thermo	
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Technical Data Sheet

Thermo Scientific[™] Ultra-Low Temperature Freezer Upright Model Release - 83

Thermo Fisher Scientific, Asheville, North Carolina

ENERGY STAR® MDEC (Maximum Daily Energy Consumption)

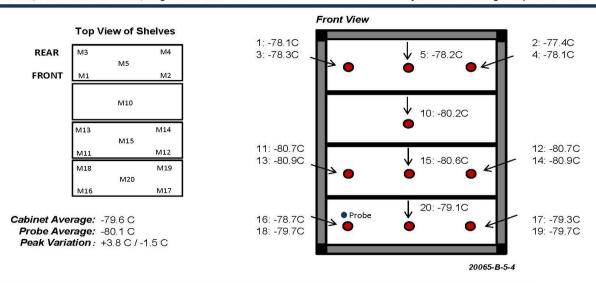


Entrice Theremension17.8 style 4.6 2.4r. (1981 x 1900 x 11.4 mm)Shipping Umerston3.8 12.7 4.67.8 st 10.1 C(111 x 1084 x 202 mm)Shipping Weight / Net Weight.80.8 bls. (34.4b) / 7.8 to (211 x 102 x 202 mm)Net out in insulation framework with High-Chennel Weide-Bloan				0.36 kW-hr/day/cuft	ENERGY STAR
Application Status Typical Performance Characteristics in 201°C Ambient Status 33.5 n. 11,98 Minst, 700 Sandad 7 Mass Sandad 7 Mass Temporation Failing Power 2010,05 Minst, 17 Filter Sandad 7 Mass Batting Stoph Rang 100 Ambient failure (Rang Ambient (Rang Ambient)))))) Sandad Sand (Rang Ambient (Rang Ambient		Mc	odel Number		
Applaining Stronger Volume Association Stronger Volume 3.0000 Non-1994 Non-1994 <th></th> <th>T</th> <th>SX70086V</th> <th></th> <th></th>		T	SX70086V		
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Tempenature Rating 407/CE-897C Electical Devel 230%:0FLV.1174/ac Building Rate/Current 6.1 AdP Building Rate/Current 6.1 AdP Building Rate/Current 6.1 AdP Promering Theorem The AdeCateground of stude. Promering Theorem Theorem Application Studies Theorem Application Studies NumCorrelation. NumCorrelation. Application Studies Theorem Application Studies NumCorrelation. Studies Distribution Formation. Application Studies 13.2.2.2.2.3.4.2.1.8.1.8.1.2.0.6.3.9.1.9.1.2.2.2.3.4.2.1.0.9.1.1.2.0.0.1.1.0.0.0.0.0.0.0.0.0.0.0.0.0					
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Instance Hand Current 6.1 AVP Buiding Supply Raing 153.6 Power Hug / Power Cool Control totelector or similar required. Enstance compliance with load Headin Cool Age(nc) Lange (1) Control totelector or similar required. Enstance compliance with load Headin Cool Age(nc) Lange (1) Control totelector or similar required. Enstance compliance with load Headin Cool Age(nc) Lange (1) Control totelector or similar required. Enstance compliance with load Headin Cool Age(nc) Lange (1) Control totelector or similar required. Enstance Market (1) Control totelector (1) State (Energy Consumption (kW-hr/day)	9.4
Building Supply Raing Type C circat protection or staff required. Error C circat protection or staff required. Error C circat protection or staff required. Devel Flug / Power Coid Peak Variation fon Secold (**) -7.4 / -2.2 Power Flug / Power Coid County Dependent July 2.2 Enror Construction (W- Medg) 12.7 Application Enror Nucleonization Unit County Dependent July 2.2 Enror Construction (W- Medg) 12.7 Application Enror Nucleonization Unit County Dependent July 2.2 Source (Source) 330.1 Bibling Supply Raing (**) Nucleonization Unit County Dependent July 2.2 Source (Source) 330.1 Bibling Supply Raing (**) Flug Supply Revenues Source (Source) 340.1 Bibling Supply Raing (**) Flug Supply Revenues Source (Source) 350.0 Bibling Supply Raing (**) Revenues Source (Source) 300.0 Bibling Supply Raing (**) Revenues Source (Source) Source (Source) Source (Source) Source (Source) Bibling Supply Raing (**) Revenues (Source) Source (Source) <td></td> <td>6.1 AMP</td> <td></td> <td></td> <td></td>		6.1 AMP			
Building Supply Raining Thyse C struct protection or similar required. Brainer compliance within and leastic code. Pears Ruing / Dever Code Country Dependent pts / EC COde. IN ISJOS 01 (Augret / Using / Nuc-Countexh. Non-Franmable, Non-Equations) 1001 Application Environment Inducer Sub Non-Franmable, Non-Equations (Non-Franmable, Non-Equations) 303 / 1.3 303 / 1.3 Struct (Fills) 0.12 / 2.2 / 3.3 / 1.0 303 / 1.0 303 / 1.0 Struct (Fills) 0.12 / 2.2 / 3.3 / 1.0 30.11 / 1.00 / 7.9 / 1.00 / 7.0 30.11 / 1.00 / 7.9 / 1.00 / 7.0 Struct (Fills) 0.3 / 2.4 / 2.3 / 3.1 / 1.0 1.00 / 7.9 / 1.00 / 7.9 / 1.00 / 7.9 / 1.00 / 7.0 30.11 / 1.00 / 7.9 / 1.00 / 1.00 / 7.9 / 1.00 / 7.9 / 1.00 / 7.9 / 1.00 / 7.9 / 1.00 / 7.9 / 1.00 / 7.9 / 1.00 / 1.00 / 7.9 / 1.00 / 7.9 / 1.00 / 1.00 / 7.9 / 1.00 / 7.9 / 1.00 / 7.9 / 1.00 / 7.9 / 1.00 / 1.00 / 7.9 / 1.00 / 1.00 / 0.00 / 0.00 / 0.00 / 0.00 / 0.00 / 0.00 / 0.00 / 0		16A dedicated grounded circuit.		Peak Variation from Setpoint (°C)	+7.4 / +2.0
Ensue Ensue <th< td=""><td>Building Supply Rating</td><td></td><td>High Performance Mode —</td><td></td><td></td></th<>	Building Supply Rating		High Performance Mode —		
Power Trug / Prover Coal Country (Depending Fully //EC Confs, 0h (13.00 m) Hast Rejection Rase (Burlh) 1001 Agency Litting Non-Corrosove, Non-Flammable, Non-Explosive Peak Variation Response (PO) 3.8 / 1.6 Application Environment 11.0 2 × 10 5.2 × 28.3 × 40.1 fc (1300 × 78.1 × 0.1 1011) 3.8 / 1.6 Sound (BB) 48.6 State of Demonstone (Fri 2 × 10 15.3 × 26.4 × 52.1 (1100 × 1001 × 1001 × 1001) Average Lindow (Fri 4 × 0 × 10) 3.3 Data Boal Silicone States (State Min (Br) Charoling And Parin) Sound (BB) 48.6 State of Demonstone (Fri 2 × 28.3 × 40.1 fc (1300 × 712 × 10.1 fs (101		Ensure compliance with local electric code	, , , , , , , , , , , , , , , , , , ,	Energy Consumption (kW-hr/day)	12.7
Application U., Clu. CF Application Non-Concresse, Non-Programma, Non-Programma, Non-Concresse, Non-Programma, Non-Non-Programma, Non-Non-Programm, Non-Non-Programma, Non-Non-Programma, Non-Non-Non-Programm, Non-	Power Plug / Power Cord	Country Dependant plug / IEC Cords, 10 ft (3.05 m)			1801
Application Environment Non-Constoner Non-Constoner Sound (db) 4.6.6 Interact Dimensions (H x D x W) 51.2 x 28.3 x 40.1 n. (1500 x 719 x 109 mn) Average (https://withps://w	Agency Listings	UL, cUL, CE			+3.8 / -1.5
The decide of the construction of the	Application Equipage at	Non-Corrosive, Non-Flammable, Non-Explosive		,	
Interior Dimension (# 12 X X/V) 15 12 X 23 3 443 in (1200 X 179 X 107 9 x 107 9 x 107 9 mm) Stepard Turnston (# 13 X X/V) 15 X 27 8 X 5 X 5 X 5 X 5 X 1 X 0. (211 X 100 8 X 129 mm) Stepard Yeght Weght 80 Be ha, (304 X/Y) 7 X 100 6 X 129 mm) Stepard Yeght Weght 80 Be ha, (304 X/Y) 7 X 100 6 X 129 mm) Stepard Yeght Weght 80 Be ha, (304 X/Y) 7 X 100 6 X 129 mm) Stepard Yeght Weght 80 Be ha, (304 X/Y) 7 X 100 6 X 129 mm) Naturn Insidution Viacuum Insidution Pende with High Density Water-Bloms Poor Seal Stepard Yeght Weght Boor Seal Stepard Yeght Weght Non-Based Gastet Seal with Electrical Cabled Perimeter Header Stepard Castet X 100 X 100 X 100 K 129 mm) Stepard Castet X 100 X 100 X 100 K 129 mm) Stepard Castet X 100 X 100 X 100 K 129 mm) Stepard Castet X 100 X 100 X 100 K 129 mm) Stepard Castet X 100 X 100 X 100 K 129 mm) Stepard Castet X 100 X 100 X 100 K 129 mm) Team of Seal Castet X 100 X 100 X 100 K 120 mm K 100 K 129 mm) Team of Seal Castet X 100 X 100 M 100 K 120 mm K 100 K 129 mm) Feator X 100 X 100 M 100 K 100 K 100 K 120 mm K 100 K 120 K 120 K 100 K 120	Application Environment	Indoor Use Only, Ventilated 15 - 32°C (59 - 90°F)		Sound (dBa)	48.6
Exercy Diversions (H + D × W) Exercy Diversions 78 ± 37 ± 46 ± 0. (1981 ± 380 ± 11.4 mm) Shipping Diversion 813 ± 42 ± 75 ± 131 ± 111 ± 108 ± 128 mm) Shipping Diversion 81 ± 24 ± 75 ± 131 ± 111 ± 108 ± 128 mm) Shipping Diversion 81 ± 24 ± 75 ± 131 ± 111 ± 108 ± 128 mm) Door Seal Silicone Based Gasket Social ME Electrical Cabine Polymetry Heater Heater Shipping Diversion Name Social ME Electrical Cabine Polymetry All Diversion Name Social ME Electrical Cabine Polymetry All Diversion Name Social ME Electrical Cabine Polymetry Controller Level Top Controller Level Top Operative Social Nine Finando-Rose, Cane Recorder Electrical System Configuration Nine Finando-Rose, Cane Recorder Tommetry Finando-Rose, Cane Recorder Nine Finando-Rose, Cane Recorder Tommetry Finando-Rose, Cane Recorder Nine Finando-Rose, Cane Recorder Tommetry Finando-Rose, Cale Minner Nine Finando-Rose			1-mir	Door Opening Recovery to -75°C (min)	34
Singing Dimensions 33:12:4:27:5:81:10; (2111:11:108:5:1220 mm) 88:0 bits. (244; (77.5) bits. (2411:14:10) 98:0 bits. (244; (77.5) bits. (2411:14:10) 98:0 bits. (244; (77.5) bits. (2411:14:10) 33:0 Singing Wingit, View Weight Warmub The Weight 88:0 bits. (244; (77.5) bits. (2411:14:10) 33:0 Door Seal Silcone Based Gasket Seal with Excitnal Cabinet Parimeter Heater 33:0 33:0 Shohrs Adjustable Shohrs in (26mm) Increments 3:3:0 3:0 Shohrs Adjustable Shohrs in (26mm) Increments 0:00:00:00:00:00:00:00:00:00:00:00:00:0	Interior Dimensions (H x D x W)	51.2 x 28.3 x 40.1 in. (1300 x 719 x 1019 mm)	1	Average Uniformity at -80°C (°C)	3.5
Singeng Uniteriations 83.12 + 42.7 × 51.10. (2111 × 108 + 128 mm) 80 b fs. (394 / 173 bs. (14 bg) 80 b fs. (394 / 173 bs. (14 bg) 330 Sheping Wingit, Viet Weight 80 b fs. (394 / 173 bs. (14 bg) 80 b fs. (394 / 173 bs. (14 bg) 330 Door Seal Silcone-Based Gasket Seal with Electrical Cabinet Perimeter Header 331 330 Sheping Wingit, Viet Weight Silcone-Based Gasket Seal with Electrical Cabinet Perimeter Header 330 Sheping Silcone-Based Gasket Seal with Electrical Cabinet Perimeter Header 3 tainless Steel Capacity 700 Urg/tipt ULT, Pull Down and Warm Up Sheping Wingit, Viet, Sheping Silcone-Based Gasket Seal (140 hg) 100 hg (157 hg) 100 hg (157 hg) Other Options Hild Core Charge Silcone Sheet Header 100 hg (157 hg) Other Options Hild Core Charge Silcone Sheet Header 100 hg (157 hg) Controller Type With Capacity Excitone Stream Figura and Display twith UBB Data Ratrivali 100 hg (157 hg) Stepping Header Figura Medical Cabinet Perimeter Header 100 hg (157 hg) Controller Type With Weight Cabonet Header 100 hg (157 hg) Controller Sheet Cabinet Medical Cabinet Perimeter 100 hg (150 hg) 100 hg (157 hg) Controller Type Enteninter Cabinet Sheet High There Cabinet Dech	Exterior Dimensions (H x D x W)		1		1.5
Insulation Vacuum Insulation Panets with Hup-Density Water Bloam Poly Door Seal Silicone-Based Gaseka Seal with Electrical Cabinet Permeter Heater Shelves 3 Salaniess Shel Albustebes Sheves Int (200m) Increments Albustebes Sheves Int (200m) Increments Albustebes Sheves Int (200m) Increments Albustebes Sheves Sheet Albustebes Sheet Cooperative Sheet Controller Lovel Top Cooperative Sheet Sheet Cooperative Sheet Sheet Cooperative Sheet Sheet Albustebes Sheet Cooperative Sheet Sheet Sheet Sheet Sheet Sheet Sheet Sheet Sheet Controller Lovel Top Cooperative Sheet Sheet Sheet Sheet Sheet Sheet Sheet Sheet Sheet Sheet Sheet Sheet Sheet Sheet Sheet Sheet Sheet Controller Lovel Top Cooperative Sheet Sh	Shipping Dimensions	83.12 x 42.75 x 51.13 in. (2111 x 1086 x 1299 mm)		Pull Down Time (to -80°C) (hrs)	8.9
Insulation Vacuum Insulation Panets with Hup-Density Water Bloam Poly Door Seal Silicone-Based Gaseka Seal with Electrical Cabinet Permeter Heater Shelves 3 Salaniess Shel Albustebes Sheves Int (200m) Increments Albustebes Sheves Int (200m) Increments Albustebes Sheves Int (200m) Increments Albustebes Sheves Sheet Albustebes Sheet Cooperative Sheet Controller Lovel Top Cooperative Sheet Sheet Cooperative Sheet Sheet Cooperative Sheet Sheet Albustebes Sheet Cooperative Sheet Sheet Sheet Sheet Sheet Sheet Sheet Sheet Sheet Controller Lovel Top Cooperative Sheet Sheet Sheet Sheet Sheet Sheet Sheet Sheet Sheet Sheet Sheet Sheet Sheet Sheet Sheet Sheet Sheet Controller Lovel Top Cooperative Sheet Sh	Shipping Weight / Net Weight	869 lbs. (304 kg) / 753 lbs. (341 kg)		Warm Up Time (-80°C to -50°C) (min)	339
Instantion Polyurethane Foam Door Seal Silkones Basid Gasel Seal with Electrical Calinel Polymeter Heater Shelves Adjusable Shelves in 1/25cmn [Increments Matheward Electrical Section (Calinel Polymeter Heater) Shelf Capacity Calinet Load not to Exceed 1140b (517.1 kg) Prederio / Electrical Section (Calinet Bosineter Matheward Electrical Section (Calinet David Section (Standard with Locks Other Options Hand Sectif (Standard Section (Calinet David Section (Standard With Locks Controller Level Toning Hand Sectif (Standard With Locks Dever Switch (Fort) Sch-tour / (Rean) Hand Circuit Breaker Compressor Sale Gaud Topi and Display with USB Data Rentroal Stepont Security Yes Controller Level Topi / Yes Compressor Sale Gaud High Temp Culut Switch, Carnet, Logic protection controllers Cloud Instrumer Found Scheded Scheme Apparable Warm/Cold Alarma Fredrigeration Configuration enstrumer Found Hermoder Menode Menode Scheme Step (Fredrigeration Configuration enstrumer Found Hermoder Menode Menoder) Redrigeration Configuration Controllers Lobe Fredrigeration Configuration enstrumer Found Hermoder Menode Scheme Redrigeration Configuration Controllers Lobe Fredrigeration Configuration enstrumer Condox Scheme Fredrick Menotong Eleganetic (1st2rd Stage) (Fredrigeration Configura					
Doir SellHeatrStelvesAdjustable Shelves in 11 (25mm) IncrementsShelvesMax Capabily ers Shelf 28 (as (128 kg) Cabenel Lod not to Exceed 1140b (917.1 kg)Max Capability and Shelves in 11 (25mm) IncrementsAB-Direction CastersStelvesStandard with LocksMax Capability Stelves (126 kg) Cabenel CastersMax Capability Stelves (126 kg) Controller TypeMax Capability Stelves (126 kg) Power SwitchController TypeViC Capability Stelves (126 kg) with USB ban RetrievalStelpeint ScuttyController TypeViC Capability CastersController TypeViC Capability Stelves (126 kg) with USB ban RetrievalTherm Fisher CloudRefrigeration SuptainController TypeRefrigeration SuptainTherm Fisher CloudRefrigeration SuptainRefrigeration SuptainRefrigeration SuptainRefrigeration SuptainRefrigeration ConfigurationController TypeExponence Cloud AtomsRefrigeration SuptainRefrigeration Suptain	Insulation				
Low OwnHeaterShalvesAdjustable Sheles in (125mm) IncrementsShell CapacityMax: Capacity per Shelf 288 (s. (128 kg) Cabriel Load not to Exceed 11406 (S17.1 kg)Inheritor / Excincil MatrialParned Steel (Sanikes Steel Capacity)Ad-Direction CasserStandard with LocksAd-Direction CasserStandard with LocksOther OptionsHU2 corC 20 Backup SystemOther OptionsHU2 corC 20 Backup SystemController I. YpeVC Capacity I and DisplayController I. YpeVC Capacity I and DisplayController T. YpeVC Capacity I and DisplayStepoint Security I. Writ Endbed, R48454200nA cottpiController T. YpeVC Capacity I (1000 other Disons)Controller CloudInstrumentConnegt** Remote MontoringAuto-Voltage StepointStepoint SecurityController TryleEditional RelationalController TryleNot Capacity TobeController TryleNot Capacity TobeController TryleNot Capacity TobeController TryleNot Relational SystemController TryleEditoreal SystemAuto-Voltage StepointStatumentConnegt** Remote MontoringApstable Warm/Cold JammsFully AdjustableController TryleEnhance Thata and Thata Alf Totaet Alf CoolingController TryleEnhance Thata and Thata Alf Totaet Alf CoolingController TryleEnhance Thata and Thata Alf Totaet Alf CoolingExporter TryleEnhance Thata and Thata Alf Totaet Alf CoolingExporter TryleEnhance Thata and Thata Alf Totaet Alf Coolin		Silicone-Based Gasket Seal with Electrical Cabinet Perimeter	- 700V Upri	ght ULT, Pull Down and Warm Un	
Shelves Adjustable Shelvansin fr (25mm) Increments Adjustable Shelvansin fr (25mm) Increments (Cather Loudon to Exceed 1140b (1917.1 kg)) Interior / Exterior Material Pained Shel (28tankes Shell Address Shell Address (Stankes Shell Address Shell Address Shell Address Shell Address Shell Address (Stankes Shell Address Shell Address Shell Address Shell Address Shell Address Shell Address Shell Address Shell Address Shell Address Shell Address Shell Address S	Door Seal	Heater			
Adjustable Shele's Inf (2c)mity Incerents Shelf Capaoly Max. Cagaaly per Shelf: 288 kp (128 kg) All-Direction Casters Standard with Locks All-Direction Casters Standard with Locks Other Options HID Controlled Access, Chart Recorder Exterior Interior // Exterior Material Pained Steel (Standor Math Locks) Controller Lavel Top Pewer Switch (Front) Sch-buch (Rew) Main Circuid Breaker Controller Lavel Top Controller Type ViC Cagaalow Reviewal Stepoint Security Yes Controller Loud Instrumention Reviewal Auto-Voltage Saleguard BuckBoost System Controller Type Enhanced Tool Controller Tave Controller Type Enhanced Tool Controller Tave Controller Type Enhanced Tool Controller Steele System Controller Type Enhanced Tool Stee Asteele / 2	O 1 1	3 Stainless Steel			
Shell Capacity Cabbert Land not to Exceed 1140b (617:1 kg) Interior / Exarisr Material Painted Steel (Standard with Lobas All-Direction Casters Standard with Lobas Unter Options HID Controller Access, Churn Recorder Electrical System Configuration Top Power Switch (Frend) Schwach / (Rean) Main Circuit Breaker Controller Level Top Power Switch (Frend) Schwach / (Rean) Main Circuit Breaker Controller Type VIC Capacitive Touch Screen (nput and Display with USB Data Retrieval Steppint Security Yes Controller Level Top Controller Level Top Controller Type VIC Capacitive Notice Controller Stepint Scientify and Capacity Scientify	Shelves		10		
Shell Capacity Cabinet Load note to Exceed 11400 (617.1 kg) Interior / Estation Material Pained Steel (Samless Steel Option) / Pained Steel (Samless Steel Optin) / Pained Steel (Samless Steel Option) / P		Max, Capacity per Shelf; 285 lbs, (128 kg)	0		
Exterior Illumination Kit Electrical System Configuration Controller Level Top Power Switch (Front) Soft-souch (Rear) Main Circuit Breaker Controller Type VIC Capability Touts South Council Stream Controller Type VIC Capability Touts South, Current, Logic protection Controller Type VIC Capability Touts Switch, Current, Logic protection Controller Type Use South (Rear) Main RTD Connectivity, France Colutual Wirk USB Data Retrieval Main Security Wirk USB Data Retrieval Compressor Safe Guard InstrumenConnect TM Remote Monitoring Adjustable Mark Buck/Boost System Refrigeration System Industrial Rated, Hermetically Saled / 2 Compressor/Number Industrial Rated, Hermetically Saled / 2 Compressor/Number Condinance Coluti Main Environe Condinance Coluti Main Streamed Tube and Fin with Forced-Air Cooling Evaparision Device Capitality Cooling Cooling Cooling Environmental Effects ODP: 0 (R280): 0 (R170) Filmmable Yes Performance will differ due to product amount, product size and operating conditions. Conditions product enhancements may, without notice, resuiting from mispetification of the informati	Shelf Capacity				
Exterior Illumination Kit Electrical System Configuration Controller Level Top Power Switch (Front) Soft-souch (Rear) Main Circuit Breaker Controller Type VIC Capability Touts South Council Stream Controller Type VIC Capability Touts South, Current, Logic protection Controller Type VIC Capability Touts Switch, Current, Logic protection Controller Type Use South (Rear) Main RTD Connectivity, France Colutual Wirk USB Data Retrieval Main Security Wirk USB Data Retrieval Compressor Safe Guard InstrumenConnect TM Remote Monitoring Adjustable Mark Buck/Boost System Refrigeration System Industrial Rated, Hermetically Saled / 2 Compressor/Number Industrial Rated, Hermetically Saled / 2 Compressor/Number Condinance Coluti Main Environe Condinance Coluti Main Streamed Tube and Fin with Forced-Air Cooling Evaparision Device Capitality Cooling Cooling Cooling Environmental Effects ODP: 0 (R280): 0 (R170) Filmmable Yes Performance will differ due to product amount, product size and operating conditions. Conditions product enhancements may, without notice, resuiting from mispetification of the informati	Interior / Exterior Material	Painted Steel (Stainless Steel Option) / Painted Steel	a -20		
Exterior Illumination Kit Electrical System Configuration Controller Level Top Power Switch (Front) Soft-souch (Rear) Main Circuit Breaker Controller Type VIC Capability Touts South Council Stream Controller Type VIC Capability Touts South, Current, Logic protection Controller Type VIC Capability Touts Switch, Current, Logic protection Controller Type Use South (Rear) Main RTD Connectivity, France Colutual Wirk USB Data Retrieval Main Security Wirk USB Data Retrieval Compressor Safe Guard InstrumenConnect TM Remote Monitoring Adjustable Mark Buck/Boost System Refrigeration System Industrial Rated, Hermetically Saled / 2 Compressor/Number Industrial Rated, Hermetically Saled / 2 Compressor/Number Condinance Coluti Main Environe Condinance Coluti Main Streamed Tube and Fin with Forced-Air Cooling Evaparision Device Capitality Cooling Cooling Cooling Environmental Effects ODP: 0 (R280): 0 (R170) Filmmable Yes Performance will differ due to product amount, product size and operating conditions. Conditions product enhancements may, without notice, resuiting from mispetification of the informati			te -30		
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Extericit Illumination Kit Electrical System Configuration Controller Level Top Power Switch (Front) Soft-work / (Rear) Main Circuit Breaker Controller Type VIC Capacitive Touch Screen Input and Display with USB Data Retrieval with USB Data Retrieval Controller Type VIC Capacitive Touch Screen Input and Display with USB Data Retrieval memory Compressor Safe Guard High Temp Culout Switch, Current, Logic protection Connectivity / Rendee Cutputs Wich Teabled, Restard-20mA output Thermor Fisher Cloud InstrumenConnect ^{1M} Remote Monitoring Adjustable Warm, Cold Alarms Fully Adjustable Auto-Voltage Safeguard Buck/Boost System Compressor/Number Industrial Rated, Hermeically Sealed / 2 Compressor/Number Capilary Tube Evaporator Type Enhanced Code Wall Design Defrost Method Manual Defrost Retrigeration (Stards Sage) Gr290) (F107/R200 Mk Fairmable Yes Performance will differ due to product amount, product size and operating conditions. Controller proposibility of damage, injury, loss or expresser seturating from mispelfication of the information here	Other Options		u -50		
Controller Level Top Power Switch (Front) Soft-stouch / (Rear) Main Circuit Breaker Controller Type VIC Capacitive Touch Screen Input and Display with USB Data Retrieval Setpoint Security Yes Controller Type With USB Data Retrieval Setpoint Security Yes Controller Type High Temp Cutous Switch, Current, Logic protection Controller Themo Fisher Cloud InstrumentConnect TM Remote Monitoring Adjustable Warm/Cold Alarms Auto-Voltage Safeguard Buck/Boost System Compressor/Number Industrial Ratel, Hermetically Sealed / 2 Condenser Type Enhanced Tube and Fin with Forced-Air Cooling Expansion Device Gapillary Tube Refrigeration System Maxual Defrost 820 (RT70) Detroist Method Manual Defrost 820 (RT70) Ferrormental Effects ODP: 0 (R290): 0 (RT70) Time, minutes Performance will differ due to product amount, product size and operating conditions. Time, minutes Performance is nominala and indi		Exterior Illumination Kit	-60		
Power Switch (Front) Soft-touch / (Rear) Main Circuit Breaker Controller Type VIC Capacitive Touch Screen Input and Display with USB Data Retrieval Setpoint Security Yes Compressor Sale Guard High Temp Cutout Switch, Current, Logic protection Control Sensor Compressor Sale Guard High Temp Cutout Switch, Current, Logic protection Control Sensor Compressor Sale Guard High Temp Cutout Switch, Current, Logic protection Control Sensor Adjustable Warm/Cold Alarms Fully Adjustable Auto-Voltage Saleguard BudyBoost System Compressor/Number Industrial Rated, Hermetically Sealed / 2 Compressor/Number Industrial Rated, Hermetically Sealed / 2 Compressor/Number Exhanced Cuto Wall Design Defrost Method Manual Defrost Refrigeration Type Enhanced Tube and Fin with Forced-Air Cooling Expansion Device Capillary Tube Evaporator Type Enhanced Cuto Wall Design Defrost Method Manual Defrost Refrigeration Configuration Yes Environmental Effects GWP: 3 (R290) / 6 (R170) Deirost Method Yes Performance will differ due to product amount, product size and operating conditions.	El	ectrical System Configuration	-70		
Controller Type Vite Capacitive Touch Screen Input and Display with USB Data Retrieval Setpoint Security Ves Compressor Safe Guard High Temp Cutout Switch, Current, Logic protection Control Sensor Single RTD (1000 other Plainum RTD) Connectivity, Hornolo Cutputs Wi-Fi Enabled, R5485/4-20mA output Thermor Fisher Cloud InstrumentConnect ^W Rennoke Monitoring Adjustable Warm/Cold Alarms Fully Adjustable Auto Voltage Safeguard Buck/Boost System Tovo Stage Cascade System Output Sector Sect	Controller Level	Тор	-80		
Controller type With USB Data Retriveal Setpoint Security Yes Compressor Safe Guard High Temp Cutout Switch, Current, Logic protection Control Sensor Single RTD (1000 ohm Plainum RTD) Connectivity, Memote Outputs Wi-FE Enabled, R4854-20mo Auoptut Thermo Fisher Cloud InstrumentConnect ^{1M} , Remote Monitoring Adjustable Warm/Cold Alarms Fully Adjustable Auto-Voltage Safeguard Buck/Boost System Compressor Capacity' 525/W (max), VCC Compressor Capacity' 525/W (max), VCC Condenser Type Enhanced Tube and Fin with Forced-Air Cooling Expansion Device Capilary Tube Evaporator Type Enhanced Cold Wall Design Defrost Method Manual Defrost Refrigerant (1st/2nd Stage) R290 / R170+R290 Mix Environmental Effects OpP 0: (R170) OpP 0: (R170) Yes Performance is nominal and individual units may vary. Freezer performance will affer due to product amount, product size and operating conditions. Connot accept responsibility for damage, jingu, Loss or expensee resulting from missopicitation of the information herein.	Power Switch	(Front) Soft-touch / (Rear) Main Circuit Breaker	0 100) 200 300 400 500 600)
Stepoint Security Window Data Retineval Compressor Safe Guard High Temp Cutout Switch, Current, Logic protection Control Sensor Single RTD (1000 ohm Plaithum RTD) Connectivity / Remote Outputs Wi-Fi Enabled, R5448/4-20mA output Thermo Fisher Cloud InstrumentConnect™ Remote Monitoring Adjustable Warm/Cold Alarms Fully Adjustable Auto-Voltage Safeguard Buck/Boost System Refrigeration Configuration Two Stage Cascade System Compressor/Rumber Industrial Rated, Hermetically Sealed /2 Compressor Capacity' 525W (max), VCC Condenser Type Enhanced Tube and Fin with Forced-Air Cooling Expansion Device Capillary Tube Evaporator Type Enhanced Cold Wall Design Befrigerant (1st/2nd Stage) R290 / R170-R290 Mix Refrigerant (1st/2nd Stage) GR290 / 6 (R170) DPiorts Method Manual Defrost Freezer performance Will differ due to product amount, product size and operating conditions. Performance is nominal and individual units may vary. Freezer performance will differ due to product amount, moduct size and operating conditions. Control enser responsibility for damage, injury, Uessor expensere resulting from missipplication of the infor	Controllor Type	VIC Capacitive Touch Screen Input and Display		Time, minutes	
Compressor Sate Guard High Temp Cutout Switch, Current, Logic protection Control Sensor Single RTD (1000 ohm Platinum RTD) Connectivity // Remote Outputs Wi-Fi Enabled, RS485/4-20mA output Thermo Fisher Cloud InstrumentConnect [™] Remote Monitoring Adjustable Warm/Coid Alarms Fully Adjustable Auto-Voltage Safeguard Buck/Boost System Refrigeration Configuration Too Stage Cascade System Compressor/Number Industrial Rated, Hermetically Sealed / 2 Compressor/Type Enhanced Tube and Fin with Forced-Air Cooling Expansion Device Cajillary Tube Evaporator Type Enhanced Coid Wall Design Defrost Method Manual Defrost Refrigerant (1stZnd Stage) R280 / R170-R290 Mix Erwironmental Effects ODP: 0 (R290); 0 (R170) Flammable Yes	Controller Type	with USB Data Retrieval			
Control Sensor Single RTD (1000 ohm Platinum RTD) Control Sensor Wi-Fi Enabled, RS485/4-20mA output Thermor Fisher Cloud InstrumentConnect ¹ ' Remote Monitoring Adjustable Warm/Cold Alarms Fully Adjustable Auto-Voltage Safeguard Buck/Boost System Refrigeration Configuration -74 Compressor/Number Industrial Rated, Hermetically Sealed / 2 Compressor/Capacity* 525W (max), VCC Condenser Type Enhanced Tube and Fin with Forced-Air Cooling Expansion Device Capillary Tube Evaporator Type Enhanced Cold Wall Design Defrost Method Manual Defrost Refrigerant (1st2nd Stage) R290 / R170) Flammable Yes Performance Is nominal and individual units may vary. Prezer performance will differ due to product amount, product size and operating conditions. Connous product enhancements many, without notice, result in amendments or othisspacefication of the information herein.	Setpoint Security	Yes			
Connectivity / Remote Outputs Wi-Fi Enabled, RS485/4-20mA output Thermo Fisher Cloud InstrumentConnect™ Remote Monitoring Adjustable Warm/Cold Alarms Fully Adjustable Auto-Voltage Safeguard Buck/Boost System Compressor Capacity Two Stage Cascade System Compressor Number Industrial Rated, Hermetically Sealed / 2 Condenser Type Enhanced Tube and Fin with Forced-Air Cooling Expansion Device Capilary Tube Expansion Device Capilary Tube Expansion Device GWP: 3 (R290) / 6 (R170) Defrost Method Manual Defrost Refrigerant (1st/2nd Stage) GWP: 3 (R290) / 6 (R170) Finamable Yes	Compressor Safe Guard	High Temp Cutout Switch, Current, Logic protection			
Thermo Fisher Cloud InstrumentConnect™ Remote Monitoring Adjustable WarrvCold Alarms Fully Adjustable Auto-Voltage Safeguard Buck/Boost System Refrigeration Configuration Fully Adjustable Compressor/Number Industrial Rated, Hermetically Sealed / 2 Compressor/Number Industrial Rated, Hermetically Sealed / 2 Compressor/Number S25W (max). VCC Condenser Type Enhanced Cold Wall Design Defrost Method Manual Defrost Refrigerant (1st22nd Stage) R290 / R170+R290 Mix Environmental Effects ODP: 0 (R290); 0 (R170) Flammable Yes Performance is nominal and individual units may vary. Preserv performance will differ due to product amount, product size and operating conditions. Continuous product enhancements may, without notice, result in amendments or omissions to this specification. Thermo Scientific cannot accept responsibility for	Control Sensor	Single RTD (1000 ohm Platinum RTD)]		
Adjustable Warm/Cold Alarms Fully Adjustable Auto-Voltage Safeguard Buck/Boost System Refrigeration Configuration Buck/Boost System Compressor/Provide Configuration Two Stage Cascade System Compressor/Provide Compressor/Number Industrial Rated, Hermetically Sealed / 2 Condenser Type Enhanced Tube and Fin with Forced-Air Cooling Expansion Device Capillary Tube Expansion Device Capillary Tube Evaporator Type Enhanced Cold Wall Design Defrost Method Manual Defrost Refrigerant (1st2nd Stage) R290 / R170 rR290 Mix Finamable Yes Performance is nominal and individual units may vary. Performance is nominal and individual units may vary. Performance will differ due to product size and operating conditions. O continuous product enhancements may, without notice, result in amendments or omissions to this specification. Thermo Scientific cannot accept responsibility for damage, injury, loss or expenses resulting from misapplication of the information herein.	Connectivity / Remote Outputs	Wi-Fi Enabled, RS485/4-20mA output	700	V Upright ULT at -80C Cycle	
Auto-Voltage Safeguard Buck/Boost System Auto-Voltage Safeguard Buck/Boost System Refrigeration Configuration Industrial Rated, Hermetically Sealed / 2 Compressor/Rumber Industrial Rated, Hermetically Sealed / 2 Compressor/Rumber Industrial Rated, Hermetically Sealed / 2 Compressor/Rumber Sealed / 2 Compressor/Rumber Enhanced Tube and Fin with Forced-Air Cooling Expansion Device Capillary Tube Evaporator Type Enhanced Cold Wall Design Defrost Method Manual Defrost Refrigerant (1st/2nd Stage) R290 / R170+R290 Mix Environmental Effects OUP: 0 (R290); 0 (R170) Flammable Yes Performance is nominal and Individual units may vary. Preezre performance will differ due to product amount, product size and operating conditions. Continuous product enhancements may, without notice, result in amendments or omissions to this specification. Thermo Scientific canont accept responsibility for damage, injury. Loss or expenses resulting from misapplication of the information herein.	Thermo Fisher Cloud	InstrumentConnect™ Remote Monitoring		MAX — MIN — AVG	
Refrigeration Configuration Refrigeration System Compressor/Number Industrial Rated, Hermetically Sealed / 2 Compressor Capacity* S25W (max). VCC Condenser Type Enhanced Tube and Fin with Forced-Air Cooling Expansion Device Capillary Tube Evaporator Type Enhanced Cold Wall Design Defrost Method Manual Defrost Refrigerant (1st/2nd Stage) R290 / R170+R290 Mix Environmental Effects ODP: 0 (R290); 0 (R170) Flammable Yes	Adjustable Warm/Cold Alarms				
Refrigeration Configuration Refrigeration System Compressor/Number Industrial Rated, Hermetically Sealed / 2 Compressor Capacity' 525W (max). VCC Condenser Type Enhanced Tube and Fin with Forced-Air Cooling Expansion Device Capillary Tube Evaporator Type Enhanced Cold Wall Design Defrost Method Manual Defrost Refrigerant (1st/2nd Stage) R290 / R170+R290 Mix Environmental Effects ODP: 0 (R290) / 6 (R170) Flammable Yes	Auto-Voltage Safeguard	Buck/Boost System			
Refrigeration Configuration Refrigeration System Two Stage Cascade System Compressor/Number Industrial Rated, Hermetically Sealed / 2 Compressor Capacity* 525W (max). VCC Condenser Type Enhanced Tube and Fin with Forced-Air Cooling Expansion Device Capillary Tube Evaporator Type Enhanced Cold Wall Design Defrost Method Manual Defrost Refrigerant (1st/2nd Stage) R290/ R170+R290 Mix Environmental Effects ODP: 0 (R290); 0 (R170) Flammable Yes					
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Condenser Type Enhanced Tube and Fin with Forced-Air Cooling Expansion Device Capillary Tube Evaporator Type Enhanced Cold Wall Design Defrost Method Manual Defrost Refrigerant (1st/2nd Stage) R290 / R170+R290 Mix Environmental Effects OUPP: 0 (R290); 6 (R170) ODP: 0 (R290); 0 (R170) Flammable Yes Yes	Refrigeration System				
Condenser Type Enhanced Tube and Fin with Forced-Air Cooling Expansion Device Capillary Tube Evaporator Type Enhanced Cold Wall Design Defrost Method Manual Defrost Refrigerant (1st/2nd Stage) R290 / R170+R290 Mix Environmental Effects OUPP: 0 (R290); 6 (R170) ODP: 0 (R290); 0 (R170) Flammable Yes Yes			ੂ -80 ਦਿ -80		
Expansion Device Capillary Tube Exaporator Type Enhanced Cold Wall Design Defrost Method Manual Defrost Refrigerant (1st/2nd Stage) R290 / R170+R290 Mix Environmental Effects GWP: 3 (R290) / 6 (R170) O 120 240 360 480 600 720 Flammable Yes Yes Time, minutes Time, minutes Performance is nominal and individual units may vary. Performance is nominal and individual units may vary. Scando performance will differ due to product size and operating conditions. Continuous product enhancements may, without notice, result in amendments or omissions to this specification. Thermo Scientific cannot accept responsibility for damage, injury, loss or expenses resulting from misapplication of the information herein.					
Evaporator Type Enhanced Cold Wall Design Defrost Method Manual Defrost Refrigerant (1st/2nd Stage) R290 / R170HR290 Mix Environmental Effects GWP: 3 (R290) / 6 (R170) O 120 240 360 480 600 720 Flammable Yes Yes Time, minutes 100		0	-82		
Defrost Method Manual Defrost Refrigerant (1st/2nd Stage) R290 / R170+R290 Mix Environmental Effects GWP: 3 (R290) / 6 (R170) Flammable Yes Performance is nominal and individual units may vary. Preformance is nominal and individual units may vary. Performance is nominal and individual units may vary. Continuous product enhancements may, without notice, result in amendments or omissions to this specification. Thermo Scientific cannot accept responsibility for damage, injury, loss or expenses resulting from misapplication of the information herein.			-83		
Refrigerant (1st/2nd Stage) R290 / R170+R290 Mix Time, minutes Environmental Effects GWP: 3 (R290) / 6 (R170) Time, minutes Flammable Yes Yes Performance is nominal and individual units may vary. Performance will differ due to product amount, product size and operating conditions. Continuous product enhancements may, without notice, result in amendments or omissions to this specification. Thermo Scientific cannot accept responsibility for damage, injury, loss or expenses resulting from misapplication of the information herein.			-84		
GWP: 3 (R290) / 6 (R170) ODP: 0 (R290); 0 (R170) Flammable Yes			0 120	0 240 360 480 600 72	20
Environmental Effects ODP: 0 (R290); 0 (R170) Flammable Yes Performance is nominal and individual units may vary. Performance will differ due to product amount, product size and operating conditions. Continuous product enhancements may, without notice, result in amendments or omissions to this specification. Thermo Scientific cannot accept responsibility for damage, injury, loss or expenses resulting from misapplication of the information herein.	Refrigerant (1st/2nd Stage)		4	Time, minutes	
ODP: 0 (K290); 0 (K170) Flammable Yes Performance is nominal and individual units may vary.) Performance will differ due to product amount, product size and operating conditions.) Continuous product enhancements may, without notice, result in amendments or omissions to this specification. Thermo Scientific cannot accept responsibility for damage, injury, loss or expenses resulting from misapplication of the information herein.	Environmental Effects		1		
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Freezer performance will differ due to product amount, product size and operating conditions. Continuous product enhancements may, without notice, result in amendments or omissions to this specification. Thermo Scientific cannot accept responsibility for damage, injury, loss or expenses resulting from misapplication of the information herein.	Flammable	Yes	4		
Freezer performance will differ due to product amount, product size and operating conditions. Continuous product enhancements may, without notice, result in amendments or omissions to this specification. Thermo Scientific cannot accept responsibility for damage, injury, loss or expenses resulting from misapplication of the information herein.					
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Continuous product enhancements may, without notice, result in amendments or omissions 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.			There are a straight		

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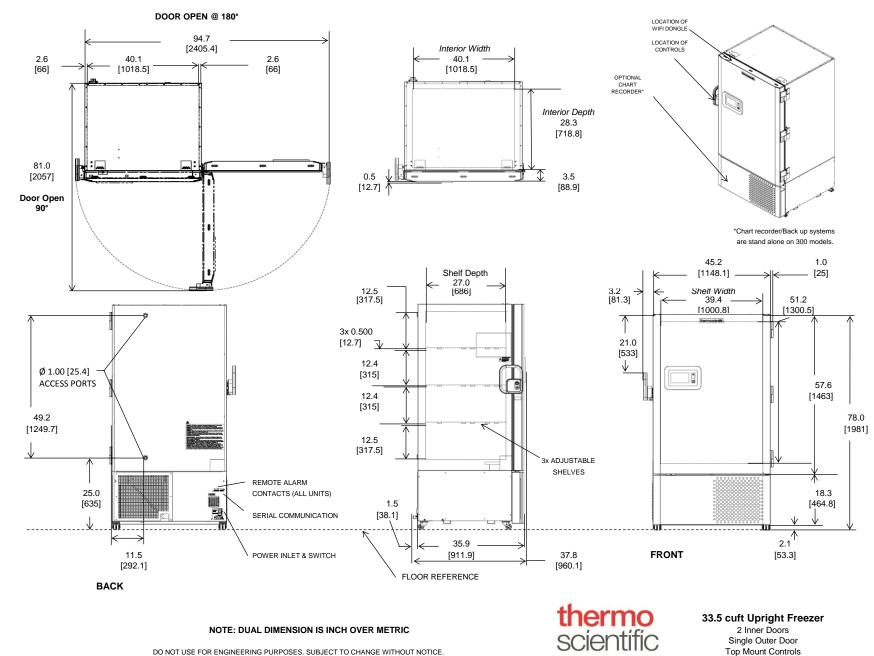
Typical Cabinet Temperature Map ULT 700, 3 Inner-Shelves + Base, Single Outer Door Temperatures are averages during > 12 cycles after reaching a setpoint of -80C



	M1	M2	MЗ	M4	M5	M10	M11	M12	M13
Avg	-78.1	-77.4	-78.3	-78.1	-78.2	-80.2	-80.7	-80.7	-80.9
Max	-77	-76.2	-77.1	-76.8	-77.1	-79.4	-80.1	-80.2	-80.2
Min	-78.9	-78.3	-79.2	-78.9	-79	-80.8	-81.3	-81.2	-81.5

	M14	M15	M16	M17	M18	M19	M20
Avg	-80.9	-80.6	-78.7	-79.3	-79.7	-79.7	-79.1
Max	-80.3	-80.1	-77.9	-78.7	-78.9	-79	-78.5
Min	-81.5	-81.1	-79.4	-79.9	-80.4	-80.3	-79.7

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