



NETWORK SYSTEMS GROUP

Application/Specification Guide

PAN-WAY™ Twin-70 Surface Raceway System



PAN-WAY™ Twin-70 Surface Raceway is an aesthetically pleasing multi-channel raceway that provides separate covers for communications and power cabling channels. Fittings have been designed to maintain the TIA/EIA required 1" minimum bend radius of Category 5 and Fiber Optic cabling. The raceway is tamper resistant to the end user yet allows easy access to the installer for moves, adds and changes.

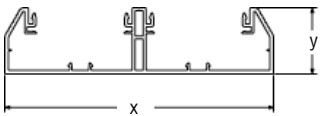



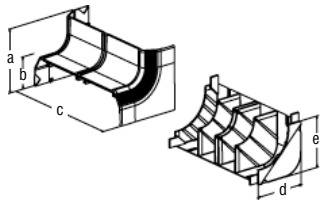
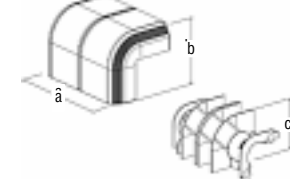
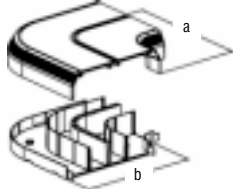
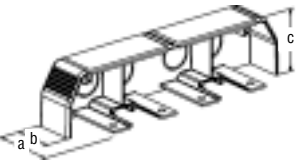
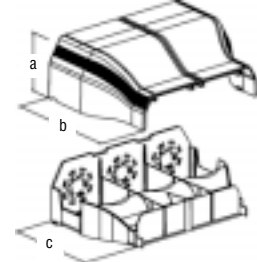
Twin-70 raceway is optimized for use with the **PAN-NET™** Network Cabling System to provide a totally integrated horizontal cabling solution for Category 5 UTP, ScTP, Coax, Fiber Optic and Power Cabling Systems.

Features

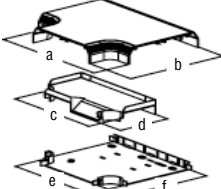
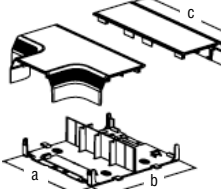
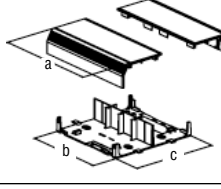
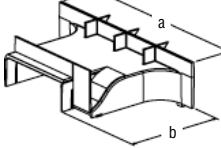
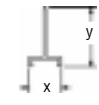


Advantages & Benefit

Separate Covers Throughout the System (including the fittings)	Maintains complete separation of power and data cabling systems	Provides maximum safety during installation and for moves, adds, and changes
1" Bend Radius Control Fittings	Cables in the raceway won't exceed the minimum 1" bend radius requirement and degrade performance	Maximizes headroom of high performance cabling systems, such as Gigabit Ethernet, Fast Ethernet, Fiber, and ATM
	Meets TIA/EIA Standards	Meets many warranty requirements
Snap-on Faceplates NO BOXES REQUIRED	Faceplates snap directly onto the raceway base eliminating the many parts (i.e. junction boxes, brackets, etc) normally required to mount communication connectors	Lowers the overall installed cost and the number of parts to inventory & buy
	Cabling can be quickly accessed by removing only one faceplate, unlike many current systems which require the removal of many parts	Speeds moves, adds, and changes. Requires less labor and lowers the cost of maintenance
Each channel has a 70mm opening	Accepts any NEMA standard power or communication faceplates	Works with other manufacturers' power and communication faceplates
UL-5A Listed	Meets the latest UL Listing requirements & can be used for power cabling up to 600V	Maximum safety for power systems, including tamper and impact resistance
Highly tamper resistant	Is very difficult for untrained personnel to enter the raceway or remove faceplates	Provides maximum security for the communication cabling and maximum safety for the power cabling
Non-Metallic Construction	Lightweight	Reduces installer fatigue. Allows for one person installation, reducing labor required to install the raceway
	Solid Color throughout	Will not chip, peel, rust or corrode. Masks scratches
	Easy to cut with standard saws and saw blades	Reduces installed cost and the need for special cutting devices
	High impact resistance	Extremely durable for a long life
	Easy to cut with standard saws and saw blades	Reduces installed cost and the need for special cutting devices
Designer Profile	Aesthetically pleasing	Applications vary from the classroom to the executive office
Available in 4 standard colors	Matches a wide variety of decors	

PANDUIT® PAN-WAY™ Twin-70 Surface Raceway Components

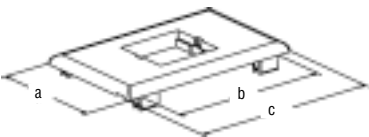
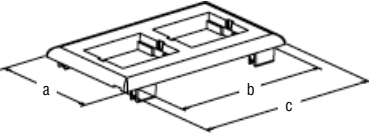
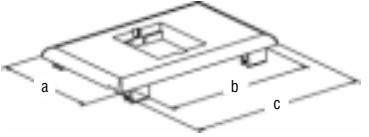
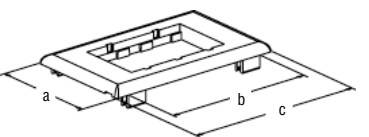
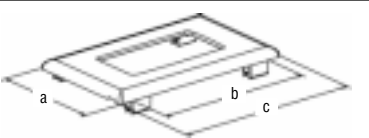
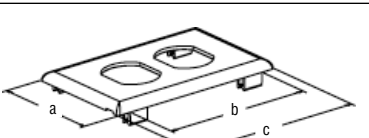
Drawing / Dimensions	Part Number	Color	Description
 <p>Twin-70 Raceway Base</p> <p>$x = 7.23'' (183.6\text{mm})$ $y = 1.77'' (45.0\text{mm})$</p>	<p>T702BIW8 T702BEI8 T702BIG8 T702BWH8</p>	<p>Off White Elec. Ivory Light Gray White</p>	<p>Raceway base for Twin-70 raceway. Supplied in eight (8) foot lengths.</p> <p>NOTE: When ordering ten (10) foot lengths insert 10 instead of 8 in the part number.</p>
 <p>Twin-70 Raceway Cover</p> <p>$x = 2.76'' (70.0\text{mm})$</p>	<p>T702CIW8 T702CEI8 T702CIG8 T702CWH8</p>	<p>Off White Elec. Ivory Light Gray White</p>	<p>Tamper resistant raceway cover for use with Twin-70 raceway base. Supplied in eight (8) foot lengths. Two (2) feet of cover is required per one (1) foot of base.</p> <p>NOTE: When ordering ten (10) foot lengths insert 10 instead of 8 in the part number.</p>
 <p>Twin-70 Base Coupling</p>	<p>T70BCIW-X T70BCEI-X T70BCIG-X T70BCWH-X</p>	<p>Off White Elec. Ivory Light Gray White</p>	<p>For use with Twin-70 raceway base. Used to join two pieces of Twin-70 base together. Standard package quantity of 10.</p>
 <p>T-70 Cover Coupler</p>	<p>T70CCIW-X T70CCEI-X T70CCIG-X T70CCWH-X</p>	<p>Off White Elec. Ivory Light Gray White</p>	<p>For use with Twin-70 raceway cover. Used to join two pieces of Twin-70 cover together. Standard package quantity of 10.</p>
 <p>Inside Corner Fitting</p> <p>$a = 3.74'' (95.0\text{mm})$ $b = 1.87'' (47.5\text{mm})$ $c = 7.51'' (190.8\text{mm})$ $d = 3.00'' (76.2\text{mm})$ $e = 3.00'' (76.2\text{mm})$</p>	<p>T702ICIW T702ICEI T702ICIG T702ICWH</p>	<p>Off White Elec. Ivory Light Gray White</p>	<p>For use with Twin-70 raceway. Used to join Twin-70 raceway at inside corners. Maintains minimum 1" bend radius of cabling. Standard package quantity of 1.</p>
 <p>Outside Corner Fitting</p> <p>$a = 7.51'' (190.8\text{mm})$ $b = 4.80'' (121.9\text{mm})$ $c = 3.88'' (98.6\text{mm})$</p>	<p>T702OCIW T702OCEI T702OCIG T702OCWH</p>	<p>Off White Elec. Ivory Light Gray White</p>	<p>For use with Twin-70 raceway. Used to join Twin-70 raceway at outside corners. Maintains minimum 1" bend radius of cabling. Standard package quantity of 1.</p>
 <p>Right Angle Fitting</p> <p>$a = 9.46'' (240.3\text{mm})$ $b = 8.48'' (215.4\text{mm})$</p>	<p>T702RAIW T702RAEI T702RAIG T702RAWH</p>	<p>Off White Elec. Ivory Light Gray White</p>	<p>For use with Twin-70 raceway. Used to join sections of Twin-70 raceway to make horizontal 90° right angles. Maintains minimum 1" bend radius of cabling. Standard package quantity of 1.</p>
 <p>End Cap Fitting</p> <p>$a = 1.97'' (50.0\text{mm})$ $b = 1.25'' (31.8\text{mm})$ $c = 1.86'' (47.2\text{mm})$</p>	<p>T702ECIW T702ECEI T702ECIG T702ECWH</p>	<p>Off White Elec. Ivory Light Gray White</p>	<p>For use with Twin-70 raceway. Used to terminate or to enter the raceway. Includes breakouts for ½" conduit. Standard package quantity of 1.</p>
 <p>Entrance End Fitting</p> <p>$a = 3.28'' (83.8\text{mm})$ $b = 6.66'' (169.2\text{mm})$ $c = 5.56'' (141.2\text{mm})$</p>	<p>T702EEIW T702EEEI T702EEIG T702EEWH</p>	<p>Off White Elec. Ivory Light Gray White</p>	<p>For use with Twin-70 raceway. Used to enter the raceway through conduit. Includes ½", ¾", 1", 1¼" and 1½" concentric conduit breakouts. Maintains minimum 1" bend radius of cabling. Standard package quantity of 1.</p>

PANDUIT® PAN-WAY™ Twin-70 Surface Raceway Components

Drawing / Dimensions	Part Number	Color	Description
 <p>Tee Fitting</p> <p>a = 11.95" (303.5mm) b = 9.91" (251.7mm) c = 9.79" (248.7mm) d = 5.07" (128.8mm) e = 9.82" (249.4mm) f = 8.68" (220.5mm)</p>	T702TIW T702TEI T702TIG T702TWH	Off White Elec. Ivory Light Gray White	For use with Twin-70 raceway. Used to join sections of Twin-70 raceway to form a "tee" junction. Maintains minimum 1" bend radius of cabling. Standard package quantity of 1.
 <p>Transition Fitting</p> <p>a = 6.98" (177.3mm) b = 7.22" (183.4mm) c = 9.00" (228.6mm)</p>	T702TRIW T702TREI T702TRIG T702TRWH	Off White Elec. Ivory Light Gray White	For use with Twin-70 raceway. Used to transition from Twin-70 raceway to an undivided T-70 raceway. Standard package quantity of 1.
 <p>Transition Fitting</p> <p>a = 9.00" (228.6mm) b = 6.98" (177.3mm) c = 7.22" (183.4mm)</p>	T702TRLIW T702TRLEI T702TRLIG T702TRLWH	Off White Elec. Ivory Light Gray White	For use with Twin-70 raceway. Used to transition from Twin-70 raceway to an undivided LD Profile raceway. Standard package quantity of 1.
 <p>Transition Fitting Insert</p> <p>a = 6.95" (176.5mm) b = 3.62" (91.9mm)</p>	T702TRI	Light Gray	For use with T702TR or T702TRL fittings. Used to transition from Twin-70 raceway to divided T-70 or LD2P10 raceway. Standard package quantity of 1.
 <p>Divider Wall</p> <p>x = 0.75" (19.1mm) y = 1.34" (34.0mm)</p>	T70DW8	Light Gray	Snaps onto rails in raceway base to create separate channels. Supplied in eight (8) foot lengths.
 <p>Wire Retainer</p>	T70WR-X	Light Gray	Holds wires in place. Will not interfere with cover installation. To add wire or cable, simply remove cover and loosen one side of retainer. Standard package quantity of 10.
 <p>Device Bracket</p>	T70DB-X	Light Gray	Used to quickly mount NEMA standard electrical receptacles (including GFCI) and screw mount communications faceplates in Twin-70 raceway. Standard package quantity of 10.

PAN-WAY™ Twin-70 Raceway — Technical Data			
Material	Rigid PVC	COLOR CHOICES: Colors shown are approximate.	
Flammability	UL94V-0	IW	Off White (IW) —Matches International White color standard RAL9001
		Off White	
Voltage Rating	UL-5A 600VAC CSA 22.2 No. 62-93 300VAC	EI	Electrical Ivory (EI) —Matches NEMA and Lucent Electrical ivory color
		Elec. Ivory	
Approvals	UL Listed E95425 (raceway) UL Listed E116129 (fittings)	IG	Light Gray (IG) —Matches International Gray color standard RAL7030
		Lt. Gray	
NEC	Article 352B	WH	White (WH) —Panduit standard bright white color
		White	

PANDUIT® PAN-WAY™ Twin-70 Surface Raceway Components

Drawing / Dimensions	Part Number	Color	Description
 <p>Snap-On Bezel</p> <p>a = 2.75" (69.9mm) b = 3.80" (96.5mm) c = 4.50" (114.3mm)</p>	T70BH1IW T70BH1EI T70BH1IG T70BH1WH	Off White Elec. Ivory Light Gray White	For use with Twin-70 raceway. Used to mount a single 1/2 style insert on Twin-70 raceway in a horizontal run. Standard package quantity of 1.
 <p>Snap-On Bezel</p> <p>a = 2.75" (69.9mm) b = 3.80" (96.5mm) c = 4.50" (114.3mm)</p>	T70BH2IW T70BH2EI T70BH2IG T70BH2WH	Off White Elec. Ivory Light Gray White	For use with Twin-70 raceway. Used to mount two 1/2 style insert on Twin-70 raceway in a horizontal run. Standard package quantity of 1.
 <p>Snap-On Bezel</p> <p>a = 2.75" (69.9mm) b = 3.80" (96.5mm) c = 4.50" (114.3mm)</p>	T70B1IW T70B1EI T70B1IG T70B1WH	Off White Elec. Ivory Light Gray White	For use with Twin-70 raceway. Used to mount a single 1/2 style insert on Twin-70 raceway in a vertical run. Standard package quantity of 1.
 <p>Snap-On Bezel</p> <p>a = 2.75" (69.9mm) b = 3.80" (96.5mm) c = 4.50" (114.3mm)</p>	T70B2IW T70B2EI T70B2IG T70B2WH	Off White Elec. Ivory Light Gray White	For use with Twin-70 raceway. Used to mount two 1/2 style insert on Twin-70 raceway in a vertical run. Standard package quantity of 1.
 <p>Snap-On Faceplate</p> <p>a = 2.75" (69.9mm) b = 3.80" (96.5mm) c = 4.50" (114.3mm)</p>	T70PGIW T70PGEI T70PGIG T70PGWH	Off White Elec. Ivory Light Gray White	For use with Twin-70 raceway. Used to mount rectangular electrical outlets on Twin-70 raceway. Standard package quantity of 1.
 <p>Snap-On Faceplate</p> <p>a = 2.75" (69.9mm) b = 3.80" (96.5mm) c = 4.50" (114.3mm)</p>	T70PIW T70PEI T70PIG T70PWH	Off White Elec. Ivory Light Gray White	For use with Twin-70 raceway. Used to mount duplex electrical outlets on Twin-70 raceway. Standard package quantity of 1.

Installation of Faceplates into TWIN-70 Raceway



Snap the device bracket into the slot on the raceway wall and then into the slot on the divider wall.

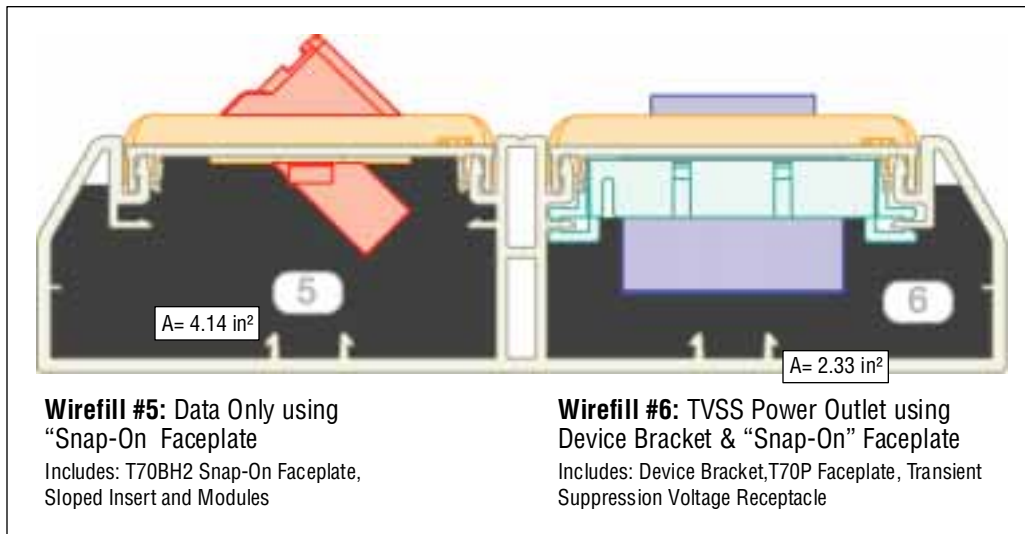
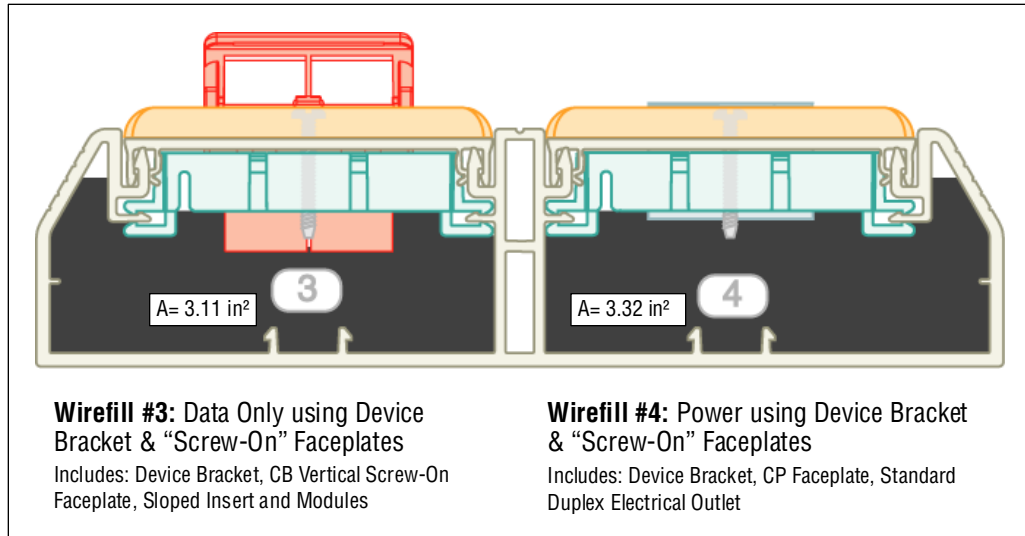
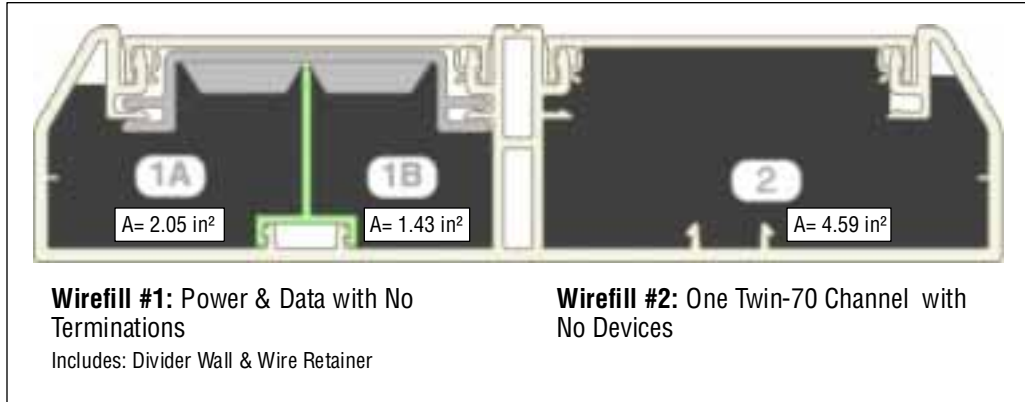
Install the electrical outlet onto the device bracket.

Snap-on the electrical faceplate over the electrical outlet, and snap-on the communication faceplate over the data channel.

Complete the installation by snapping in the **MINI-COM**® Inserts for your voice and data communication requirements.

Fill Capacities for Twin-70 Raceway

This information is to be used as a guide in selecting the proper size raceway. The maximum amounts may vary according to the wire installation methods, straightness of wires, etc.



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SPEC=40% wirefill—the recommended design in cable capacity. Leaves room for future moves, adds and changes

MAX=60% wirefill—the maximum cable quantity based on cable interweaving and packing factors or UL temperature rise test for electrical

Fill Capacity Table for:														
-Electrical			-Voice Grade 24 AWG UTP					-Data Grade 24 AWG UTP						
Raceway Channel Configurations	See Wirefill #	Electrical Cables			Voice Grade Cables						Data Grade Cables			
		AWG			24 AWG UTP CM/CMR						24 AWG UTP CM			
		14	12	10	2 pr		3 pr		4 pr		25 pr		Cat. 5 4 pr	
		THHN/T90			DIA.= 0.120		DIA.= 0.150		DIA.= 0.190		DIA.=0.422		DIA.=0.217	
		0.105	0.122	0.153	FILL		FILL		FILL		FILL		FILL	
MAX	MAX	MAX	SPEC	MAX	SPEC	MAX	SPEC	MAX	SPEC	MAX	SPEC	MAX	SPEC	MAX
Wirefill #1: Power & Data No Terminations	1A	n/a	n/a	n/a	73	109	46	70	29	43	6	9	22	33
	1B	16	16	15	51	76	32	49	20	30	4	6	15	23
Wirefill #2: One Twin-70 Channel with No Devices	2	n/a	n/a	n/a	162	244	104	156	65	97	13	20	50	75
Wirefill #3: Data Only using Device Bracket & Screw-On Faceplates	3	—	—	—	110	165	70	106	44	66	9	13	34	50
Wirefill #4: Power using Device Bracket & Screw-On Faceplates	4	15	13	13	117	176	75	113	47	70	9	14	36	54
Wirefill #5: Data Only using Snap-On Faceplates	5	—	—	—	146	220	94	141	58	88	12	18	45	67
Wirefill #6: TVSS Power Outlet using Device Bracket & Snap-On Faceplate	6	16	16	14	82	124	53	79	33	49	7	10	25	38

Fill Capacity Table for:															
-Data Grade 22 AWG UTP				-Data Grade 24, 22 AWG STP						- 1A STP					
Raceway Channel Configurations	See Wirefill #	Data Grade Cables													
		24 AWG STP CM				22 AWG UTP CM				22 AWG STP CM				1A 22 AWG STP CM	
		25 pr		4 pr		25 pr		4 pr		25 pr		4 pr			
		DIA.=0.512		DIA.=0.250		DIA.= 0.544		DIA.= 0.234		DIA.=0.635		DIA.=0.286			
		FILL		FILL		FILL		FILL		FILL		FILL			
SPEC	MAX	SPEC	MAX	SPEC	MAX	SPEC	MAX	SPEC	MAX	SPEC	MAX	SPEC	MAX	SPEC	MAX
Wirefill #1: Power & Data No Terminations	1A	4	6	17	25	4	5	19	29	3	4	13	19	6	8
	1B	3	4	12	17	2	4	13	20	2	3	9	13	4	6
Wirefill #2: One Twin-70 Channel with No Devices	2	9	13	37	56	8	12	43	64	6	9	29	43	13	19
Wirefill #3: Data Only using Device Bracket & Screw-On Faceplates	3	6	9	25	38	5	8	29	43	4	6	19	29	9	13
Wirefill #4: Power using Device Bracket & Screw-On Faceplates	4	6	10	27	41	6	9	31	46	4	6	21	31	9	14
Wirefill #5: Data Only using Snap-On Faceplates	5	8	12	34	51	7	11	39	58	5	8	26	39	11	17
Wirefill #6: TVSS Power Outlet using Device Bracket & Snap-On Faceplate	6	5	7	19	28	4	6	22	33	3	4	15	22	6	10

Fill Capacities for Twin-70 Raceway

This information is to be used as a guide in selecting the proper size raceway. The maximum amounts may vary according to the wire installation methods, straightness of wires, etc.

SPEC=40% wirefill—the recommended design in cable capacity. Leaves room for future moves, adds and changes

MAX=60% wirefill—the maximum cable quantity based on cable interweaving and packing factors or UL temperature rise test for electrical

Fill Capacity Table for: -Coax Cables											
Raceway Channel Configurations	See Wirefill #	Coax Cables									
		RG6/u		RG11/u		RG58/u		RG59/u		RG62A/u	
		DIA.=0.270		DIA.=0.405		DIA.=0.193		DIA.=0.242		DIA.=0.242	
		FILL		FILL		FILL		FILL		FILL	
		SPEC	MAX	SPEC	MAX	SPEC	MAX	SPEC	MAX	SPEC	MAX
Wirefill #1: Power & Data No Terminations	1A	14	21	6	10	28	42	18	27	18	27
	1B	10	15	4	7	20	29	12	19	12	19
Wirefill #2: One Twin-70 Channel with No Devices	2	32	48	14	21	63	94	40	60	40	60
Wirefill #3: Data Only using Device Bracket & Screw-On Faceplates	3	22	33	10	14	43	64	27	41	27	41
Wirefill #4: Power using Device Bracket & Screw-On Faceplates	4	23	35	10	15	45	68	29	43	29	43
Wirefill #5: Data Only using Snap-On Faceplates	5	29	43	13	19	57	85	36	54	36	54
Wirefill #6: TVSS Power Outlet using Device Bracket & Snap-On Faceplate	6	16	24	7	11	32	48	20	30	20	30

Fill Capacity Table for: -Fiber Optic Cable (62.5/125mm) -Signal Cables															
Raceway Channel Configurations	See Wirefill #	Fiber Optic Cables (62.5/125mm)						Signal Cables							
		2 Strand		4 Strand		6 Strand		18AWG		20 AWG		22 AWG		24 AWG	
		DIA.=0.175		DIA.=0.175		DIA.=0.210		DIA.=0.066		DIA.=0.057		DIA.=0.050		DIA.=0.044	
		FILL		FILL		FILL		FILL		FILL		FILL		FILL	
		SPEC	MAX	SPEC	MAX	SPEC	MAX	SPEC	MAX	SPEC	MAX	SPEC	MAX	SPEC	MAX
Wirefill #1: Power & Data No Terminations	1A	34	51	34	51	24	36	240	360	322	482	418	627	540	809
	1B	24	36	24	36	17	25	167	251	224	336	291	437	376	565
Wirefill #2: One Twin-70 Channel with No Devices	2	76	115	76	115	53	80	537	805	720	1080	936	1403	1208	1812
Wirefill #3: Data Only using Device Bracket & Screw-On Faceplates	3	52	78	52	78	36	54	364	546	488	732	634	951	819	1228
Wirefill #4: Power using Device Bracket & Screw-On Faceplates	4	55	83	55	83	38	58	388	583	521	781	677	1015	874	1311
Wirefill #5: Data Only using Snap-On Faceplates	5	69	103	69	103	48	72	484	726	649	974	844	1266	1090	1634
Wirefill #6: TVSS Power Outlet using Device Bracket & Snap-On Faceplate	6	39	58	39	58	27	40	273	409	365	548	475	712	613	920

Raceway Cutting Instructions:

For small quantities, use a fine tooth handsaw. For larger quantities use a plastic cutting saw blade for clean burr-free cuts. Recommend: *Carbide 80T or 100T, .090" thickness, .125" kerf.*

PANDUIT® PAN-WAY™ Twin-70 Surface Raceway Components



PAN-WAY™ Twin-70 Surface Raceway System is part of a complete line of PANDUIT Surface Raceway Products



PAN-WAY Surface Raceway System
SA101N60A



Wiring Duct and Fiber Optic Duct System
SA101N64B



Condensed Full Line Electrical Catalog
SA101N13J

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SA117N214-LP
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