SunDanzer®

SECOND GENERATION SUNDANZER VACCINE APPLIANCE

THE ***SUNDANZER DEVELOPMENT GROUP*** WORKING IN CONSULTATION WITH THE ***DIVINE AMBASSADORS' FOUNDATION (DIVAF)*** HAS DEVELOPED A SECOND GENERATION HIGH EFFICIENCY VACCINE STORAGE REFRIGERATOR DESIGNED TO FUNCTION IN

► *ENVIRONMENTS WITH -- UNRELIABLE POWER QUALITY -- INTERMITTENT POWER -- NO POWER*

► *THE DESIGN TEMPERATURE RANGE FOR THIS STORAGE UNIT IS 2⁰ C → 8⁰ C*

THIS UNIT EMPLOYS PATENTED THERMAL MEMORY TECHNOLOGY ENERGY STORAGE AND DIRECT DRIVE PHOTOVOLTAIC POWER TO PROVIDE MAXIMUM SECURITY TO THE DESIGN TEMPERATURE RANGE OVER A BROAD SPECTRUM OF ENVIRONMENTAL VARIABLES

► *THE BATTERY AND THE CHARGE CONTROLLER ARE REMOVED FROM THE SYSTEM*

► *THIS UNIT IS DESIGNED TO OPERATE WITH NO MAINTENANCE REQUIREMENTS FOR A 15+ YEARS SERVICE LIFE*

SUNDANZER VACCINE STORAGE STR-50 *(SECURE TEMPERATURE RANGE – 50 LITER CAPACITY)*

STR-50 / MODEL 2.1 *(SECOND GENERATION OF SUNDANZER DEVELOPMENT FOR VACCINE APPLIANCES UTILIZING THERMAL MEMORY TECHNOLOGY)*

- DEVELOPED IN COOPERATION WITH ***DIVAF*** AND IN COMPLIANCE WITH ***WORLD HEALTH ORGANIZATION*** SPECIFICATIONS FOR VACCINE STORAGE TEMPERATURE RANGES AND HOLDOVER FOR PHOTOVOLTAIC APPLIANCES IN TROPICAL CLIMATES
- POWERED BY AC (THROUGH RECTIFIER) OR INDEPENDENT PHOTOVOLTAIC DIRECT DRIVE DC
- CONTINUOUS MAINTENANCE OF DESIGN TEMPERATURE FOR SECURE VACCINE STORAGE
  - REQUIRES AN AVERAGE OF 30 CUMULATIVE HOURS OF POWER PER WEEK
- MAXIMUM THERMAL EFFICIENCY DESIGN
  - ENHANCED EVAPORATOR AND CONDENSER SURFACE AREA
  - OPTIMIZED REFRIGERANT CHARGE
  - TOP OPENING DOOR
- NON-ADJUSTABLE 2^0 C → 8^0 C TEMPERATURE RANGE
  - LOCKED THERMOSTAT
  - THERMAL STORAGE PACK VOLUME AND SPACING MATCHED TO TEMPERATURE RANGE
- DUAL INDEPENDENT INTERNAL TEMPERATURE MONITORS
  - INTERNAL MECHANICAL TEMPERATURE GAUGE
  - CASE MOUNTED LIGHT INDICATORS TO MONITOR THERMAL STORAGE PACK STATE OF CHARGE
- MICROPROCESSOR CONTROLLED COMPRESSOR
  - CONTROLS POWER TO COMPRESSOR TO MAXIMIZE POWER EFFICIENCY
  - EXTENDS COMPRESSOR EFFICIENCY AND SERVICE LIFE
  - REDUCES MAINTENANCE REQUIREMENTS
- LCD PANEL FOR MONITORING FULL SYSTEM INFORMATION
  - MOUNTED INSIDE COMPRESSOR COMPARTMENT FOR USE BY TECHNICIAN

FOR MORE INFORMATION VISIT US AT www.divaf.org OR E-MAIL US AT info@divaf.org

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▶ *DIRECT DRIVE PHOTOVOLTAIC* ALLOWS FOR THE USE OF SOLAR PANELS DIRECTLY CONNECTED TO THE MICROPROCESSOR WHICH CONTROLS POWER INPUT TO THE DC COMPRESSOR. THE BATTERY AND CHARGE CONTROLLER ARE REMOVED FROM THE SYSTEM.

▶ *THIS REMOVES THE POTENTIAL FAILURE POINTS AND THE MAINTENANCE REQUIREMENTS INTRODUCED BY THESE COMPONENTS.*

IN SITUATIONS WHERE SUFFICIENT POWER EXISTS THROUGH GRID OR GENERATORS, THE AC POWER IS RUN THROUGH A RECTIFIER TO CONVERT TO DC AND PREVENT SYSTEM DAMAGE FROM POOR QUALITY POWER SIGNALS.

▶ *ADDITIONAL FAIL-SAFES ALLOW FOR THE USE OF MULTIPLE DC POWER SOURCES IN THE EVENT OF PRIMARY POWER FAILURE ON AC OR DAMAGE/LOSS OF PHOTOVOLTAIC ARRAY ON DC*

▶ *THERMAL MEMORY TECHNOLOGY STORES THERMAL ENERGY INSTEAD OF ELECTRICAL ENERGY*. THIS ALLOWS FOR THE PLACEMENT OF THE ENERGY STORAGE MEDIUM IN SERIES AND THUS ALLOWS FOR MAXIMUM EFFICIENCY OF POWER STORAGE.

▶ *BATTERY FREE DIRECT DRIVE PHOTOVOLTAIC* WAS DEVELOPED BY *NASA* FOR MAINTENANCE FREE SOLAR POWERED REFRIGERATION IN REMOTE ENVIRONMENTS. ***SUNDANZER*** LICENSES THE TECHNOLOGY FROM NASA AND HAS IMPROVED THE INTEGRATION OF THIS TECHNOLOGY IN COMMERCIAL REFRIGERATION UNITS. THE ***SUNDANZER VACCINE STORAGE STR-50 / MODEL 2.1*** REPRESENTS THE

▶ *FOURTH GENERATION OF THERMAL MEMORY TECHNOLOGY PRODUCTS AND THE SECOND GENERATION AS APPLIED TO VACCINE STORAGE.*

▶ *AVERAGE ELECTRICAL CURRENT NECESSARY TO CONTINUOUSLY MAINTAIN THE DESIGN TEMPERATURE IS 30 HOURS PER WEEK.* THIS CAN OCCUR IN ANY CONFIGURATION. THE THERMAL STORAGE PACK IS INSENSITIVE TO STATE OF CHARGE AND PROVIDES THERMAL ENERGY TO A FULL DEPTH OF DISCHARGE. THERE IS NO REQUIREMENT TO LIMIT THE STATE OF CHARGE OR THE DEPTH OF DISCHARGE BETWEEN CYCLES.

ABOUT DIVAF

DIVAF IS AN NGO /NON-PROFIT ORGANIZATION BASED IN LAGOS, NIGERIA WHICH CONDUCTS HUMANITARIAN HEALTH AND QUALITY OF LIFE PROGRAMS IN THE URBAN AREAS AND REMOTE VILLAGES OF WEST AFRICA. THE FOCUS OF DIVAF PROGRAMS ARE DIRECTED AT CHILDREN AND WOMEN WITH THE GOAL OF IMPROVING HEALTH AND QUALITY OF LIFE FOR THE COMMUNITIES WE TOUCH.

THE ECONOMIC PRINCIPLES LEADING TO THE CREATION OF VALUE ARE THE SAME FOR ANY ORGANIZATION; WHETHER IT BE COMMERCIAL, HUMANITARIAN, OR POLITICAL. WHAT MAY BE DIFFERENT ARE THE TOOLS AVAILABLE TO MEASURE THE VALUE CREATED.

IN OUR ORGANIZATION, AS IS TRUE WITH ANY ORGANIZATION, WE CAN MEASURE THE OUTFLOWS OF VALUE IN TERMS OF A MONETARY CURRENCY. WE CAN MEASURE THE EFFICIENCY OF OUR OPERATIONS WITH THIS TOOL BY SEEKING TO MAXIMIZE THE SERVICES OFFERED PER UNIT OF CURRENCY AVAILABLE AND THE TIME, EXPERTISE, AND DEDICATION OF OUR VOLUNTEERS.

AS A HUMANITARIAN ORGANIZATION THE MEASUREMENT OF VALUE RECEIVED AND VALUE CREATED IS MUCH MORE DIFFICULT, LESS PRECISE, AND LONGER TERM. OUR OUTFLOW OF VALUE IS AN INVESTMENT IN THE FUTURE OF THE PEOPLE WE TOUCH, AND THE INFLOW OF VALUE IS RECEIVED BY THE COMMUNITIES THEY INHABIT. WE STRIVE TO IMPROVE THEIR QUALITY OF LIFE AND THE HORIZONS OF THEIR DREAMS AND AMBITIONS ALLOWING THE VALUE CREATED TO BE GREATER THAN THE VALUE INVESTED.

OUR GOAL IS TO SERVE AS AN EFFICIENT VEHICLE TO DIRECT THE INVESTMENT OF OUR DONORS IN A MANNER THAT WILL ACHIEVE THE MAXIMUM RETURN OF VALUE IN OUR DEFINED AREA OF INTEREST. OUR FUNCTION IS TO ADD VALUE TO ENSURE THE VALUE OF THE OUTPUTS ARE GREATER THAN THE VALUE OF THE INPUTS THROUGH THE DEDICATION AND COMMITMENT OF OUR STAFF, OUR VOLUNTEERS, AND OUR DONORS.

DR. KEMI AILOJE MD
FOUNDER AND CEO

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