

Cabinet Type **Multi Deck Full Height Chilled**

Model Designation **RF**

File Reference

Document Issue

- | | | | |
|---|-----------|----|----------------------------|
| 1 | 24-05-18 | IP | First Issue New Spec Sheet |
| 2 | 17-10-19 | IP | Refrigerant R454A added |
| 3 | 09-03-21/ | IP | DX Fan loads updated |

cabinet **TECHNICAL DATA**

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Cabinet Technical Data Sheet; RF R744

Product Type	Milk & Juice / 3M1
Product Temperature	-1 / +5°C
Maximum Design Ambient	25°C @ 60RH

Case Length [m]	3.75	2.50	1.875
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Refrigeration Data

Refrigeration Duty (per 24hrs) [kW] ISO3	7.70	5.13	2.74
Evaporating Temperature [°C]	-4	-4	-4
Net Environment Cooling Effect [kW]	4.62	3.08	2.3
Evaporator Liquid Capacity @ 25% R744 [kg]	4.78	3.21	2.3
Refrigeration Pipe Tail – Liquid	3/8"	3/8"	3/8
Refrigeration Pipe Tail – Suction	1/2"	1/2"	1/2

Electrical Data (@ 230V 50Hz)	Watts	Amps	Watts	Amps	Watts	Amps
Fans (EC EBM)	117	0.5	72	0.31	52	0.23
Solenoid Valve / Controller	10	0.04	10	0.04	10	0.04
Lights	55	0.24	37	0.12	28	0.12
Maximum Load – Off Cycle Defrost	182	0.79	119	0.52	90	0.39

Miscellaneous Data

Refrigeration Connections	Top of Cabinet LHS
Electrical Connection	Top of Cabinet LHS

Set-Up Data** O/C Defrost

	Dairy
Cut in Temperature [°C]	1
Differential [K]	0.5
N° Defrosts (per 24hrs)	8
Maximum Defrost Time [mins]	40
Defrost Termination Temp (air off) [°C]	9
Drain Down Time [mins]	1
Fans in Defrost	On
Cabinet Temperature Ratio (%)	66
Superheat [K]	4

NOTES!

** Set-up data is for guidance only. Final settings to be determined by commissioning contractor.

Cabinet Technical Data Sheet – RF; R407A; R404A; R454A

Product Type	Milk & Juice / 3M1
Product Temperature	-1 / +5°C
Maximum Design Ambient	25°C @ 60RH

Case Length [m]	3.75	2.50	1.87
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Refrigeration Data

Refrigeration Duty (per 24hrs) [kW] ISO3	7.70	5.13	2.74
Evaporating Temperature [°C]	-7	-7	-7
Nett Environment Cooling Effect [kW]	4.62	3.08	2.3
R407A T2 Orifice Size	4	3	2
R407A AKV Expansion Valve Size	10-6	10-6	10-4
R404A T2 Orifice Size	4	3	3
R404A AKV Expansion Valve Size	10-7	10-7	10-5
R407F T2 Orifice Size	4	3	2
R407F AKV Expansion Valve Size	10.6	10.7	10.4
R4354 AKV Expansion Valve Size	10-6	10-5	10-4
Evaporator Liquid Capacity @ 25% R404A* [kg]	4.5	3.0	2.2
Evaporator Liquid Capacity @ 25% R407A [kg]	5.6	3.5	2.63
Evaporator Liquid Capacity @ 25% R454A [kg]	5.79	3.62	2.72

Refrigeration Pipe Tail – Liquid	3/8"	3/8"	3/8"
Refrigeration Pipe Tail – Suction	7/8"	7/8"	7/8"
	7/8"	7/8"	7/8"

Electrical Data (@ 230V 50Hz)	Watts	Amps	Watts	Amps	Watts	Amps
Fans (EC EBM)	117	0.5	72	0.31	52	0.23
Solenoid Valve / Controller	10	0.04	10	0.04	10	0.04
Lights	55	0.24	37	0.12	28	0.12
Maximum Load – Off Cycle Defrost	182	0.8	119	0.52	90	0.4

Miscellaneous Data

Refrigeration Connections	Top of Cabinet LHS
Electrical Connection	Top of Cabinet LHS

Set-Up Data** O/C Defrost

	Dairy
Cut in Temperature [°C]	1
Differential [K]	0.5
N° Defrosts (per 24hrs)	8
Maximum Defrost Time [mins]	40
Defrost Termination Temp (air off) [°C]	9
Drain Down Time [mins]	1
Fans in Defrost	On
Cabinet Temperature Ratio (%)	66
Superheat [K]	4

NOTES! * for R22 multiply by factor X 0.90

** Set-up data is for guidance only. Final settings to be determined by commissioning contractor.

Cabinet Technical Data Sheet- RF Gen 1

Product Type	Milk & Juice / 3M1		
Product Temperature	-1 / +5°C		
Maximum Design Ambient	25°C @ 60RH		

Case Length [m]	3.75	2.50	1.87
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Refrigeration Data			
Nett Environmental Cooling Effect	3.12	3.08	2.41
Refrigerant Charge Per System R1270	800g	700g	800g

Electrical Data (@ 230V 50Hz)	Watts	Amps	Watts	Amps	Watts	Amps
Fans (EC EBM)	63	0.27	42	0.18	28	0.12
Controller	10	0.04	10	0.04	10	0.04
Lights	66	0.28	44	0.19	34	0.15
Condensing unit	1934	8.4	1446	6.3	839	3.7
Maximum Load – Off Cycle Defrost	2073	9.0	1542	6.7	873	4.01

Engineering Data - Common			
Total Heat Rejection THR [KW]	9.77	6.64	4.89
Plate Heat Exchanger [Kpa] each	2 @ 0.86 Kpa	2 @ 1.31 Kpa	1@ 0.86 Kpa
Water inlet temperature	18°C		18°C
Water outlet temperature	24°C		24°C
Drain Outlet	32mm Plastic		32mm Plastic
Chilled Water Connections	22mm		22mm
Condensate Volume	65ltrs (Per Linear Meter Per 24hrs)		

DTX Glycol 27% Flow Rate [Kg/S]***	0.3619	0.2559	0.1809
THR (Water only) [KW]	8.97	5.84	4.49
THR (Air only) [KW]	0.8	0.80	0.40

Set-Up Data** O/C Defrost	3.75/2.5m	1.87m
Cut in Temperature [°C]	2	2
Differential [K]	2	2
Anti-Cycle Time (Seconds)	180	180
Lag Comp Delay (Seconds)	180	0
Cabinet Temperature Ratio (%)	66	66
N° Defrosts (per 24hrs)	8	8
Maximum Defrost Time [mins]	45	45
Defrost Termination Temp (air off) [°C]	9	9
Drain Down Time [mins]	0	0
Fans in Defrost	On	On
Integral Control	Basic	Basic

NOTES! * 12/12 Trading Conditions

** Set-up data is for guidance only. Final settings to be determined by commissioning contractor.

*** Flow rate for Glycol based on 27% @ 20°C from Coolflow = 3.8095KJ/(KG-K)

**** Flow rate for water @ 20°C (http://www.engineeringtoolbox.com/water-thermal-properties-d_162.html)

Cabinet Technical Data Sheet – RF GEN 3

Product Type	Milk & Juice / 3M1			
Product Temperature	-1 / +5°C			
Maximum Design Ambient	25°C @ 60RH			
Case Length [m]	2.50		1.875	
Refrigeration Data				
Nett Environmental Cooling Effect	3.08		2.41	
Refrigerant Charge Per System R1270	700g		800g	
Electrical Data (@ 230V 50Hz)	Watts	Amps	Watts	Amps
Fans (EC EBM)	42	0.18	28	0.12
Controller	10	0.04	10	0.04
Lights	44	0.19	33	0.14
Condensing unit	3093	13.45	2380	10.35
Maximum Load – Off Cycle Defrost	3189	13.87	2451	10.66
Engineering Data - Common				
Total Heat Rejection THR [KW]	8.22		6.20	
Plate Heat Exchanger [Kpa] each		12 Kpa		
Drain Outlet		32mm Plastic		
Chilled Water Connections		22mm		
Condensate Volume		65ltrs (Per Linear Meter Per 24hrs)		
Engineering Data- THR				
THR (Air Only) [KW]	0.675		0.675	
THR (Water only) [KW]	7.545		5.525	
Engineering Data - Flow Rates;				
Inlet Temp 41°C; Outlet Temp 46°C Glycol 15% Flow Rate [Kg/S]***	0.3733		0.2733	
Inlet Tem 40°C; Outlet Tem 46°C Glycol 15% Flow Rate [Kg/S]***	0.3111		0.2278	
Set-Up Data** O/C Defrost				
Cut in Temperature [°C]	2			
Differential [K]	2			
Anti-Cycle Time (Seconds)	180			
Lag Comp Delay (Seconds)	180			
Cabinet Temperature Ratio (%)	66			
N° Defrosts (per 24hrs)	8			
Maximum Defrost Time [mins]	45			
Defrost Termination Temp (air off) [°C]	9			
Drain Down Time [mins]	0			
Fans in Defrost	On			
Integral Control	Basic			

NOTES! * 12/12 Trading Conditions

** Set-up data is for guidance only. Final settings to be determined by commissioning contractor.

*** Flow rate for Glycol based on 15% @ 40°C = 4.0425KJ/(KG-K)

Cabinet Technical Data Sheet – RF Produce; R407A; R404A; R454A

Product Type	Chilled Produce / 3M1
Product Temperature	-1 / +5°C
Maximum Design Ambient	

Case Length [m]	3.75	2.50	1.87
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Refrigeration Data

Refrigeration Duty (per 24hrs) [kW] ISO 3	6.04	4.03	3.01
Refrigeration Duty (per 24hrs) [kW] ISO 0	4.06	2.71	2.03
Evaporating Temperature [°C]	-7	-7	-7
Net Environment Cooling Effect [kW] ISO 3	5.79	2.48	1.86
R404a AKV Expansion Valve Size	10-6	10-6	10-5
R404a T2 Orifice Size	4	3	3
R407F AKV Expansion Valve Size	10-6	10-6	10-5
R407F T2 Orifice Size	4	3	2
R454A AKV Expansion Valve	10-6	10-5	10-4
Evaporator Liquid Capacity @ 25% R404a* [kg]	4.5	3	2.2
Evaporator Liquid Capacity @ 25% R407A [kg]	5.6	3.5	2.63
Evaporator Liquid Capacity @ 25% R454a [kg]	5.79	3.62	2.72
Refrigeration Pipe Tail – Liquid	3/8"	3/8"	3/8"
Refrigeration Pipe Tail – Suction	7/8"	7/8"	7/8"

Electrical Data (@ 230V 50Hz)	Watts	Amps	Watts	Amps	Watts	Amps
Fans	117	0.5	72	0.31	52	0.23
Solenoid Valve / Controller	10	0.04	10	0.04	10	0.04
Lights	54	0.23	36	0.16	27	0.12
Maximum Load – Off Cycle Defrost	181	0.79	118	0.51	89	0.34

Miscellaneous Data

Refrigeration Connections	Top LHS
Electrical Connection	Top LHS

Set-Up Data** O/C Defrost	Chilled
Cut in Temperature [°C]	0.5
Differential [K]	0.5
N° Defrosts (per 24hrs)	8
Maximum Defrost Time [mins]	40
Defrost Termination Temp (air off) [°C]	9
Drain Down Time [mins]	1.5
Fans off on Defrost	No
Cabinet Temperature Ratio (%)	50
Superheat [K]	4
Config. – Control Method	cycle

NOTES!

** Set-up data is for guidance only. Final settings to be determined by commissioning contractor.

Cabinet Technical Data Sheet – RF Produce; R407A; R404A; R454A

Product Type	Chilled Produce / 3M2
Product Temperature	-1 / +7°C
Maximum Design Ambient	

Case Length [m]	3.75	2.50	1.87
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Refrigeration Data

Refrigeration Duty (per 24hrs) [kW] ISO 3	5.64	3.66	2.74
Refrigeration Duty (per 24hrs) [kW] ISO 0	5.04	3.51	2.63
Evaporating Temperature [°C]	-6	-6	-6
Net Environment Cooling Effect [kW] ISO 3	5.41	3.51	2.63
R404a AKV Expansion Valve Size	10-6	10-6	10-5
R404a T2 Orifice Size	4	3	3
R407F AKV Expansion Valve Size	10-6	10-6	10-5
R407F T2 Orifice Size	4	3	2
R454A AKV Expansion Valve	10-6	10-5	10-4
Evaporator Liquid Capacity @ 25% R404a* [kg]	4.5	3	2.2
Evaporator Liquid Capacity @ 25% R407A [kg]	5.6	3.5	2.63
Evaporator Liquid Capacity @ 25% R454A [kg]	5.79	3.62	2.72
Refrigeration Pipe Tail – Liquid	3/8"	3/8"	3/8"
Refrigeration Pipe Tail – Suction	7/8"	7/8"	7/8"

Electrical Data (@ 230V 50Hz)	Watts	Amps	Watts	Amps	Watts	Amps
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Fans	117	0.5	72	0.31	52	0.23
Solenoid Valve / Controller	10	0.04	10	0.04	10	0.04
Lights	54	0.23	36	0.16	27	0.12
Maximum Load – Off Cycle Defrost	181	0.79	118	0.51	89	0.34

Miscellaneous Data

Refrigeration Connections	Top LHS
Electrical Connection	Top LHS

Set-Up Data** O/C Defrost	M2 Produce
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Cut in Temperature [°C]	1
Differential [K]	0.5
N° Defrosts (per 24hrs)	8
Maximum Defrost Time [mins]	45
Defrost Termination Temp (air off) [°C]	9
Drain Down Time [mins]	1.5
Fans off on Defrost	No
Cabinet Temperature Ratio (%)	50
Superheat [K]	4
Config. – Control Method	cycle

NOTES!

** Set-up data is for guidance only. Final settings to be determined by commissioning contractor.

Cabinet Technical Data Sheet – RF Produce (Asda Profile)

Product Type	Cooled Produce / 3H1
Product Temperature	-1 / +10°C
Maximum Design Ambient	

Case Length [m]	3.75	2.50	1.87
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Refrigeration Data

Refrigeration Duty (per 24hrs) [kW] ISO 3	8.7	5.8*	4.34
Refrigeration Duty (per 24hrs) [kW] ISO 0	5.83	3.89	2.91
Evaporating Temperature [°C]	-6	-6	-6
Net Environment Cooling Effect [kW] ISO 3	2.25	1.5	1.12
R404a AKV Expansion Valve Size	10-6	10-6	10-5
R404a T2 Orifice Size	4	3	3
R407F AKV Expansion Valve Size	10-6	10-6	10-5
R407F T2 Orifice Size	4	3	2
R454A AKV Expansion Valve Size	10-6	10.6	10.5
Evaporator Liquid Capacity @ 25% R404a* [kg]	4.5	3	2.2
Evaporator Liquid Capacity @ 25% R407A [kg]	5.6	3.5	2.63
Evaporator Liquid Capacity @ 25% R454A [kg]	5.79	3.62	2.72
Refrigeration Pipe Tail – Liquid	3/8"	3/8"	3/8"
Refrigeration Pipe Tail – Suction	7/8"	7/8"	7/8"

Electrical Data (@ 230V 50Hz)	Watts	Amps	Watts	Amps	Watts	Amps
Fans	117	0.5	72	0.31	52	0.23
Solenoid Valve / Controller	10	0.04	10	0.04	10	0.04
Lights	54	0.23	36	0.16	27	0.12
Maximum Load – Off Cycle Defrost	181	0.79	118	0.51	89	0.34

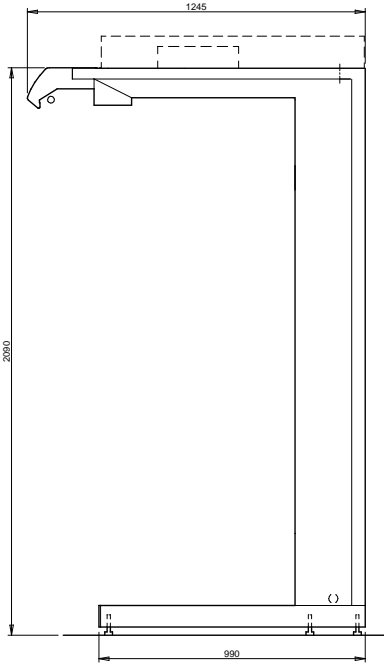
Miscellaneous Data

Refrigeration Connections	Top LHS
Electrical Connection	Top LHS

Set-Up Data** O/C Defrost	H1 Produce
Cut in Temperature [°C]	2.5
Differential [K]	0.5
N° Defrosts (per 24hrs)	8
Maximum Defrost Time [mins]	45
Defrost Termination Temp (air off) [°C]	9
Drain Down Time [mins]	1.5
Fans off on Defrost	No
Cabinet Temperature Ratio (%)	50
Superheat [K]	4
Config. – Control Method	cycle

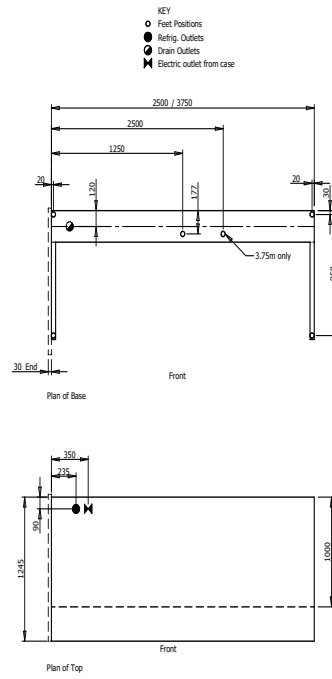
NOTES!
 * Energy Calc based on C1 Profile
 ** Set-up data is for guidance only. Final settings to be determined by commissioning contractor.

Section Drawing RF



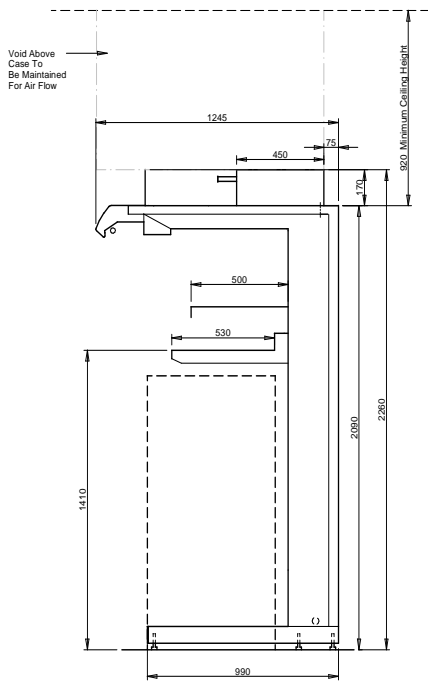
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Plan Drawing RF



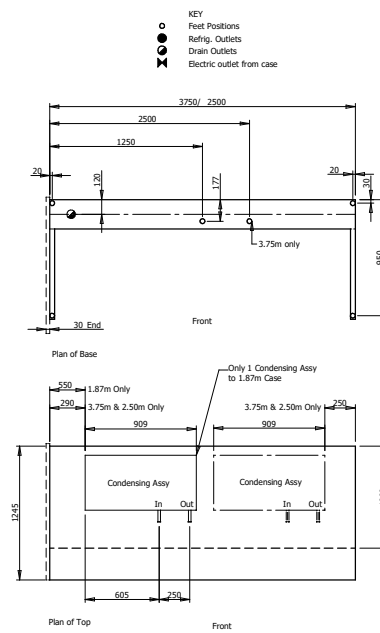
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Section Drawing Gen 1 and 3



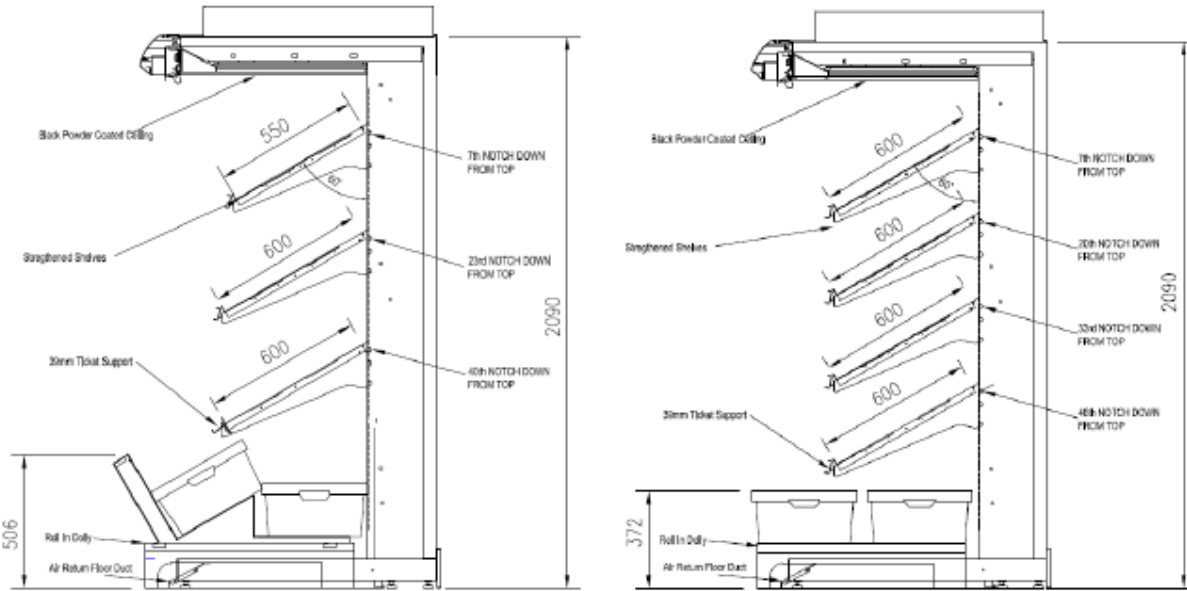
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Plan Drawing Gen 1 and 3



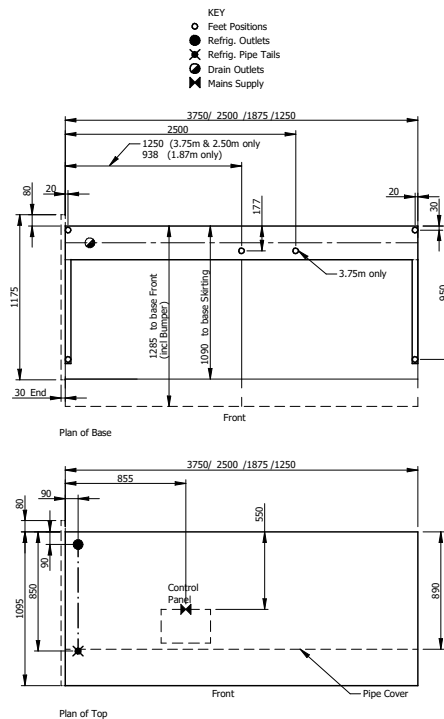
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Section Drawing RF – Produce cases



* C1 Profile

Plan Drawing RF - Produce cases



Cabinet Technical Data Sheet- Models Covered

Cabinet Model	Date Added	HFC Refrigerant	ATL Refrigerant	CO2 Refrigerant	Water Cooled GEN 1	Water Cooled GEN 3	Secondary GEN 2
RF4 (Ref 1199)	30-04-2013			✓			
RF5 (Ref 1206)	08-01-14	✓					
RFA (Ref 1219)	05-01-17				✓	✓	
RFB (Ref 1275)	10-05-16	✓					
RF Produce	17-10-2019		✓				

Example of CRE case code letter designation:-

RFA6S00607-FFFZ

R – Model Identification

F – Model Identification

A – Design Revision

7 – Length

S – Run Position

0 – Unique Identifier

0 – Unique Identifier

6 – Unique Identifier

0 – Unique Identifier

7 – Unique Identifier

Length Codes

1 – 1.25m

2 – 1.5m

3 – 1.7m

4 – 1.87m

5 – 2.10m

6 – 2.5m

7 – 3.75m

Run Position

S – Straight

W – End Case