

## **Technical Data Sheet**

Forma Ultra-Low Temperature Upright Freezer

MODEL RELEASE - 20

Thermo Fisher Scientific, Marietta, Ohio

Specification         T230A           Application         Storage volume         Storage volume           Storage volume         499 Lites /r12 A Cubic Feet           Temperature Raing         -10°C to -40°C           Electrical Power         120V 50 Lite /r12 A Cubic Feet           Building Supply Raing         15.0A (min) dedicated grounded circul: Protected by circul breaker rated for inductive loads.           Building Supply Raing         15.0A (min) dedicated grounded circul: Protected by circul breaker rated for inductive loads.           Pewer PugPower Cord Length         Non-Corrosive, Non-Flarmable, Non-Explosive, Good Air Ventilation, 18° C - 32° C (64.4° F - 89.6° I           Application Environment         Non-Corrosive, Non-Flarmable, Non-Explosive, Good Air Ventilation, 18° C - 32° C (64.4° F - 89.6° I           Ratigeration System         Indoor Use Only           Concesser, Number         Enhanced Fined-Tube and Foread-Air Cooled / 1           Expension Breake         Cool Well Win Explosive, Cool Air Ventilation, 18° C - 32° C (64.4° F - 89.6° I           Concesser, Number         Enhanced Fined-Tube and Foread-Air Cooled / 1           Expension Breaker         Controller/Electrical System           Concesser, Number         Controller/Electrical System           Controller/Electrical System         Controller/Electrical System           Controller/De         Moraprocesse Control									
Application         Storage Volume           Storage Volume         489.9 Liters / 17.3 Cubic Feet           Temperature Raing         -10°C to -40°C           Electrical Power         120V 60 Hz, 1 Phase           Instrument Raing         15.0 A (min) dedicated grounded circuit. Protected by circuit breaker rated to inductive loads.           Power PlugPower Cock Longth         Non-Corrosive, Non-Flammable, Non-Explosive, Good Air Ventilation, 18° C -32° C (64.4° F - 89.8° Indocrosive).           Approx Listings         UL, oUL, FDA           Indocrosive, Non-Flammable, Non-Explosive. Good Air Ventilation, 18° C -32° C (64.4° F - 89.8° Indocrosive).         Sold Miters (10 Feet)           Approx Listings         UL, oUL, FDA         Sold Miters (10 Feet)           Retriggeration System         Indocrosive, Non-Flammable, Non-Explosive. Good Air Ventilation, 18° C - 32° C (64.4° F - 89.8° Indocrosive).           Retriggeration System         Indocrosive Configuration           Compressor Capacity         Einhanced Finand-Tilke and Forced-Air Cooled / 1           Compressor System         Cold Wall With Enhanced Heat Transfer Treatment           Device Switch         On-Orr with Circuit Breaker           Controller Loval         Non-Orr with Circuit Breaker           Controller Typ         Cold Wall With Enhanced Finand-Retures           Controller Typ         Controller Keaters         Sold N (N)	Specifications	Model Number							
Application         Storage of Ceneral Icon-flammable) Laboratory Metrials           Storage Volume         489 Ellics (17 3 Cubic Feat           Temperature Raing         -10°C to -40°C           Electrical Power         120 Ko H., 1° Phase           Instrument Rated Current         15.0A (min) dedicated grounded circuit. Froutected by circuit breaker rated for inductive loads           Power PugPtwort Cost Longth         NEMA 5-15° / IEC Costs, 3.048 Meters (10° Feat)           Application Extingent         Non-Corrusive, Non-Flammable, Non-Explosive, Good AF Ventilation, 18° C - 32° C (64.4° F - 88.0° / I           Rafiguration System         Indoor Use done stage System         Indoor Use done stage System           Compressor / Number         Enhanced Finned-Tube and Use and Wet System         Cond Ventilation, 18° C - 32° C (64.4° F - 88.0° / I           Compressor / Number         Enhanced Finned-Tube and Use and Ventilation, 18° C - 32° C (64.4° F - 88.0° / I           Definest Nethod         Metric Compressor / Number         Enhanced Finned-Tube and Use and Ventilation, 18° C - 32° C (64.4° F - 88.0° / I           Contraster System         Cond Well With Enhanced Inceed Air Cooled / I         Enhanced Finned-Tube and Ventilation, 18° C - 32° C (64.4° F - 88.0° / I           Contraster System         Cond Well With Enhanced Inceed Air Cooled / I         Enhanced Finned-Tube and Ventilation, 18° C - 32° C (64.4° F - 88.0° / I           Controaster Capacity         Contraster System	Specifications								
Storage Volume         489.9 Liters / 17.3 Cubbe Feet           Temperature Rating         -10°C to -40°C           Electrical Power         1320/ 60 Hz, I Phase           Instrument Rated Current         16 AMP           Building Supply Rating         15.0 A (min) dedicated grounded circuit. Protected by circuit breaker rated for inductive loads.           Power Pue/Power Code Longh         NEMA F-15P / IEC Code, 3.048 Merces (10 Feet)           Agency Listing         Indoor Uses Only           Approx Pue/Power Code Longh         Non-Corrosive, Non-Flammable, Non-Explosive, Good Xir Vertilation, 18° C - 32° C (84.4° F - 89.6° I           Refrigeration System         Industrial-Rated done stage System           Compressor Capacity'         B67 W           Condensor Type         Cold Wall With Enhanced Heat Transfer Treatment           Defrost Method         Marual Defrost           Refrigeration System         Controller/Electrical System Configuration and Features           Controller Type         Cold Wall With Enhanced Heat Transfer Treatment           Defrost Method         Marual Defrost           Refrigeration Targe/Fammability         Controller/Electrical System Configuration and Features           Controller Lovel         Top           Power Switch         On-Off with Circuit Breaker           Controtion Side Sound         Sing B10 O Montel Marual Defro	Application								
Electrical Power         120V 60 Hz, 1 Phase           Instrument Rate Current         10 AMP           Building Supply Rating         15.0A (min) decidented grounded circuit. Protected by circuit breaker rated for inductive loads. Pewer PugPewer Workswitch 10 Feat)         Agency Listing           Power PugPewer Workswitch         10 AMP         UL. cULF, FDA           Indoor Outsource Code Langth         Non-Corrosive, Non-Flammable, Non-Explosive, Good Art Vertilation, 18° C - 32° C (64.4° F - 89.6° I           Refrigeration System         Indoor Outsource         Congressor Copacity           Compressor Capacity         97 W           Congressor Capacity         97 W           Congressor Capacity         97 W           Congressor Capacity         97 W           Condrusser Type         Cold Wall With Enhanced Heat Transfer Treatment           Derivation Device         Controller/Electrical System Configuration and Features           Controller Level         Top           Power Switch         On-Off with Circuit Breaker           Controller Level         Top           Controller Lev		489.9 Liters / 17.3 Cubic Feet							
Instrument Rated Current 10 AMP Building Supply Rating 15.0A (min) decidented grounded circuit. Protected by circuit breaker rated for inductive loads. Power PugPower Cort Longin NEMA 5-15P / IEC Cords. 3.048 Meters (10 Feet) Agency Listings Inductive loads. Power PugPower Cort Longin NemA 5-15P / IEC Cords. 3.048 Meters (10 Feet) Agency Listings NemA 5-15P / IEC Cords. 3.048 Meters (10 Feet) Agency Listings NemA 5-15P / IEC Cords. 3.048 Meters (10 Feet) Agency Listings NemA 5-15P / IEC Cords. 3.048 Meters (10 Feet) Agency Listings NemA 5-15P / IEC Cords. 3.048 Meters (10 Feet) Agency Listings NemA 5-15P / IEC Cords. 3.048 Meters (10 Feet) Agency Listings NemA 5-15P / IEC Cords. 3.048 Meters (10 Feet) Agency Listings NemA 5-15P / IEC Cords. 3.048 Meters (10 Feet) Agency Listing NemA 5-15P / IEC Cords. 3.048 Meters (10 Feet) Agency Listings NemA 5-15P / IEC Cords. 3.048 Meters (10 Feet) Retriguents System Cords. 3.048 Meters (10 Feet) Retriguents System Cords. 3.048 Meters (10 Feet) System NemA 5-15P / IEC Cords. 3.048 Meters (10 Feet) System NemA 5-15P / IEC Cords. 3.048 Meters (10 Feet) System NemA 5-15P / IEC Cords. 3.048 Meters (10 Feet) System NemA 5-15P / IEC Cords. 3.048 Meters (10 Feet) System NemA 5-15P / IEC Cords. 3.048 Meters (10 Feet) System NemA 5-15P / IEC Cords. 3.048 Meters (10 Feet) System NemA 5-15P / IEC Cords. 3.048 Meters (10 Feet) System Security NemA 5-15P / IEC Cords. 3.048 Meters (10 Feet) System Security NemA 5-15P / IEC Cords. 3.048 Meters (10 Feet) System Security High Pressure Cutout Switch-High Temp Cutout Switch-Violage Torotection Cortroled Feet Secure (10 Feet) System NemA 14m Terminals Ret48, 4-20m, Div Cortacts Agency Listen Cords. 3.048 Meters (10 Feet) NemA 5-15P / IEC Cords. 3.048 Meters (10 Feet) NemA 5-15P / IEC Cords. 3.048 Meters (10 Feet) NemA 5-15P / IEC Cords. 3.048 Meters (10 Feet) NemA 5-15P / IEC Cords. 3.048 Meters (10 Feet) NemA 5-15P / IEC Cords. 3.048 Meters (10 Feet) NemA 5-15P / IEC Cords. 3.048 Meters (10 Feet) NemA 5-15P / IEC C									
Building Supply Rating         15.0A (min) dedicated grounded oricuit. Protected by circuit breaker s(10 Feel)           Power PupPwer Cord Length         NEMA 5-169 / ICC Cords, 3.04B Metters (10 Feel)           Agarcy Latings         UL, oUL, FDA           Indoor/Outsour Usage         Indoor/Outsour Usage           Agarcy Latings         UL, oUL, FDA           Indoor/Outsour Usage         Indoor/Outsour Usage           Refrigeration System         Non-Corrosive. Non-Flammable, Non-Explosive, Good Air Ventilation, 18° C - 32° C (64.4° F - 89.6° I           Refrigeration System         Induotion Concernsol Ventilation, 18° C - 32° C (64.4° F - 89.6° I           Compressor Capacity         967 W           Condreast Type         Cold Wall Wite Enhanced Heart Transfer Treatment           Defrost Method         Nanual Defrost           Refrigeration Device         Top           Prover Switch         On-Off with Circuit Breaker           Controller Level         Top           Prover Switch         On-Off with Circuit Breaker           Controller Seear         Stage RTD (1000 Other Pelitrum RTD)           Controller Seear         Stage RTD (1000 Other Pelitrum RTD)           Controller Seear         Stage RTD (1000 Other Pelitrum RTD)           Controller Seear         Fully Adjustable           Controller Seear         Stage RTD (10									
Power PlugPewer Cort Langth         NEMA 5-167 / IEC Cords, 3048 Meters (10 Feel)           Agercy Listings         UL, CUL, FDA           Indoor Usedon Usage         Indoor Usedon Usage           Application Environment         Non-Corrosive, Non-Flammable, Non-Explosive, Cood Air Ventilation, 19° C - 32° C (64.4° F - 89.6° I           Refrigeration System         Industrial-fact and on-stage System           Compressor / Number         Hermetic Compressor for Low Temperature Application / 1           Compressor / Number         Enhanced Finned-Tube and Forced-Air Cooled / 1           Expansion Device         Controller/Law I Franced Heat Transfer Treatment           Dardoness TyneNumber         Controller/Law I Franced Heat Transfer Treatment           Refrigerant Charge/Filammable         Controller/List Electrical System Confliguration and Features           Controller/Law I         Top           Power Switch         On-Off with Circuit Breaker           Controller/Sectional Statum         Might Pressure Cutout Switch/High Temp Cutou           Controller Law I         Top           Controller Section         Single RTD (1000 onter Heatman RTD)           Remote Aam Teminals         Refrequence Section           Statuber State Guard         Dimensions and Construction           Control Sensor         Refrequence Section           Statuber State State State State State									
Agency Listings Indoor Use point of the second seco									
Indoar Use Only Application Environment Non-Corrosive, Non-Flammable, Non-Epidemics, Good Air Ventilation, 19°C - 32°C (64.4° F - 89.6° I Refrigeration Configuration Compressor J Number Compressor J Number Compressor J Number Compressor J Number Compressor J Number Compressor J Number Compressor J Number Experison Device Capability Tube Experison Device Capability Tube Experison Device Capability Tube Controller Level Controller Level Control Resort Control Resort Con	· · · · ·								
Application Environment         Non-Corrosive, Non-Flammabile, Non-Explosive, Good Air Ventilation, 18° C - 32° C (64.4° F - 89.6° 1           Refriguration System         Industrial-Rated one-stage System           Compressor / Number         Hermelic Compressor for Low Temperature Application / 1           Compressor / Number         Enhanced Finned Tube and Forced-Air Cooled / 1           Expansion Device         Capillary Tube           Expansion Device         Capillary Tube           Expansion Device         Capillary Tube           Controller Level         Controller/Electrical System Configuration and Features           Controller Level         Top           Controller Level         Top           Controller Type         Microprocess Control           Stage Rand         On-Off with Circuit Breaker           Controller Type         No           Controller Type         No           Controller Type         Microprocess Control           Stage Rand         On-Off with Circuit Breaker           Controller Type         No           Controllex Wald <td></td> <td></td>									
Refrigeration Configuration           Refrigeration System         Industrial Rated on-stage System           Compressor Capacity         067 W           Compressor Capacity         067 W           Condenser Type Number         Enhanced Finned-Tube and Forced-Air Cooled / 1           Expansion Device         Capalitary Tube           Expansion Device         Controller/Lectrical System Configuration and Features           Refrigerar Charge Flammability         RAOAA Non-Flammabia           Refrigerar Charge Flammability         RAOAA Non-Flammabia           Controller Level         Top           Power Switch         On-Off with Circuit Breaker           Controller Type         Microprocess Control           Suppoint Security         No           Controller Seasor         Single RTD (1000 ohm Platinum RTD)           Remote Aam Farmuals         REVEX 2000 ohm Platinum RTD)           Remote Aam Farmuals         Fully Adjustable           Auto-Voltage Stateguard         Buck/Boot Switem           Dimensions (H x D x W)         1070 H x 864 D x 566 W mm (81.5 H x 25.4 D x 2.1 W in.)           Stateford Dimensions (H x D x W)         1070 H x 864 D x 21.2 W mm (7.7 ab x 1.8 W in.)           Stateford Dimensions (H x D x W)         1070 H x 864 D x 21.2 W mm (7.7 ab x 1.8 W in.)           Stateford Aam Sacobe V Refres									
Refrigeration         Industrial-Rated one-stage System           Compressor (Another Compressor (Another Devices)         BG W           Condenser TypesNumber         Enhanced Finned-Tube and Forced-Air Cooled / 1           Expansion Device         Capiliary Tube           Expansion Device         Capiliary Tube           Expansion Device         Capiliary Tube           Expansion Device         Capiliary Tube           Expansion Device         Controller/System Configuration and Features           Controller/Tope         Controller/System Configuration and Features           Controller/Tope         Top           Power Switch         On-Off with Circuit Breaker           Controller/Type         Microprocess Control           Samo         Single RTD (1000 off m Piatrium RTD)           Render Aam         Fully Adjustable           Adjustable WarmCold Alarma         Fully Adjustable           Auto-Vorage Safeguard         Duck/Boost System           Dimensions (H X D x W)         1308 H X 645 D x 568 W mn (51.64 X 35.9 W in.)           Shipping Dimensions         2206 H x 1150 D x 1002 W mm (126.24 X 45.0 X 35.9 W in.)           Shipping Dimensions (H X D x W)         1308 H X 645 D x 568 W mn (51.64 X 45.0 Y 45.8 W in.)           Insulation         High Density Polyurethane Foam, R-30 (102-X 40 K 100 L X 40 K 100 L X 40 K 100 L									
Compressor / Number         Hermetic Compressor for Low Temperature Application / 1           Compressor / Spacify         967 W           Condenser Typer/Number         Enhanced Finned-Tube and Forced-Air Cooled / 1           Expansion Device         Capillary Tube           Expansion Device         Capillary Tube           Expansion Device         Capillary Tube           Expansion Device         Controller Electrical System Configuration and Features           Controller Lavel         Top           Power Switch         On-Off with Circuit Breaker           Controller Type         Microprocess Control           Septoint Security         No           Controller Security         No           Controller Security         No           Controller Alares         R548,4,200nA, Dury Contacts           Auto-Voltage Safeguard         BuckRoots System           Dimensions and Construction         Dimensions and Construction           Interior Dimensions         Capacity System           Dimensions         Capacity System           Dimensions (H x D x W)         1936 H x 645 D x 1062 W mm (61: 5H x 45.5 D x 4.8 W m.)           Stainless Steel Shows Ox 912 W mm (7: 9H x 38.9 D x 38.0 W m.)         Show N.)           Shipping Dimensions         Capacity Show Cool System	Refrigeration System								
Condenser Type/Number         Enhanced Finned-Tube and Forced-AI1           Expansion Device         Capilary Tube           Expansion Device         Cold Wall With Enhanced Heat Transfer Treatment           Defrost Method         Manual Defrost           Refigerar Charger Fiarmability         Controller/Lectrical System Configuration and Features           Controller Level         Top           Power Switch         On-Off with Circuit Breaker           Controller Type         Microprocess Control           Seption Security         NO           Commersaor Safe Guard         High Pressure Cutout Switch/Vigh Temp Cutout Switch/Current protection/Logic protection           Controller Security         NO           Commersaor Safe Guard         Fully Adjustable Warm/Cold Alarms           Adjustable Warm/Cold Alarms         Fully Adjustable Warm/Cold Alarms           Adjustable Warm/Cold Alarms         Fully Adjustable Warm/Cold Alarms           Auto-Voltage Safeguard         BuckBoost System           Dimensions (H x D x W)         1306 H x 464 D x 566 W mm (61.5 H x 25.4 X 23.1 W in.)           Enterior Dimensions (H x D x W)         1306 H x 464 D x 268 M 25.5 D x 41.8 W in.)           Insulation         High Density Polyuratinane Foam, R-30 (CurP-Fin/Ru)           Door Seal         3 Stainless Steel Shelves Adjustable in 25 mm (1 in Increment, Maxmum Capacity/Shel									
Expansion Device       Copilary Tube         Evaporator Type       Cold Wall With Enhanced Heat Transfer Treatment         Defrost Method       Manual Defrost         Refragram Charge/Fiarmability       RA04A / Non-Fiarmabile         Controller/Lexitical System Configuration and Features         Controller/Lexitical System Control Sensor         Control Sensor         Remote Aarm Terminals         Refragers         Dimensions and Construction         Interior Dimensions (H x D x W)         1978 H x 864 D x 956 W mm (61:5 H x 26:4 D x 36:3 W in.)         Shipping Dimensions       2086 H x 1156 D x 1062 W mm (62:5 H x 36:4 D x 36:3 W in.)         Shipping Dimensions (H x D x W)       1978 H x 864 D x 956 W mm (61:5 H x 26:4 D x 36:5 D x 41.8 W in.)         Insulation       Hiph Density Polyurethane Coarset         Door Seal       Stainless Steal Shelves Adjuetablo in 20:0 C in N2:6 C in N2:6 C in N2:6 C in	Compressor Capacity*								
Evaporator Type         Cold Wall With Enhanced Heat Transferr           Defrost Method         Manual Defrost           Refrigerant Charge/Flammability         R404A / Non-Flammabile           Controller Level         Top           Power Switch         On-Off with Circuit Breaker           Controller Type         Microprocess Control           Suppoint Security         NO           Commersory Safe Guard         High Pressure Cutout Switch/Virght Term Cutout Switch/Virght Sale           Adjustable Warm Coid Alarms         Fully Adjustable           Auto-Voltage Safeguard         BluckBoosl System           Interior Dimensions (H X D X W)         1300 H X 645 D X 566 W mm (61.5 H X 25.6 J X 41.8 W in.)           Shipping Dimensions         206 H X 1156 D X 1052 K mm (62.5 H X 41.8 W in.)           Insulation         High Density Polyurethane Fearmace Seal Gaskut           Shipping Dimensions         206 H X 1156 D X 1062 K mm (25.5 H X 41.8 W in.)           Insulation         High Density Polyurethane Fearmace Seal Gaskut           Outro  Seal         Standard with Locks           Unit Weight         Approximately 290 kg / 64	Condenser Type/Number	Enhanced Finned-Tube and Forced-Air Cooled / 1							
Defrost Method         Manual Defrost           Refrigerant Charge/Flammability         Controller/Electrical System Configuration and Features           Controller Level         Top           Power Switch         Or-Off with Circuit Breaker           Controller Security         NO           Controller Geurid         NO           Controller Security         NO           Control Render Security         NO           Control Render Geurid         Single RTD (1000 ohm Platinum RTD)           Render Alam Terminals         RS485, 4-20mA, Dry Contacts           Adjustable WarnCold Alams         Fully Adjustable           Burk Social System         Dimensions and Construction           Interior Dimensions (H x D x W)         130 Bt H x 645 D x 586 W mm (61.5 H x 25 A D x 33.1 W in.)           Stellor Dimensions (H x D x W)         130 Bt H x 645 D x 586 W mm (62.5 H x 45.5 D x 41.8 W in.)           Stellor Dimensions (H x D x W)         130 Bt H x 64 D x 1062 W mm (62.6 H x 45.5 D x 41.8 W in.)           Stellor Dimensions (H x D x W)         130 Bt H x 64 D x 200 W mm (62.6 H x 45.5 D x 41.8 W in.)           Stellor Dimensions (H x D x W)         130 Bt R x 64 D x 1062 W mm (62.6 H x 45.5 D x 41.8 W in.)           Disping Dimensions         2096 H x 115 D x 1062 W mm (62.6 H x 45.5 D x 41.8 W in.)           Insping Dimensions         200 Bt x 64 D x 200 Kg / 640 Bs. <td>•</td> <td></td>	•								
Refrigerant Charge/Flammable       Controller/Electrical System Configuration and Features         Controller Level       Top         Power Switch       On-Off with Circuit Breaker         Controller Type       Nicroprocess Control         Setpoint Security       NO         Compressor Safe Guard       High Pressure Cutout Switch/High Temp Cutout Switch/Current protection/Logic protection         Compressor Safe Guard       RS485, 4-20mA, Dry Contacts         Adjustable Warm/Cold Alarms       Fully Adjustable         Auto-Voltage Safeguard       Buck/Boost System         Dimensions Alarm Terminals       RS485, 4-20mA, Dry Contacts         Adjustable Warm/Cold Alarms       Fully Adjustable         Auto-Voltage Safeguard       Buck/Boost System         Interior Dimensions (H x D x W)       1308 H x 645 D x 586 W mm (51.5 H x 25.4 D x 23.1 W in.)         Sheping Dimensions       2.096 H x 1165 D x 162 W mm (21.5 H x 45.5 D x 43.5 D x 10.8 W in.)         Insulation       High Density Polyuethane Foam, R-30 (162-F-hr/Blu)         Door Seal       Silicone-Based High Performance Safe Hormane Vale Caset         Shelves / Capacity       3 Stainless Steel Shelves Adjustable In 25 mm (1 in) Increment; Maximum Capacity/Shelf: 45.4 kg (100 Li         All-Direction Casters       Stainless Steel Shelves Adjustable Performance Caracteristics in 20 ° C Ambient         Unit Veright									
Controller/Electrical System Configuration and Features           Controller/Level         Top           Power Switch         On-Off with Circuit Breaker           Controller Type         Microprocess Control           Setpoint Security         NO           Compressor Safe Guard         High Pressure Cutout Switch/High Temp Cutout Switch/Current protection/Logic protection           Controller Type         NO           Compressor Safe Guard         High Pressure Cutout Switch/High Temp Cutout Switch/Current protection/Logic protection           Controller Security         NO           Controller Security         NO           Controller Type         NO           Controller Type         NO           Controller Security         NO           Controller Security         NO           Remote Alarm Terminals         RS485, 4-20mA, Dry Contacts           Adjustable Warm/Coid Alarms         Fully Adjustable           Auto-Votage Seleguard         DuckBoost System           Interior Dimensions (H x D x W)         1308 H x 664 D x 586 W mm (815 H x 25 A D x 23.1 W in,)           Insulation         High Density Polyurethane Foam, R-30 (ft2-Fh/Ritu)           Door Seal         Stainless Steel Shelves Adjustable In Zam (1 in) Increment; Maximum Capacity/Shelf: 45.4 kg (100 LI           Add With Locks									
Controller Level         Top           Power Switch         On-Off with Circuit Breaker           Controller Type         Microprocess Control           Setpoint Security         NO           Compresson Safe Guard         High Pressure Cutoul Switch/High Temp Cutoul Switch/Current protection/Logic protection           Controls Sensor         Single RTD (1000 ohm Plathum RTD)           Remote Nam Terminals         RS465, 4-20 CMA, Dry Contacts           Adjustable Warm/Cold Alarms         Fully Adjustable           Auto-Voltage Safeguard         Buck/Boost System           Dimensions and Construction         Interior Dimensions (H x D x W)           130B H x 645 D x 568 W mm (51.5 H x 45.5 D x 24.1 & W in.)         Exterior Dimensions (H x D x W)           Shipping Dimensions         2096 H x 1156 D x 1062 W mm (82.5 H x 45.5 D x 44.8 W in.)           Insulation         High Density Polyurethane Foam, R.30 (ft2.°F-In/Rtu)           Door Seal         3 Stainless Steel Shelves Adjustable In 25 mm (1 in) Increment, Maximum Capacity/Shelf: 45.4 kg (100 LI           All-Direction Casters         Stainless Steel Shelves Adjustable In 25 mm (1 in) Increment Maximum Capacity/Shelf: 45.4 kg (100 LI           All-Direction Casters         Stainless Steel Shelves 4.0 Cope           Unit Weight         Approximately 290 kg / 640 lbs.           Other Options         Trace Fireformance C Haracteristics in 20 °	Reingerant Charge/Flammability	I. A second s							
Power Switch         On-Off with Circuit Beraker           Controller Type         Microprocess Control           Setpoint Security         NO           Compressor Safe Guard         High Pressure Cutout Switch/High Temp Cutout Switch/High Temp Cutout Switch/High Temp Cutout Switch/Light Temp Cutout Switch/L	Controller Level								
Controller Type         Microprocess Control           Setpoint Security         NO           Compressor Set & Guard         High Pressure Cutout Switch/High Temp Cutout Switch/Current protection/Logic protection           Control Sensor         Single RTD (1000 ohm Plathum RTD)           Remote Nam Terminals         RS485, 4-200M, Dry Contacts           Adjustable Warm/Cold Alarms         Fully Adjustable           Auto-Voitage Safeguard         Buck/Boost System           Dimensions and Construction         Dimensions and Construction           Interior Dimensions (H x D x W)         1308 H x 645 D x 586 W mm (51.5 H x 25.4 D x 23.1 W in.)           Shipping Dimensions         2096 H x 1156 D x 1062 W mm (82.5 H x 45.5 D x 41.8 W in.)           Insulation         High Density Polyurethane Foam, R-30 (ft2.*F-In/Rtu)           Door Seal         Silicone-Based High Performance Seal Gasket           Shipping Dimensions         2096 H x 1156 D x 1062 W mm (82.5 H x 45.5 D x 41.8 W in.)           All-Direction Casters         Stainless Steel Shelves Adjustable In 25 mm (1 in) Increment; Maximum Capacity/Shelf: 45.4 kg (100 LL           All-Direction Casters         Stainless Steel Shelves Adjustable In 25 mm (20.7 C Ambient           Variative/setuit-40 part of the graft U149 of 400 Coc         Tatult seles shurder of McO Number:           Variative/setuit-40 part of the graft U149 of 400 Coc         Tatult seles shurder of McO Number									
Setpoint Security         NO           Compressor Sate Quard         High Pressure Cutout Switch/High Temp Cutout Switch/Current protection/Logic protection           Control Sensor         Single RTD (1000 ohm Platinum RTD)           Remote Alarm Terminals         R5485, 4-20mA, Dry Contacts           Adjustable Warm/Cold Alarms         Fully Adjustable           Auto-Voltage Safeguard         Buck/Boost System           Interior Dimensions (H x D x W)         1308 H x 645 D x 586 W mm (51.5 H x 25.4 D x 23.1 W in.)           Shipping Dimensions         2096 H x 1156 D x 1062 W mm (72.1 H x 38.9 D x 35.9 W in.)           Shipping Dimensions         2096 H x 1156 D x 1062 W mm (72.1 H x 38.9 D x 35.9 W in.)           Shipping Dimensions         2096 H x 1156 D x 1062 W mm (72.1 H x 38.9 D x 35.9 W in.)           Insulation         High Density Polyurethane Foam, R-30 (ft2.4 F-hr/Btu)           Door Seal         Stainless Steel Shelves Adjustable In 25 mm (1 in) Increment; Maximum Capacity/Shelf: 45.4 kg (100 Lt           All-Direction Casters         Stainless Steel Shelves Adjustable In 25 mm (2 / 640 lbs.           Unit Weight         Approximately 280 (f40 lbs.           Other Options         Electronic Recorder and CO2 or LN2 Back-Up System           Typical Performance Characteristics in 20 ° C Ambient         32.0 / 12.0									
Compressor Safe Guard         High Pressure Cutout Switch/High Temp Cutout Switch/Current protection/Logic protection           Control Sensor         Single RTD (1000 ohm Platnum RTD)           Remote Alarm Terminals         R5485, 4-20mA, Dry Contacts           Adjustable Warm/Cold Alarms         Fully Adjustable           Auto-Voltage Safeguard         Buck/Kboost System           Interior Dimensions (H x D x W)         1308 H x 645 D x 586 W mm (51.5 H x 25.4 D x 23.1 W in.)           Exterior Dimensions (H x D x W)         1978 H x 388 D x 912 W mm (77.9 H x 389 D x 332 W in.)           Shipping Dimensions         2096 H x 1156 D x 1062 W mm (82.5 H x 45.5 D x 41.8 W in.)           Insulation         High Density Polyurethane Foram, R-30 (ft2-'F-hr/Btu)           Door Seal         Stainless Steel Shelves Adjustable In 25 mm (1 in) Increment; Maximum Capacity/Shelf: 45.4 kg (100 Lt           All-Direction Casters         Stainless Steel Shelves Adjustable In 25 mm (2 in Nameent; Maximum Capacity/Shelf: 45.4 kg (100 Lt           Other Options         Electronic Recorder and CO2 or IN2 Back-Up System           Typical Performance Characteristics in 20 ° C Ablient         Winable           Vision Performance Characteristics in 20 ° C Ablient         Winable           Vision Performance Sister Shere Performance Sister Shere Performance Shere Performance Sister Shere Performance Shere Performance Shere Performance Shere Performance will differ due to product amount, product size and operating conditions.	•••								
Remote Alarm Terminals       RS485, 4-20m, A, Dy Contacts         Adjustable Warm/Cold Alarms       Fully Adjustable         Autu-Voltage Safeguard       Buck/Boost System         Interior Dimensions (H x D x W)       1308 H x 645 D x 586 W mm (51.5 H x 25.4 D x 23.1 W in.)         Scheror Dimensions (H x D x W)       1308 H x 645 D x 586 W mm (51.5 H x 25.4 D x 23.1 W in.)         Scheror Dimensions (H x D x W)       1308 H x 645 D x 1062 W mm (77.9 H x 38.9 D x 33.9 W in.)         Shipping Dimensions       2096 H x 1156 D x 1062 W mm (82.5 H x 45.5 D x 41.8 W in.)         Insulation       High Density Polyurethane Foam, R-30 (ft2.°F-hr/Btu)         Door Seal       3 Stainless Steel Shelves Adjustable In 25 mm (1 in) Increment; Maximum Capacity/Shelf: 45.4 kg (100 Lt         All-Direction Casters       Stainless Steel Shelves Adjustable In 25 mm (1 with Locks         Unit Weight       Approximately 290 kg / 640 lbs.         Other Options       Electronic Recorder and CO2 or LN2 Back-Up System         Typical Performance Characteristics in 20 ° C Ambient       19220 Adi         Typical Performance Share Ad0CCycle (0)		High Pressure Cutout Switch/High Temp Cutout Switch/Current protection/Logic protection							
Adjustable Warm/Cold Marms       Fully Adjustable         Auto-Voltage Safeguard       Buck/Boots System         Dimensions and Construction       Dimensions and Construction         Interior Dimensions (H × D × W)       1308 H × 645 D × 586 W mm (51.5 H × 25.4 D × 23.1 W in.)         Shipping Dimensions       2096 H × 1156 D × 1062 W mm (82.5 H × 45.5 D × 41.8 W in.)         Insulation       High Density Polyurethane Foam, R-30 (ft2.°F-hr/Btu)         Door Seal       Silicone-Based High Performance Seal Gasket         Shelves / Capacity       3 Stainless Steel Shelves Adjustable In 25 mm (1 in) Increment, Maximum Capacity/Shelf: 45.4 kg (100 LI         All-Direction Casters       Standard with Locks         Unit Weight       Approximately 290 kg / 640 lbs.         Other Options       Electronic Recorder and CO2 or LN2 Back-Up System         Typical Performance Characteristics in 20 ° C Ambient       1920-641         Job	Control Sensor								
Auto-Voltage Safeguard       Buck/Boost System         Interior Dimensions (H x D x W)       1308 H x 645 D x 586 W mm (51.5 H x 25.4 D x 23.1 W in.)         Exterior Dimensions (H x D x W)       1978 H x 988 D x 912 W mm (77.9 H x 38.9 D x 35.9 W in.)         Shipping Dimensions       2096 H x 1156 D x 1062 W mm (77.9 H x 38.9 D x 35.9 W in.)         Insulation       High Density Polyurethane Foam, R-30 (ft2-%Fhr/Btu)         Door Seal       Silicone-Based High Performance Seal Gasket         Shelves / Capacity       3 Stainless Steel Shelves Adjustable In 25 mm (1 in) Increment; Maximum Capacity/Shelf: 45.4 kg (100 Lt         All-Direction Casters       Standard with Locks         Unit Weight       Approximately 290 kg / 640 lbs.         Other Options       Electronic Recorder and CO2 or LN2 Back-Up System         Typical Performance Characteristics in 20 * C Ambient         12 cert typingtUt-40,Pat Down and Warm Up       13 cert typingtUL-40,Pat Down and Warm Up         20 down and Warm Up       13 cert typingtUL-40,Pat Down and Warm Up         21 cert typingtUt-40,Pat Down and Warm Up       13 cert typingtUL-40,Pat Down and Warm Up         22 cert typingtUt-40,Pat Down and Warm Up       13 cert typingtUL-40,Pat Down and Warm Up         23 cert typingtUt-40,Pat Down and Warm Up       13 cert typingtUL-40,Pat Down and Warm Up         24 cert typingtUt-40,Pat Down and Warm Up       13 cert typingtUL-40,Pat Down and Warm Up									
Dimensions and Construction           Interior Dimensions (H x D x W)         1308 H x 645 D x 586 W mm (51.5 H x 25.4 D x 23.1 W in.)           Exterior Dimensions (H x D x W)         1978 H x 988 D x 912 W mm (71.5 H x 25.4 D x 23.1 W in.)           Shipping Dimensions         2096 H x 1156 D x 1062 W mm (82.5 H x 45.5 D x 41.8 W in.)           Insulation         High Density Polyurethane Foam, R-30 (ft2.*F-hr/Btu)           Door Seal         Silicone-Based High Performance Seal Gasket           All-Direction Casters         Standard with Locks           Unit Weight         Approximately 290 kg / 640 lbs.           Other Options         Electronic Recorder and CO2 or LN2 Back-Up System           Typical Performance Characteristics in 20 ° C Ambient           132 wit theirget UT-40, Automately 290 kg / 640 lbs.           Other Options           Typical Performance Characteristics in 20 ° C Ambient           Typical Performance Characteristics in 20 ° C Ambient           1920 BA/           Other Options           Typical Performance Characteristics in 20 ° C Ambient           Characteristics in 20 ° C Ambient           Start bright H 149 at 400 cycle (C)           Other Option           Start bright wit 140 at 400 cycle (C)	•								
Interior Dimensions (H x D x W) 1308 H x 645 D x 586 W mm (51.5 H x 25.4 D x 23.1 W in.) Exterior Dimensions (H x D x W) 1978 H x 988 D x 912 W mm (77.9 H x 38.9 D x 35.9 W in.) Shipping Dimensions 2096 H x 1156 D x 1062 W mm (82.5 H x 45.5 D x 41.8 W in.) Insulation High Density Polyurethane Foam, R-30 (ft2.°F-hr/Btu) Door Seal Standard with Locks Unit Weight All-Direction Casters Unit Weight 3 Stainless Steel Shelves Adjustable In 25 mm (1 in) Increment; Maximum Capacity/Shelf: 45.4 kg (100 Lt All-Direction Casters Unit Weight 3 Stainless Steel Shelves Adjustable In 25 mm (1 in) Increment; Maximum Capacity/Shelf: 45.4 kg (100 Lt All-Direction Casters Unit Weight 3 Stainless Steel Shelves Adjustable In 25 mm (1 in) Increment; Maximum Capacity/Shelf: 45.4 kg (100 Lt 3 Stainless Steel Shelves Adjustable In 25 mm (1 in) Increment; Maximum Capacity/Shelf: 45.4 kg (100 Lt 3 Stainless Steel Shelves Adjustable In 25 mm (1 in) Increment; Maximum Capacity/Shelf: 45.4 kg (100 Lt 3 Stainless Steel Shelves Adjustable In 25 mm (1 in) Increment; Maximum Capacity/Shelf: 45.4 kg (100 Lt 3 Stainless Steel Shelves Adjustable In 25 mm (1 in) Increment; Maximum Capacity/Shelf: 45.4 kg (100 Lt 3 Stainless Steel Shelves Adjustable In 25 mm (1 in) Increment; Maximum Capacity/Shelf: 45.4 kg (100 Lt 3 Stainless Steel Shelves Adjustable In 25 mm (1 in) Increment; Shelf: 45.7 kg (100 Lt 3 Stainless Steel Shelves Adjustable In 25 mm (1 in) Increment; Shelf: 45.7 kg (100 Lt 3 Stainless Steel Shelves Adjustable In 25 mm (1 in) Increment; Shelf: 45.6 kg (100 Lt 3 Stainless Steel Shelves Adjustable In 25 mm (2 mm	Auto-Voltage Safeguard								
Exterior Dimensions (H x D x W)       1978 H x 988 D x 912 W mm (77.9 H x 38.9 D x 35.9 W in.)         Shipping Dimensions       2096 H x 1156 D x 1062 W mm (82.5 H x 45.5 D x 41.8 W in.)         Insulation       High Density Polyurethane Foam, R-30 (ft2·°F-hr/Btu)         Door Seal       Stainless Steel Shelves Adjustable In 25 mm (1 in) Increment; Maximum Capacity/Shelf: 45.4 kg (100 Lt         All-Direction Casters       Standard with Locks         Unit Weight       Approximately 290 kg / 640 lbs.         Other Options       Electronic Recorder and CO2 or LN2 Back-Up System         Typical Performance Characteristics in 20 ° C Ambient         Vision Unit Weight         Options         Techt Upright WIT40, Pull Deward Warm Up         Tout Upright WIT40, Pull Deward Warm Up         Techt Upright WIT40, Pull Deward Warm Up <td col<="" td=""><td></td><td></td></td>	<td></td> <td></td>								
Shipping Dimensions       2096 H x 1156 D x 1062 W mm (82.5 H x 45.5 D x 41.8 W in.)         Insulation       High Density Polyurethane Foam, R-30 (ft2 *F-hr/Btu)         Door Seal       Slicone-Based High Performance Seal Gasket         Shelves / Capacity       3 Stainless Steel Shelves Adjustable In 25 mm (1 in) Increment; Maximum Capacity/Shelf: 45.4 kg (100 Lt         All-Direction Casters       Standard with Locks         Unit Weight       Approximately 290 kg / 640 lbs.         Other Options       Electronic Recorder and CO2 or LN2 Back-Up System         Typical Performance Characteristics in 20 ° C Ambient         17 curlt bright UI-40, Ful Down and Warm Up         Other Options         Text Upright UI-40, Ful Down and Warm Up         17 curlt bright UI-40, Ful Down and Warm Up         17 curlt bright UI-40, Ful Down and Warm Up         The full Down and Warm Up         17 curlt bright UI-40, Ful Down and Warm Up         17 curlt bright UI-40, Ful Down and Warm Up         Text toright toright UI-40, Ful Down and Warm Up         17 curlt upright UI-40, Ful Down and Warm Up         17 curlt bright UI-40, Ful Down and Warm Up         17 curlt bright UI-40 at 40C cycle         17 curlt bright UI-40 at 40C cycle	· · · · ·								
Insulation       High Density Polyurethane Foam, R-30 (ft2.°F-hr/Btu)         Door Seal       Silicone-Based High Performance Seal Gasket         Shelves / Capacity       3 Stainless Steel Shelves Adjustable In 25 mm (1 in) Increment; Maximum Capacity/Shelf: 45.4 kg (100 Lt         All-Direction Casters       Standard with Locks         Unit Weight       Approximately 290 kg / 640 lbs.         Other Options       Electronic Recorder and CO2 or LN2 Back-Up System         Typical Performance Characteristics in 20 ° C Ambient         37 cell Upright ULT-40, Pail Down and Warm Up       J3 cell Upright ULT-40 reformance Characteristics in 20 ° C Ambient         37 cell Upright ULT-40, Pail Down and Warm Up       J3 cell Upright ULT-40 reformance Characteristics in 20 ° C Ambient         38 diagonal       J3 cell Upright ULT-40 reformance Characteristics in 20 ° C Ambient         39 diagonal       J3 cell Upright ULT-40 reformance Characteristics in 20 ° C Ambient         39 diagonal       J3 cell Upright ULT-40 reformance Characteristics in 20 ° C Ambient         112 cell Upright ULT-40, Feal Down and Warm Up       J3 cell Upright ULT-40 reformance Characteristics in 20 ° C Ambient         30 diagonal       J3 cell Upright ULT-40 reformance       Cabinet Load         12 cell Upright ULT-40, Feal Down and Warm Up       J3 cell Upright ULT-40 reformance       Cabinet Load         30 diagonal       J3 cell Upright ULT-40 reformance       Cabinet L	· · · · · ·								
Door Seal       Silicone-Based High Performance Seal Gasket         Shelves / Capacity       3 Stainless Steel Shelves Adjustable In 25 mm (1 in) Increment; Maximum Capacity/Shelf: 45.4 kg (100 Lt         All-Direction Casters       Standard with Locks         Unit Weight       Approximately 290 kg / 640 lbs.         Other Options       Electronic Recorder and CO2 or LN2 Back-Up System         Typical Performance Characteristics in 20 ° C Ambient         Unit Weight UI-40, Aut Downand Warm Up         Of the registre UI-40, Copie (C):         Other Section Comparison of the registre UI-40, Copie (C):         Out of t	· · · •								
Shelves / Capacity       3 Stainless Steel Shelves Adjustable In 25 mm (1 in) Increment; Maximum Capacity/Shelf: 45.4 kg (100 Lt All-Direction Casters         Unit Weight       Approximately 290 kg / 640 lbs.         Other Options       Electronic Recorder and CO2 or LN2 Back-Up System         Typical Performance Characteristics in 20 ° C Ambient         Unit Weight       Typical Performance Characteristics in 20 ° C Ambient         Standard with Locks       Unit Weight         Other Options       Electronic Recorder and CO2 or LN2 Back-Up System         Standard with Up       Typical Performance Characteristics in 20 ° C Ambient         Unit degrad       Typical Performance Characteristics       Test Unt Setes Numberor MSO Number:       1920-8A1         Statistics       Test Unit Setes Numberor MSO Number:       1920-8A1       1920-8A1         Statistics       Test Unit Setes Numberor MSO Number:       1920-8A1       1920-8A1         Statistics       Test Unit Setes Numberor MSO Number:       1920-8A1         Statistics       Test									
Unit Weight       Approximately 290 kg / 640 lbs.         Other Options       Electronic Recorder and CO2 or LN2 Back-Up System         Typical Performance Characteristics in 20 ° C Ambient         17 suft Upright UT-40, Pull Down and Warm Up         A to the pright UT-40, Pull Down and Warm Up         Other Options         17 suft Upright UT-40, Pull Down and Warm Up         Other Options         17 suft Upright UT-40, Pull Down and Warm Up         Other Options         17 suft Upright UT-40 at 40C (print)         17 suft Vpright UT-40 at 40C (print)         Other Options         Test Unit Series Numberor MSO Number:       19250-BAT         Cabinet Load       Uhloaded         Other Options       24         Option Sign colspan="2">Cabinet Load       Uhloaded         Option Sign col		3 Stainless Steel Shelves Adjustable In 25 mm (1 in) Increment; Maximum Capacity/Shelf: 45.4 kg (100 Lt							
Other Options       Electronic Recorder and CO2 or LN2 Back-Up System         Typical Performance Characteristics in 20 ° C Ambient         17 cut Upright ULT-40, Full Downand Warm Up         17 cut Upright ULT-40 at 400 Cycle         Test Unit Series Numberor MSD Number:       19250-BA1         Cabinet Lad       Unitoxitics         17 cut Upright ULT-40 at 400 Cycle       Unitoxitics         Test Unit Series Numberor MSD Number:       19250-BA1         Test Unit Series Numberor MSD Number:       19250-BA1         Cabinet Lad       Unitoxitics         Outro OpeningRecoveryto-38.5C (min):       24         Outr	All-Direction Casters	Standard with Locks							
Typical Performance Characteristics in 20 ° C Ambient12 suft Upright ULT 40, Pail Down and Warm Up12 suft Upright ULT 40, Pail Down and Warm Up13 cuft Upright ULT 40 at 40C CycleColspan="2">Test Unit Series Number or MSO Number:19250-BA-120 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Unit Weight	Approximately 290 kg / 640 lbs.							
<b>37 curlt Upright ULT-40,Pull Down and Warm Up 17 curlt Upright ULT-40,Pull Down <b>17 curlt Upright ULT-40 at 40C Cycle 17 curlt Upright ULT-40 at 40 curle 17 curlt Upright Ut-40 at 40 curle 17 curlt Upright Ut-40 at 40 curle 17 curlt Upright Ut-40 curle 17 curlt Upright Ut-40 at 40 curle 17 curlt Upright Ut-40 at 40 curle 17 curle 10 </b></b></b></b></b></b></b></b></b></b>	Other Options								
Pull Down Warm Up Test Unit Series Number or MSO Number: 19250-BA: Cabinet Load Cabinet Load Average Cabinet Temp at-40C Cycle (C): 38.2 Performance is nominal and individual units may vary. Freezer performance will differ due to product amount, product size and operating conditions. Continuous product enhancements may, without notice, result in amendments or ommisions to this specification. Thermo Scientific amnot accept responsibility for damage, injury, loss or expenses resulting from misapplication of the information herein.		Typical Performance Characteristics in 20 ° C Ambient							
Performance is nominal and individual units may vary. Freezer performance is nominal and individual units may vary. Freezer performance will differ due to product amount, product size and operating conditions. Continuous product enhancements may, without notice, result in amendments or ommissions to this specification. Thermo Scientific scannot accept responsibility for damage, injury, loss or expenses resulting from misapplication of the information herein.	17 cuft Upright ULT-40, Pull Down and Warm Up	17 cuft Upright ULT-40 at -40C Cycle							
$\frac{1}{20} \int_{-0}^{-0} \int_{-0}^$	Pull Down	MAX MIN AVG Test Unit Series Number or MSO Number: 19250-BA-T							
$\frac{1}{20} - \frac{1}{20} $		-34 CabinetLoad: Unloaded							
$\frac{-30}{-40} \underbrace{\begin{array}{c} -30\\ -40\\ 0 \end{array}}_{\text{Time, minutes}} \underbrace{\begin{array}{c} -41\\ +42\\ -43\\ 0 \end{array}}_{\text{Time, minutes}} \underbrace{\begin{array}{c} -41\\ -42\\ -43\\ 0 \end{array}}_{\text{Time, minutes}} \underbrace{\begin{array}{c} -41\\ -43\\ -43\\ 0 \end{array}}_{Time, minute$		-35 -35 -36 -36 -36 -38 -36 -38 -38 -38 -38 -38 -38 -38 -38							
$\frac{-30}{-40} \underbrace{\begin{array}{c} -30\\ -40\\ 0 \end{array}}_{\text{Time, minutes}} \underbrace{\begin{array}{c} -41\\ +42\\ -43\\ 0 \end{array}}_{\text{Time, minutes}} \underbrace{\begin{array}{c} -41\\ -42\\ -43\\ 0 \end{array}}_{\text{Time, minutes}} \underbrace{\begin{array}{c} -41\\ -43\\ -43\\ 0 \end{array}}_{\text{Time, minues}} \underbrace{\begin{array}{c} -41\\ -43\\ 0 \end{array}}_{\text{Time, minutes}} $	0	ل السابق التي التي التي التي التي التي التي التي							
$\frac{-30}{-40} \underbrace{\begin{array}{c} -30\\ -40\\ 0 \end{array}}_{\text{Time, minutes}} \underbrace{\begin{array}{c} -41\\ +42\\ -43\\ 0 \end{array}}_{\text{Time, minutes}} \underbrace{\begin{array}{c} -41\\ -42\\ -43\\ 0 \end{array}}_{\text{Time, minutes}} \underbrace{\begin{array}{c} -41\\ -43\\ -43\\ 0 \end{array}}_{\text{Time, minues}} \underbrace{\begin{array}{c} -41\\ -43\\ 0 \end{array}}_{\text{Time, minutes}} $	-10	- Stability (C). 2.4 1-min Door Opening Recovery to -38.5C (min): 22							
Time, minutes     Time	-20	- E -39 -40 -40 -40 -40 -40 -40 -40 -40							
<sup>40</sup> 0 100 200 300 400 <sup>43</sup> 0 120 240 360 480 600 720 <sup>148</sup> Warm Up Time(to 40C)(min): 148 288 <sup>150</sup> Time, minutes Performance is nominal and individual units may vary. Freezer performance will differ due to product amount, product size and operating conditions. Continuous product enhancements may, without notice, result in amendments or ommisions to this specification. Thermo Scientific cannot accept responsibility for damage, injury, loss or expenses resulting from misapplication of the information herein. <i>mulacturer measured compressor capacity taken at standard -23°C/49°C (Evap/Cond) condition.</i>	-30	-41 Energy Consumption (kw-hr/day): 7.3							
Time, minutes       0       120       240       360       480       600       720       Hamop milder focus 200 prime       200 <td></td> <td>-43 Pull Down Time (to -40C) (min): 148</td>		-43 Pull Down Time (to -40C) (min): 148							
Performance is nominal and individual units may vary. Freezer performance will differ due to product amount, product size and operating conditions. Continuous product enhancements may, without notice, result in amendments or ommisions to this specification. Thermo Scientific cannot accept responsibility for damage, injury, loss or expenses resulting from misapplication of the information herein.		0 120 240 360 480 600 720 Walker Million 100 200 (Million							
Freezer performance will differ due to product amount, product size and operating conditions. Continuous product enhancements may, without notice, result in amendments or ommisions to this specification. Thermo Scientific cannot accept responsibility for damage, injury, loss or expenses resulting from misapplication of the information herein.	in electronic instantic States St	Turte, minutes							
Freezer performance will differ due to product amount, product size and operating conditions. Continuous product enhancements may, without notice, result in amendments or ommisions to this specification. Thermo Scientific cannot accept responsibility for damage, injury, loss or expenses resulting from misapplication of the information herein.									
Continuous product enhancements may, without notice, result in amendments or ommisions to this specification. Thermo Scientific cannot accept responsibility for damage, injury, loss or expenses resulting from misapplication of the information herein.									
cannot accept responsibility for damage, injury, loss or expenses resulting from misapplication of the information herein.									
anufacturer measured compressor capacity taken at standard -23°C/49°C (Evap/Cond) condition.									
	same accept responsibility for darlage								
	anufacturer measured compressor capacity t	aken at standard -23°C/49°C (Evap/Cond) condition.							
19 Thorma Eichar Scientific Inc. All rights received. All trademarks are the property of Thorma Eichar Scientific Inc. and its subsidiaries. Coordinations terms and asistant are subject									
no memo risner scientific nic. All rights reserved, All trademarks are the property of memo risner scientific inc. and its subsidiaries, specifications, terms and proing are subject	18 Thermo Fisher Scientific Inc. All rights reserve	ed. All trademarks are the property of Thermo Fisher Scientific Inc. and its subsidiaries. Specifications, terms and pricing are subject							
hange. Not all products are available in all countries. Please consult your local sales representative for details.	hange. Not all products are available in all countr	ies. Please consult your local sales representative for details.							

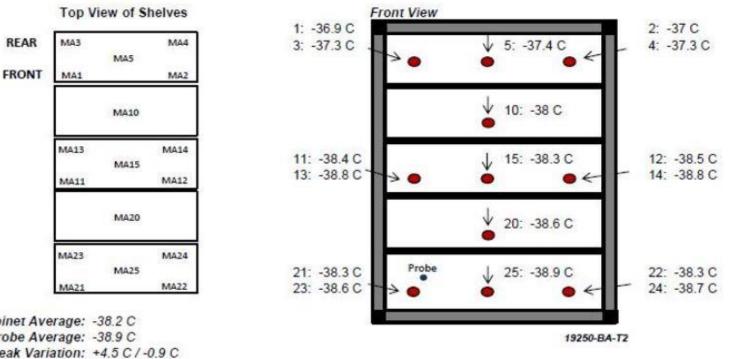
Thermo Fisher Scientific



## **Typical Cabinet Temperature Map**

ULT-40 17 cuft Unit, 4 Inner-Shelves + Base, Single Outer Door

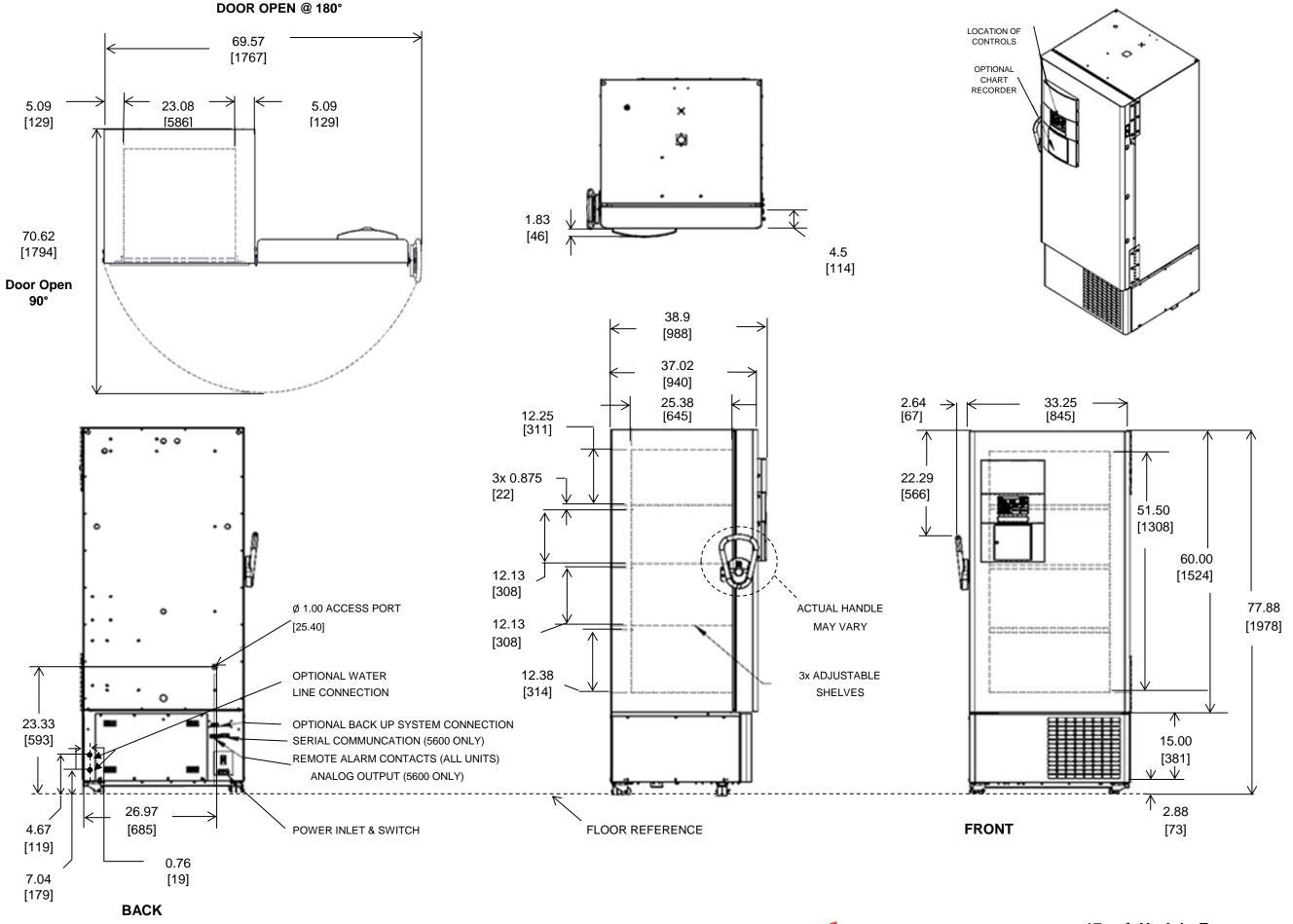
Temperatures are averages during > 12 hours of cycle after reaching setpoint of -40 C



Cabinet Average:	-38.2 C
Probe Average:	-38.9 C
Peak Variation:	+4.5 C/-0.9

	MA1	MA2	MA3	MA4	MA5	MA10	MA11	MA12	MA13
Avg	-36.9	-37.0	-37.3	-37.3	-37.4	-38.0	-38.4	-38.5	-38.8
Max	-35.5	-35.8	-36.0	-35.9	-36.0	-37.0	-37.5	-37.6	-37.8
Min	-38.3	-38.3	-38.6	-38.8	-38.9	-39.2	-39.4	-39.5	-40.0

	MA14	MA15	MA20	MA21	MA22	MA23	MA24	MA25
Avg	-38.8	-38.3	-38.6	-38.3	-38.3	-38.6	-38.7	-38.9
Max	-37.8	-37.5	-37.8	-37.3	-37.3	-37.7	-37.5	-37.7
Min	-39.9	-39.4	-39.7	-39.7	-40.0	-40.1	-40.6	-40.9



NOTE: DUAL DIMENSION IS INCH OVER METRIC



**17 cuft Upright Freezer** 4 Inner Doors Single Outer Door Top Mount Controls