GUIDE FOR ASSISTING IN HEAT INDEX CALCULATION

The following charts can be used to calculate heat index or apparent temperature using ambient temperature and relative humidity values.

Heat Index can be derived by using the Mannix SAM990DW and graphing the temperature & humidity values or it is displayed directly on model SAM800HI.

The heat index was developed by the National Weather Service to help people avoid heat illness. Prolonged exposure and/or physical activity at a high heat index is likely to lead to sun stroke, heat cramps, heat exhaustion and even death in susceptible individuals.

There are many factors that need to be considered when determining heat index. Besides temperature and humidity one must also take into consideration vapor pressure, effective wind speed, dimensions of a human body, internal body temperature, fluid intake and the sweating rate of a human.

Please be aware that heat index is not an exact science. The values reached are only approximations. Ultimately, the final decision of whether or not to exercise belongs to the individual.

GUIDELINES FOR USE:

- First and foremost, use common sense when deciding whether or not your environment is safe for physical activity.
- After measuring the ambient temperature and relative humidity with the Mannix digital psychrometer, graph the appropriate values on chart “A”. This will give you the heat index of your environment.
- Now, apply that heat index value to chart “B” which provides the effects on the human body and relative safety guidelines.
- Lastly, add 5° F to the apparent temperature for June to August from 10 a.m. to 4 p.m. on sunny days.

For further information on heat index please contact the following organizations:

- Center for Disease Control and Prevention
- American Red Cross
- National Weather Service

DISCLAIMER:

The SAM990DW and SAM800HI are precautionary devices to warn of severely hot and humid conditions. Mannix recommends that each athlete consult their physician prior to strenuous exercise in extremely hot and humid conditions. Mannix accepts no responsibility for prior health conditions. Good judgement should be used in extreme weather conditions to remove athletes from the practice field to an indoor facility with air-conditioning.

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HEAT INDEX CHART

CHART "A"

Relative Humidity (%)

Ambient Temperature (°F)	35%	40%	45%	50%	55%	60%	65%	70%	75%	80%	85%	90%	95%
115°	143	151											
110°	130	137	143	150									
105°	118	123	129	135	142	149							
100°	107	110	115	120	126	132	138	144					
95°	98	101	104	107	110	114	119	124	130	136			
90°	91	93	95	96	98	100	102	106	109	113	117	122	
85°	85	86	87	88	89	90	91	93	95	97	99	102	105
80°	79	79	80	81	81	82	83	85	86	86	87	88	89
75°	73	74	74	75	75	76	76	77	77	78	78	79	79
70°	67	68	68	69	69	70	70	70	70	71	71	71	71

CHART "B"

Category	Heat Index (°F)	Environment	General effect on the human body
I	130° and higher	Extremely hot	Heat/sunstroke highly likely with continued exposure. High risk associated with activity.
II	105° to 130°	Very hot	Sunstroke, heat cramps or heat exhaustion likely and heatstroke possible with prolonged exposure and continued physical activity.
III	90° to 105°	Hot	Sunstroke, heat cramps and heat exhaustion possible with prolonged exposure and continued physical activity.
IV	80° to 90°	Very Warm	Fatigue possible with prolonged exposure and continued physical activity.

IMPORTANT: ANY NUMBER OVER 80° IS DANGEROUS!

RESOURCES

- National Weather Service, St. Louis, MO.; *Heat Index Chart;* Public Information Statement 064 ABUS34 KSTL 131712 PNSSTL; July 13, 1995.
- US Government, WSOM Issuance; *Heat Index Graph;* Exhibit C-11-2; US Government Printing Office; July 17, 1984.