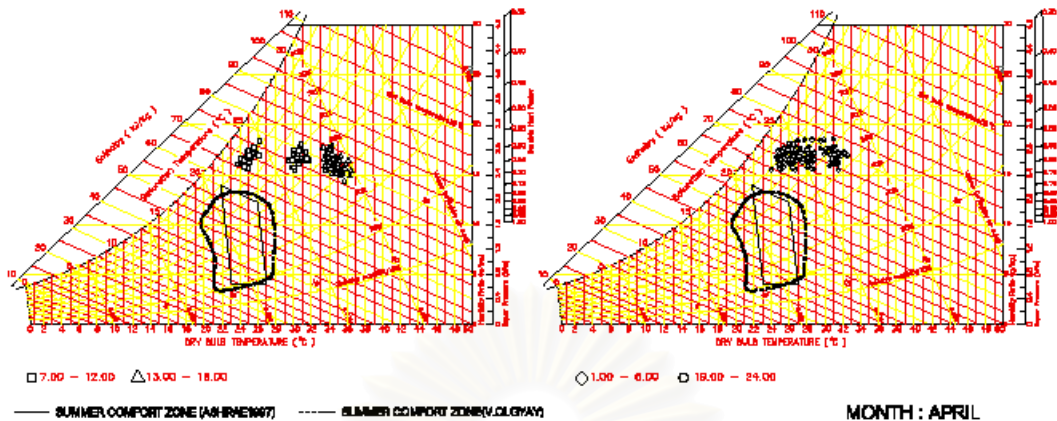


แผนภูมิความสัมพันธ์ระหว่างข้อมูลสภาวะอากาศ ในแผนภูมิไซโครเมตริก (psychrometri chart)
แยกตามช่วงเวลา

PSYCHROMETRIC CHART 1998 - 1998 (2528 - 2541) STATION : NONG KHAI

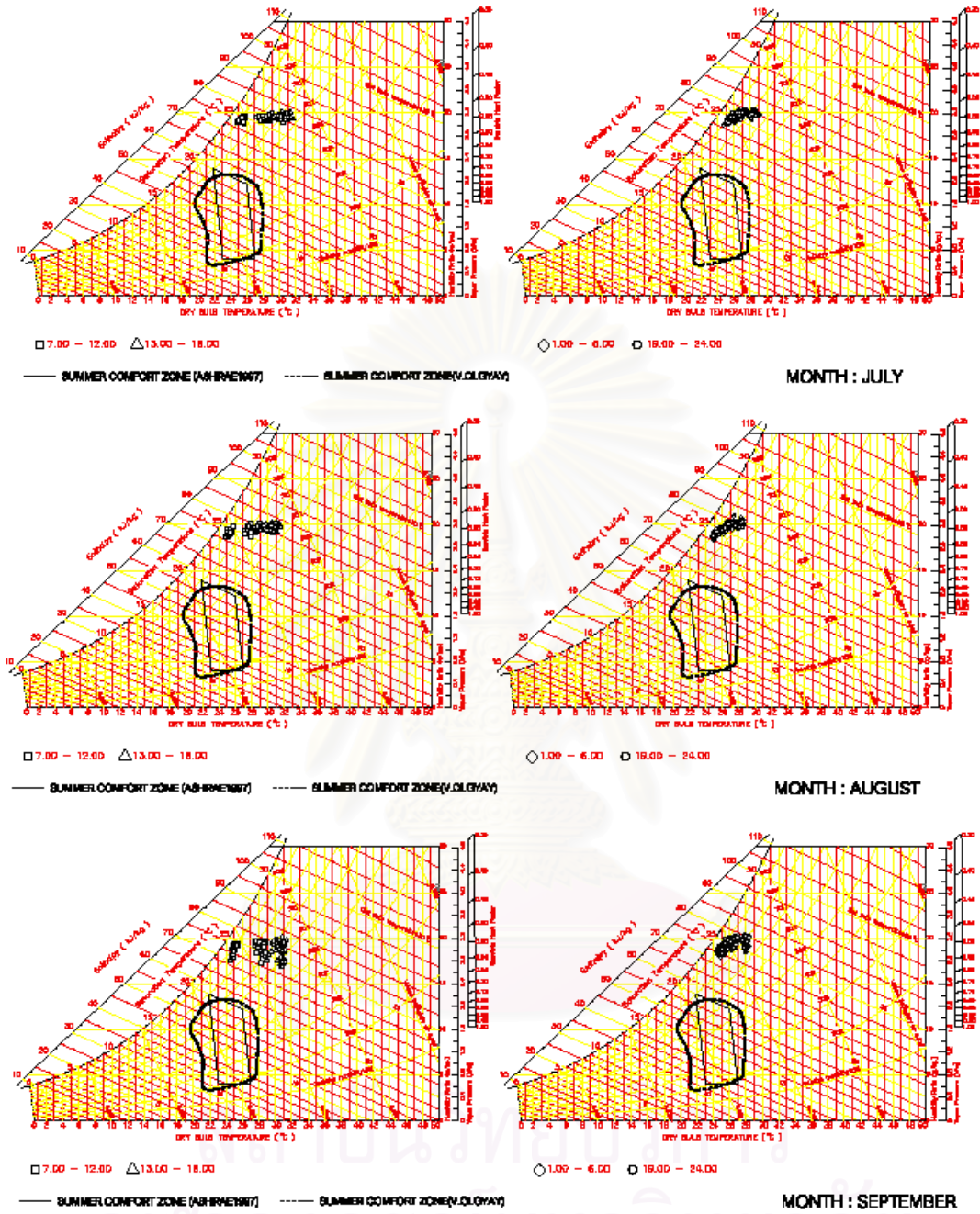


PSYCHROMETRIC CHART 1986 - 1996 (2529 - 2541) STATION : NONG KHAI



PSYCHROMETRIC CHART 1986 - 1996 (2529 - 2541)

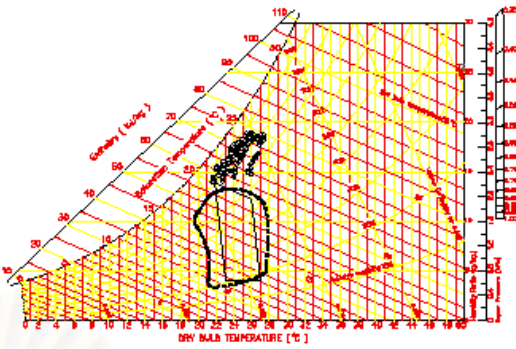
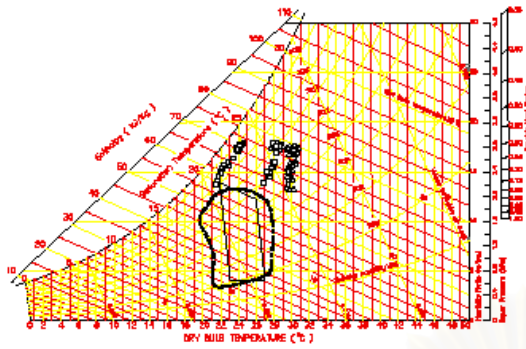
STATION : NONG KHAI



จุฬาลงกรณ์มหาวิทยาลัย

PSYCHROMETRIC CHART 1986 - 1996 (2529 - 2541)

STATION : NONG KHAI

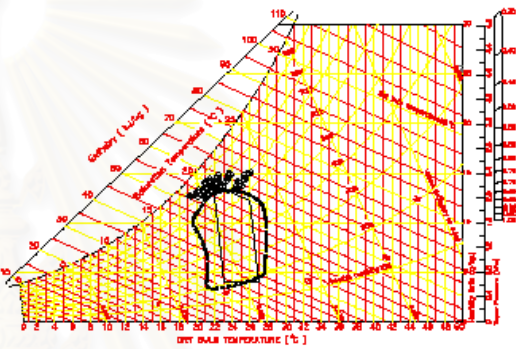
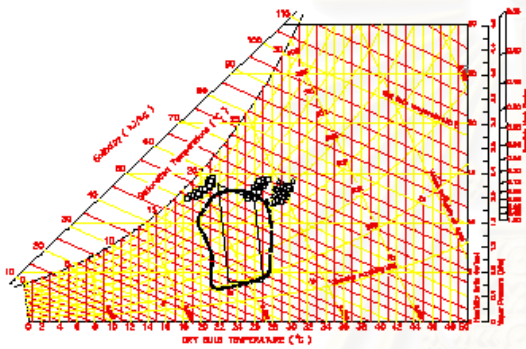


□ 7.00 - 12.00 △ 13.00 - 18.00

◇ 1.00 - 6.00 ○ 19.00 - 24.00

— SUMMER COMFORT ZONE (ASHRAE55) - - - SUMMER COMFORT ZONE(V.O.G.P.A.)

MONTH : OCTOBER

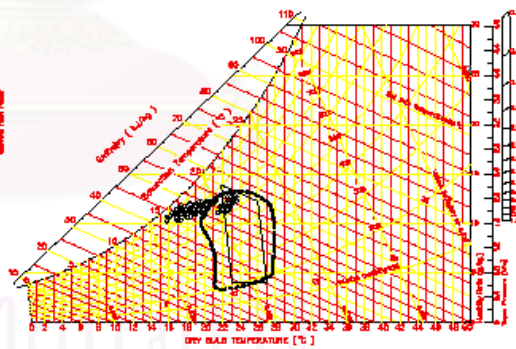
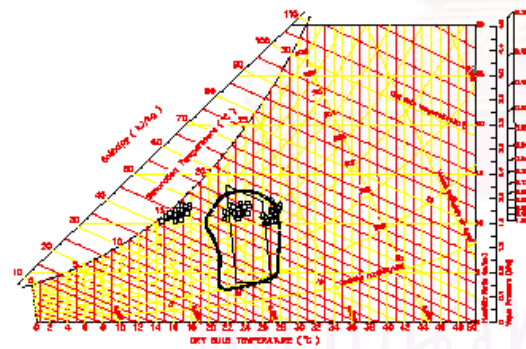


□ 7.00 - 12.00 △ 13.00 - 18.00

◇ 1.00 - 6.00 ○ 19.00 - 24.00

— SUMMER COMFORT ZONE (ASHRAE55) - - - SUMMER COMFORT ZONE(V.O.G.P.A.)

MONTH : NOVEMBER



□ 7.00 - 12.00 △ 13.00 - 18.00

◇ 1.00 - 6.00 ○ 19.00 - 24.00

— SUMMER COMFORT ZONE (ASHRAE55) - - - SUMMER COMFORT ZONE(V.O.G.P.A.)

MONTH : DECEMBER

จุฬาลงกรณ์มหาวิทยาลัย

ตารางแสดงผลข้อมูลจำนวนรายชั่วโมงอุณหภูมิกระเปาะแห้ง และค่าเฉลี่ยอุณหภูมิกระเปาะเปียกที่เกิดขึ้น
จำแนกตามช่วงอุณหภูมิกระเปาะแห้ง (bin data) ในแต่ละช่วงเวลา

ANNUAL BIN-HOUR WEATHER DATA								STATION : NONG KHAI	
Hours of occurrence of DB in each bin with MCWB in parentheses								year : 1997	
Temperature range	Observation hour group						Total Observation	MCWB	Temperature range
	01:00 to 04:00	05:00 to 08:00	09:00 to 12:00	13:00 to 16:00	17:00 to 20:00	21:00 to 24:00			
$^{\circ}\text{C}$	Annual							$^{\circ}\text{F}$	
	DB MCWB	DB MCWB	DB MCWB	DB MCWB	DB MCWB	DB MCWB	Total MCWB		
40.6 / 42.8								105 / 109	
37.8 / 40.0				21 (26.7)			21 (26.7)	100 / 104	
35.0 / 37.2			20 (26.2)	122 (26.3)	30 (26.2)		172 (26.2)	95 / 99	
32.2 / 34.4			114 (26.4)	338 (25.4)	118 (26.4)	5 (26.3)	575 (26.1)	90 / 94	
29.4 / 31.7	9 (25.8)	7 (25.7)	372 (24.7)	555 (24.6)	359 (24.9)	69 (25.7)	1,371 (25.3)	85 / 89	
26.7 / 28.9	204 (25.0)	182 (24.9)	491 (23.8)	311 (23.5)	532 (24.0)	433 (24.8)	2,153 (24.3)	80 / 84	
23.9 / 26.1	616 (23.5)	635 (23.4)	317 (22.5)	106 (22.4)	330 (22.8)	555 (23.1)	2,559 (22.9)	75 / 79	
21.1 / 23.3	346 (21.4)	298 (21.2)	111 (20.3)	6 (19.1)	77 (19.2)	266 (20.4)	1,104 (20.3)	70 / 74	
18.3 / 20.6	191 (18.1)	198 (18.4)	30 (16.6)	1 (20.3)	14 (18.3)	112 (17.9)	546 (18.3)	65 / 69	
15.6 / 17.8	84 (15.4)	108 (15.8)	4 (14.2)	0		18 (15.7)	214 (15.3)	60 / 64	
12.8 / 15.0	10 (13.5)	28 (13.4)					38 (13.4)	55 / 59	
10.0 / 12.2		2 (11.6)					2 (11.6)	50 / 54	
7.2 / 9.4								45 / 49	
4.4 / 6.7								40 / 44	
1.7 / 3.9								35 / 39	

NOTE : MCWB = Mean coincident wet-bulb temperature (number in parentheses) $^{\circ}\text{C}$
 Temperature (Celsius deg.) C = (deg.F-32) * 5 / 9

สถาบันวิทยบริการ
 จุฬาลงกรณ์มหาวิทยาลัย

BIN-HOUR WEATHER DATA Hours of occurrence of DB in each bin with MCWB in parentheses																				STATION : NONG KHAI					
Temperature range	Observation hour group						Total Observation	MCWB	Observation hour group						Total Observation	MCWB	Observation hour group						Total Observation	MCWB	Temperature range
	01:00 to 04:00	05:00 to 08:00	09:00 to 12:00	13:00 to 16:00	17:00 to 20:00	21:00 to 24:00			01:00 to 04:00	05:00 to 08:00	09:00 to 12:00	13:00 to 16:00	17:00 to 20:00	21:00 to 24:00			01:00 to 04:00	05:00 to 08:00	09:00 to 12:00	13:00 to 16:00	17:00 to 20:00	21:00 to 24:00			
	January								February								March								
40.6 / 42.6																				105 / 109					
37.8 / 40.0																		1	(26.0)	100 / 104					
35.0 / 37.2																	2	(25.2)	32 (25.0)	5 (25.3)	39 (25.1)	95 / 99			
32.2 / 34.4				1	(22.5)						11	(21.9)						16 (24.3)	53 (24.0)	26 (24.6)	95 (24.3)	90 / 94			
29.4 / 31.7			2	(21.5)	36 (22.4)	3 (22.1)					3	(21.6)	48 (21.6)	13 (21.9)				37 (23.4)	26 (22.5)	52 (23.8)	9 (24.2)	126 (23.5)	85 / 89		
26.7 / 28.9			19	(21.6)	54 (20.0)	24 (21.6)					27	(21.0)	46 (21.2)	49 (21.3)				7 (22.8)	3 (22.7)	43 (22.2)	6 (23.6)	30 (22.0)	48 (23.3)	136 (22.6)	80 / 84
23.9 / 26.1			38	(19.8)	28 (18.7)	42 (19.8)	8 (21.5)	116 (19.9)	2 (21.9)	1 (21.2)	45 (20.0)	7 (19.7)	47 (20.4)	27 (20.6)	126 (20.7)	51 (22.4)	51 (22.0)	19 (20.8)	4 (22.3)	11 (21.9)	48 (21.4)	184 (21.8)	75 / 79		
21.1 / 23.3	20	(20.9)	16 (20.6)	40 (17.9)	5 (17.1)	44 (18.4)	34 (19.9)	159 (19.1)	37 (19.7)	24 (18.6)	32 (19.1)		3 (18.8)	73 (19.2)	169 (19.3)	59 (20.2)	51 (20.4)	7 (20.3)			21 (20.3)	138 (20.3)	70 / 74		
18.3 / 20.6	37	(17.5)	24 (18.2)	21 (16.4)		11 (17.1)	96 (17.2)	159 (17.3)	65 (17.8)	96 (17.6)	4 (17.0)			12 (17.6)	147 (17.6)	7 (17.7)	18 (17.8)					25 (17.6)	65 / 69		
15.6 / 17.8	58	(15.6)	62 (15.5)	4 (14.2)			16 (15.6)	140 (15.2)	8 (15.6)	21 (15.6)					29 (15.6)		1 (16.3)					1 (16.3)	60 / 64		
12.8 / 15.0	9	(13.4)	20 (13.3)					29 (13.3)															55 / 59		
10.0 / 12.2			2 (11.6)					2 (11.6)															50 / 54		
7.2 / 9.4																							45 / 49		
4.4 / 6.7																							40 / 44		
1.7 / 3.9																							35 / 39		
	April						May						June												
40.6 / 42.6																							105 / 109		
37.8 / 40.0				1	(25.8)						12	(26.6)									7	(26.3)	7 (26.3)	100 / 104	
35.0 / 37.2			1	(25.5)	28 (25.8)	3 (25.6)					12 (26.6)	32 (26.9)	15 (26.7)		59 (26.7)			5 (27.5)	30 (27.4)	7 (27.3)		42 (27.4)	95 / 99		
32.2 / 34.4			17	(25.7)	39 (25.3)	20 (25.4)					27 (26.3)	40 (26.7)	31 (26.6)	5 (26.3)	103 (26.5)			37 (27.2)	34 (27.8)	29 (27.3)		100 (27.4)	90 / 94		
29.4 / 31.7			36	(24.9)	35 (24.6)	33 (24.5)	7 (24.8)	111 (24.7)	9 (25.8)	4 (25.3)	45 (25.9)	35 (25.9)	48 (26.1)	30 (25.7)	171 (25.8)			3 (26.2)	30 (26.6)	38 (27.0)	50 (27.0)	20 (26.4)	141 (26.6)	85 / 89	
26.7 / 28.9	8	(23.9)	9 (24.3)	42 (23.7)	10 (24.0)	41 (23.7)	29 (23.7)	138 (23.9)	47 (25.0)	48 (24.9)	35 (25.0)	5 (25.3)	26 (25.3)	65 (25.3)	226 (25.1)	53 (25.5)	47 (25.4)	33 (25.9)	4 (26.2)	21 (26.1)	72 (25.8)	230 (25.8)	80 / 84		
23.9 / 26.1	53	(22.7)	51 (22.9)	22 (22.7)	5 (22.8)	17 (22.8)	83 (22.7)	211 (22.8)	67 (24.1)	72 (24.0)	5 (24.1)		4 (24.7)	24 (24.4)	172 (24.3)	58 (24.5)	64 (24.6)	15 (24.6)	7 (25.1)	13 (25.0)	26 (24.6)	183 (24.8)	75 / 79		
21.1 / 23.3	53	(21.7)	56 (21.7)	2 (22.7)	1 (21.1)	4 (21.2)	19 (21.7)	135 (21.7)	1 (22.1)						1 (22.1)	9 (23.4)	6 (23.4)				1 (22.9)	16 (23.2)	70 / 74		
18.3 / 20.6	8	(19.8)	4 (20.1)		1 (20.3)	2 (20.4)	2 (20.4)	15 (20.2)															65 / 69		
15.6 / 17.8																							60 / 64		
12.8 / 15.0																							55 / 59		
10.0 / 12.2																							50 / 54		
7.2 / 9.4																							45 / 49		
4.4 / 6.7																							40 / 44		
1.7 / 3.9																							35 / 39		

NOTE : MCWB = Mean coincident wet-bulb temperature (number in parentheses) °C

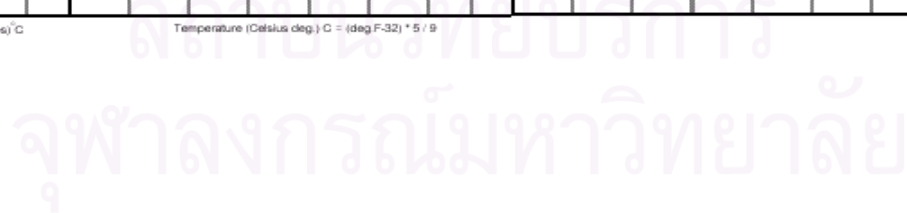
Temperature (Celsius deg.) C = (deg F-32) * 5 / 9



BIN-HOUR WEATHER DATA Hours of occurrence of DB in each bin with MCWB in parentheses																						STATION : NONG KHAI							
Temperature range	Observation hour group						Total Observation	MCWB	Observation hour group						Total Observation	MCWB	Observation hour group						Total Observation	MCWB	Temperature range				
	01:00 to 04:00	05:00 to 08:00	09:00 to 12:00	13:00 to 16:00	17:00 to 20:00	21:00 to 24:00			01:00 to 04:00	05:00 to 08:00	09:00 to 12:00	13:00 to 16:00	17:00 to 20:00	21:00 to 24:00			01:00 to 04:00	05:00 to 08:00	09:00 to 12:00	13:00 to 16:00	17:00 to 20:00	21:00 to 24:00							
	July								August								September												
40.6 / 42.6																													105 / 109
37.8 / 40.0																													100 / 104
35.0 / 37.2																													95 / 99
32.2 / 34.4					10 (27.6)					4 (27.5)	31 (28.0)	5 (28.2)			40 (27.9)		8 (27.0)	38 (26.3)	6 (26.3)		52 (26.5)								90 / 94
29.4 / 31.7				28 (26.8)	58 (27.3)	33 (27.2)				42 (26.9)	49 (27.3)	34 (27.5)	3 (27.6)	128 (27.3)		38 (25.7)	35 (25.4)	30 (25.8)			101 (25.6)								85 / 89
26.7 / 28.9	25 (25.8)	17 (25.7)	54 (26.1)	50 (26.2)	66 (26.4)	59 (26.2)	271 (26.1)	27 (26.0)	22 (25.7)	60 (26.0)	36 (26.2)	60 (26.2)	60 (26.2)	265 (26.1)	24 (25.6)	21 (25.4)	40 (25.0)	31 (25.6)	55 (25.4)	44 (25.5)	215 (25.4)								80 / 84
23.9 / 26.1	97 (24.9)	99 (24.9)	42 (25.0)	8 (24.9)	25 (25.1)	85 (25.1)	334 (25.0)	91 (24.9)	102 (24.8)	18 (24.9)	8 (25.2)	25 (25.2)	61 (25.1)	305 (25.0)	65 (24.2)	83 (24.2)	35 (24.2)	16 (23.8)	29 (24.2)	76 (24.2)	324 (24.1)								75 / 79
21.1 / 23.3	2 (22.8)	8 (23.2)								10 (23.0)	6 (23.5)			6 (23.5)	11 (21.8)	15 (21.7)	1 (22.6)				27 (22.1)								70 / 74
18.3 / 20.6																													65 / 69
15.6 / 17.8																													60 / 64
12.8 / 15.0																													55 / 59
10.0 / 12.2																													50 / 54
7.2 / 9.4																													45 / 49
4.4 / 6.7																													40 / 44
1.7 / 3.9																													35 / 39
	October						November						December																
40.6 / 42.6																													105 / 109
37.8 / 40.0																													100 / 104
35.0 / 37.2																													95 / 99
32.2 / 34.4				5 (27.0)	42 (26.2)	1 (26.5)						29 (24.5)			29 (24.5)						10 (24.4)				10 (24.4)				90 / 94
29.4 / 31.7				80 (25.7)	69 (25.1)	37 (25.9)						37 (24.2)	52 (23.7)	19 (23.8)	108 (23.9)		16 (23.4)	72 (22.7)	7 (23.6)		95 (23.3)								85 / 89
26.7 / 28.9	13 (25.6)	15 (25.2)	47 (24.3)	7 (21.9)	64 (24.8)	55 (25.5)	201 (24.6)					43 (22.3)	35 (20.1)	52 (22.8)	1 (23.9)	131 (22.3)			48 (22.0)	27 (21.4)	44 (22.1)	2 (22.8)	121 (22.1)					80 / 84	
23.9 / 26.1	95 (24.3)	90 (24.3)	11 (22.7)	6 (24.7)	22 (22.8)	58 (23.9)	282 (23.6)	11 (23.0)	20 (22.2)	29 (20.3)	4 (20.3)	37 (21.1)	68 (22.3)	169 (21.5)	6 (21.8)	2 (21.6)	38 (20.5)	15 (18.7)	58 (21.0)	31 (21.7)	150 (20.9)								75 / 79
21.1 / 23.3	13 (19.2)	12 (20.4)	1 (23.4)			11 (19.3)	37 (20.5)	82 (21.1)	67 (20.8)	11 (18.4)		12 (19.3)	39 (20.2)	211 (20.0)	53 (20.5)	43 (20.3)	17 (18.3)		14 (18.5)	68 (20.0)	196 (19.5)								70 / 74
18.3 / 20.6	3 (18.6)	7 (18.5)					10 (18.5)	24 (16.7)	22 (17.7)					58 (17.2)	49 (18.5)	57 (18.5)	5 (18.3)		1 (17.3)	20 (17.3)	132 (17.6)								65 / 69
15.6 / 17.8								3 (15.4)	11 (15.8)					14 (15.6)	15 (15.1)	13 (15.6)				2 (15.8)	30 (15.5)								60 / 64
12.8 / 15.0															1 (13.6)	8 (13.5)					9 (13.5)								55 / 59
10.0 / 12.2																													50 / 54
7.2 / 9.4																													45 / 49
4.4 / 6.7																													40 / 44
1.7 / 3.9																													35 / 39

NOTE : MCWB = Mean coincident wet-bulb temperature (number in parentheses) °C

Temperature (Celsius deg.) C = (deg.F-32) * 5 / 9



ตารางแสดงผลข้อมูลปริมาณองศาชั่วโมง การทำความร้อนและการทำความเย็น (degree hours and hours of occurrence)

DEGREE HOURS & HOURS OF OCCURRENCE						Station : NONG KHAI		
						YEARS : 1981 - 1998 (2524-2541)		
TEMPERATURE		MEAN TEMP.DEGREE (°F)	NO. OF HOURS BELOW TEMPERATURE	NO. OF DEGREE HOURS OF HEATING BELOW TEMPERATURE		NO. OF HOURS ABOVE TEMPERATURE	NO. OF DEGREE HOURS OF COOLING ABOVE TEMPERATURE	
Degree		HOURS OF OCCURRENCE						
°F	°C			°F	°C		°F	°C
35	1.7	(37.5)	-	-	-	8,760.00	391,986.00	217,562.23
36	2.2		-	-	-	8,760.00	383,226.00	212,690.43
37	2.8	0	-	-	-	8,760.00	374,466.00	207,828.63
38	3.3		-	-	-	8,760.00	365,706.00	202,966.83
39	3.9		-	-	-	8,760.00	356,946.00	198,105.03
40	4.4	(42.5)	-	-	-	8,760.00	348,186.00	193,243.23
41	5.0		-	-	-	8,760.00	339,426.00	188,381.43
42	5.6	0	-	-	-	8,760.00	330,666.00	183,519.63
43	6.1		-	-	-	8,760.00	321,906.00	178,657.83
44	6.7		-	-	-	8,760.00	313,146.00	173,796.03
45	7.2	(47.5)	-	-	-	8,760.00	304,386.00	168,934.23
46	7.8		-	-	-	8,760.00	295,626.00	164,072.43
47	8.3	0	-	-	-	8,760.00	286,866.00	159,210.63
48	8.9		-	-	-	8,760.00	278,106.00	154,348.83
49	9.4		-	-	-	8,760.00	269,346.00	149,487.03
50	10.0	52.5	-	-	-	8,760.00	260,586.00	144,625.23
51	10.6		-	-	-	8,760.00	251,826.00	139,763.43
52	11.1	0	-	-	-	8,760.00	243,066.00	134,901.63
53	11.7		-	-	-	8,760.00	234,306.00	130,039.83
54	12.2		-	-	-	8,760.00	225,546.00	125,178.03
55	12.8	(57.5)	1.20	-	-	8,760.00	216,786.00	120,316.23
56	13.3		2.40	3.00	1.67	8,758.80	208,026.00	115,454.43
57	13.9	6	3.60	6.00	3.33	8,757.60	199,266.00	110,592.63
58	14.4		4.80	9.00	5.00	8,756.40	190,506.00	105,730.83
59	15.0		6.00	12.00	6.66	8,755.20	181,746.00	100,869.03
60	15.6	(62.5)	73.20	15.00	8.33	8,754.00	173,001.00	96,015.66
61	16.1		140.40	189.00	104.90	8,686.80	164,415.00	91,250.33
62	16.7	336	207.60	363.00	201.47	8,619.60	155,829.00	86,485.10
63	17.2		274.80	637.00	298.04	8,552.40	147,243.00	81,719.87
64	17.8		342.00	711.00	394.61	8,485.20	138,657.00	76,954.64
65	18.3	(67.5)	468.00	885.00	491.18	8,418.00	130,071.00	72,189.41
66	18.9		594.00	1,542.00	856.81	8,292.00	121,988.00	67,692.24
67	19.4	630	720.00	2,199.00	1,220.45	8,166.00	113,895.00	63,195.08
68	20.0		846.00	2,856.00	1,585.08	8,040.00	105,762.00	58,697.91
69	20.6		972.00	3,513.00	1,949.72	7,914.00	97,669.00	54,200.75

DEGREE HOURS & HOURS OF OCCURRENCE **Station : NONG KHAI**
YEARS : 1981 - 1998 (2524-2541)

TEMPERATURE		MEAN TEMP.DEGREE (°F)	NO. OF HOURS BELOW TEMPERATURE	NO. OF DEGREE HOURS OF HEATING BELOW TEMPERATURE		NO. OF HOURS ABOVE TEMPERATURE	NO. OF DEGREE HOURS OF COOLING ABOVE TEMPERATURE	
Degree		HOURS OF OCCURRENCE		°F	°C		°F	°C
°F	°C							
70	21.1	(72.5)	1,156.20	4,170.00	2,314.35	7,788.00	89,558.00	49,703.58
71	21.7		1,340.40	5,602.50	3,109.39	7,603.80	82,228.50	45,838.82
72	22.2	921	1,524.60	7,035.00	3,904.43	7,419.60	74,901.00	41,570.06
73	22.8		1,708.80	8,467.50	4,699.48	7,235.40	67,573.50	37,503.29
74	23.3		1,893.00	9,900.00	5,494.50	7,051.20	60,248.00	33,438.53
75	23.9	(77.5)	2,385.60	11,332.50	6,289.54	6,867.00	62,918.50	29,369.77
76	24.4		2,878.20	14,467.00	8,023.84	6,374.40	47,283.00	26,242.07
77	25.0	2463	3,370.80	17,581.50	9,757.73	5,881.80	41,647.50	23,114.36
78	25.6		3,863.40	20,706.00	11,491.83	5,389.20	36,012.00	19,998.66
79	26.1		4,356.00	23,830.50	13,225.93	4,896.60	30,378.50	16,858.96
80	26.7	(82.5)	4,806.00	26,955.00	14,960.03	4,404.00	24,741.00	13,731.28
81	27.2		5,256.00	32,436.00	18,001.98	3,954.00	21,462.00	11,911.41
82	27.8	2250	5,706.00	37,917.00	21,043.94	3,504.00	18,183.00	10,091.57
83	28.3		6,156.00	43,398.00	24,085.89	3,054.00	14,904.00	8,271.72
84	28.9		6,606.00	48,879.00	27,127.85	2,604.00	11,625.00	6,451.88
85	29.4	(87.5)	6,937.80	54,360.00	30,169.80	2,154.00	8,346.00	4,832.03
86	30.0		7,269.60	61,795.50	34,296.50	1,822.20	7,021.50	3,898.93
87	30.6	1659	7,601.40	69,231.00	38,423.21	1,490.40	5,697.00	3,161.84
88	31.1		7,933.20	76,666.50	42,549.91	1,158.60	4,372.50	2,428.74
89	31.7		8,265.00	84,102.00	46,676.61	826.80	3,048.00	1,691.84
90	32.2	(92.5)	8,346.00	91,537.50	50,803.31	495.00	1,723.50	956.54
91	32.8		8,427.00	100,005.00	55,502.78	414.00	1,431.00	794.21
92	33.3	405	8,508.00	108,472.50	60,202.24	333.00	1,138.50	631.87
93	33.9		8,589.00	116,940.00	64,901.70	252.00	846.00	469.53
94	34.4		8,670.00	125,407.50	69,601.16	171.00	553.50	307.19
95	35.0	(97.5)	8,688.00	133,875.00	74,300.63	90.00	261.00	144.86
96	35.6		8,706.00	142,590.00	79,137.45	72.00	198.00	109.89
97	36.1	90	8,724.00	151,305.00	83,974.28	54.00	135.00	74.93
98	36.7		8,742.00	160,020.00	88,811.10	36.00	72.00	39.96
99	37.2		8,760.00	168,735.00	93,647.93	18.00	9.00	5.00