



Ultra-Profile Bearings

APG Ultra-Profile P/N Description & Engineering Data

Example Part Number: AS060025RS1C1

AS AISI 440C stainless Steel

060 Bearing ID: 060 = 60mm

025 Design Width Including:
2.5mm = Width
3.0mm = Radial Width

R Contact Type
A = Angular Contact
R = Radial Contact
X = 4-Pt Contact

S Separator Type
S = Spacer Balls
F = Full Complement

1 Precision Class
1 = APG standard precision

C1 Internal Fit
- C1 = 0.000 – 0.013 mm clearance
C2 = 0.013 – 0.025 mm clearance
C3 = 0.025 – 0.510 mm clearance
P1 = 0.000 – 0.130 mm preload
P2 = 0.013 – 0.025 mm preload
blank = standard clearance

Applications Include:

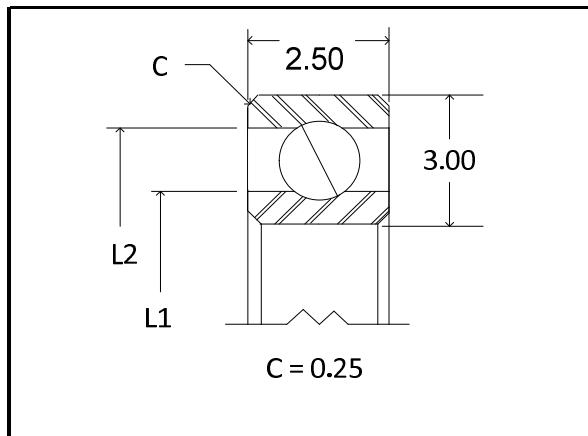


Medical, Semiconductor, Industrial Robots – Cameras - UAV sensors – Antennas
Anywhere performance can be enhanced with reduced weight, envelop and torque

Ultra-Profile Bearing Design Considerations

Ultra-Profile bearings provide a creative solution for lightly loaded applications where space is extremely limited and rotation is slow or intermittent. With the smallest width to diameter ratios available, a mechanisms overall size, weight and power consumption can greatly be reduced.

The thin nature of these bearings should be considered when applying them. The bearing rings have greater compliancy than traditional thin section bearings and localized stress concentrations may result under load. While it is assumed that the mating shafts and housings will be of similar lightweight design, it is recommended to support these bearings around the entire circumference of the inner and outer rings. Torque performance and bearing life may be sacrificed should distortion of the shaft and housings occur. The limit loads provided in the tables should be considered as they are not based upon traditional ABMA standards and testing is recommended to insure that overall system performance and life objectives are achieved.



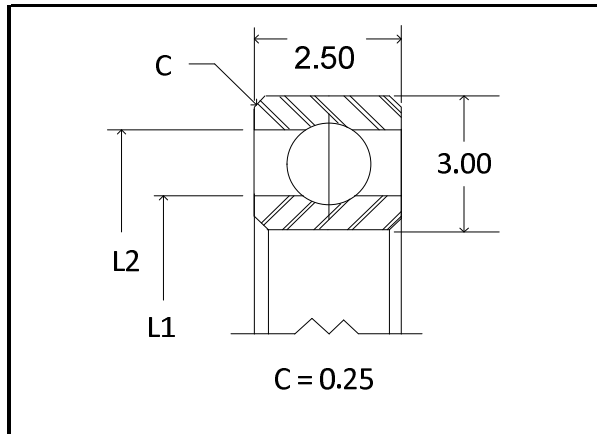
Angular Contact, 440C Ultra-Profile Bearings with 1/16" inch balls

Industry Reference	American Precision Group Part Numbers	Dimensions in millimeters				Load Capacity		Limit Load	Approx. Weight (grams)
		Inside Diameter	Outside Diameter	Land Dia L1	Land Dia L2	Radial Load		Axial Load	
						N	N	N	
S03503AS0	AS035025AS1	35.0	41.0	37.2	38.8	382	383	1,334	5
S06003AS0	AS060025AS1	60.0	66.0	62.2	63.8	649	552	1,112	9
S07003AS0	AS070025AS1	70.0	76.0	72.2	73.8	756	609	1,068	11
S07403AS0	AS074025AS1	74.0	80.0	76.2	77.8	799	632	1,045	11
S08030AS0	AS080025AS1	80.0	86.0	82.2	83.8	863	663	1,001	12
S09003AS0	AS090025AS1	90.0	96.0	92.2	93.8	970	716	956	13
S10003AS0	AS100025AS1	100.0	106.0	102.2	103.8	1,077	765	890	15
S11003AS0	AS110025AS1	110.0	116.0	112.2	113.8	1,183	814	867	16
S12003AS0	AS120025AS1	120.0	126.0	122.2	123.8	1,290	863	82	18
S13003AS0	AS130025AS1	130.0	136.0	132.2	133.8	1,407	912	778	19
S14003AS0	AS140025AS1	140.0	146.0	142.2	143.8	1,514	956	734	21
S15003AS0	AS150025AS1	150.0	156.0	152.2	153.8	1,621	1,001	712	22
S16003AS0	AS160025AS1	160.0	166.0	162.2	163.8	1,727	1,045	689	24
S17003AS0	AS170025AS1	170.0	176.0	172.2	173.8	1,834	1,085	667	25

NOTES:

- 1.) Load capacities are shown for individual cases only, not combined loading. Please consult APG engineering for more detailed load analysis.
- 2.) Dynamic Loads are shown for 1 million revolutions of L10 life.
- 3.) Static load capacities indicate loads that will not induce brinelling and assume a rigid shaft and housing support
- 4.) C is the maximum shaft and housings fillet radius the bearing corners will clear
- 5.) Maximum speed assumes load capacities do not exceed 20% of the dynamic load

Contact APG for further assistance:
 Toll Free (800) 720-8865
www.amprecisiongroup.com

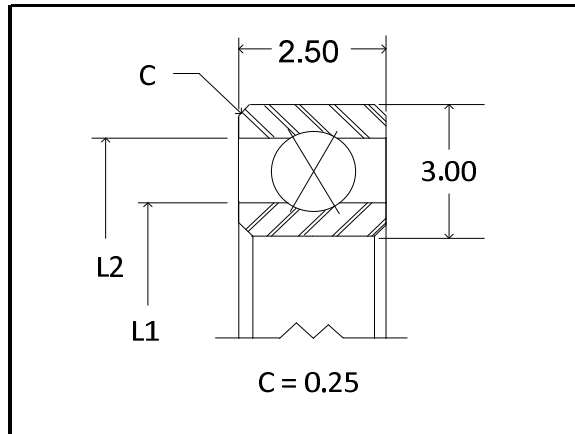


Radial Contact, 440C Ultra-Profile Bearings with 1/16" inch balls								
Industry Reference	American Precision Group Part Numbers	Dimensions in millimeters				Load Capacity		Approx. Weight (grams)
		Inside Diameter	Outside Diameter	Land Dia L1	Land Dia L2	Radial Load		
						N Static	N Dynamic	
S03503CS0	AS035025RS1	35.0	41.0	37.2	38.8	418	418	5
S06003CS0	AS060025RS1	60.0	66.0	62.2	63.8	711	605	9
S07003CS0	AS070025RS1	70.0	76.0	72.2	73.8	827	667	11
S07403CS0	AS074025RS1	74.0	80.0	76.2	77.8	875	689	11
S08030CS0	AS080025RS1	80.0	86.0	82.2	83.8	944	725	12
S09003CS0	AS090025RS1	90.0	96.0	92.2	93.8	1,062	783	13
S10003CS0	AS100025RS1	100.0	106.0	102.2	103.8	1,178	841	15
S11003CS0	AS110025RS1	110.0	116.0	112.2	113.8	1,295	894	16
S12003CS0	AS120025RS1	120.0	126.0	122.2	123.8	1,412	943	18
S13003CS0	AS130025RS1	130.0	136.0	132.2	133.8	1,540	1001	19
S14003CS0	AS140025RS1	140.0	146.0	142.2	143.8	1,658	1050	21
S15003CS0	AS150025RS1	150.0	156.0	152.2	153.8	1,774	1099	22
S16003CS0	AS160025RS1	160.0	166.0	162.2	163.8	1,891	1143	24
S17003CS0	AS170025RS1	170.0	176.0	172.2	173.8	2,006	1192	25

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- 4.) C is the maximum shaft and housings fillet radius the bearing corners will clear
- 5.) Maximum speed assumes load capacities do not exceed 20% of the dynamic load

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4-Point Contact, 440C Ultra-Profile Bearings with 1/16" inch balls										
	American Precision Group Part Numbers	Dimensions in millimeters				Load Capacity		Limit Loads		Approx. Weight (grams)
		Inside Diameter	Outside Diameter	Land Dia L1	Land Dia L2	Radial Load		Axial Load	Moment	
						N Static	N Dynamic	N	Nm	
								Static	Static	
S03503XS0	AS035025XS1	35.0	41.0	37.2	38.8	711	585	1,045	7.9	5
S06003XS0	AS060025XS1	60.0	66.0	62.2	63.8	1,208	847	934	11.8	9
S07003XS0	AS070025XS1	70.0	76.0	72.2	73.8	1,407	934	890	13.0	11
S07403XS0	AS074025XS1	74.0	80.0	76.2	77.8	1,487	965	867	13.4	11
S08003XS0	AS080025XS1	80.0	86.0	82.2	83.8	1,606	1015	845	14.0	12
S09003XS0	AS090025XS1	90.0	96.0	92.2	93.8	1,805	1096	801	14.9	13
S10003XS0	AS100025XS1	100.0	106.0	102.2	103.8	2,003	1177	756	15.6	15
S11003XS0	AS110025XS1	110.0	116.0	112.2	113.8	2,201	1252	734	16.6	16
S12003XS0	AS120025XS1	120.0	126.0	122.2	123.8	2,400	1320	689	17.0	18
S13003XS0	AS130025XS1	130.0	136.0	132.2	133.8	2,618	1401	645	17.2	19
S14003XS0	AS140025XS1	140.0	146.0	142.2	143.8	2,818	1470	623	17.8	21
S15003XS0	AS150025XS1	150.0	156.0	152.2	153.8	3,016	1538	601	18.4	22
S16003XS0	AS160025XS1	160.0	166.0	162.2	163.8	3,215	1600	578	18.9	24
S17003XS0	AS170025XS1	170.0	176.0	172.2	173.8	3,413	1669	556	19.2	25

NOTES:

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AMERICAN PRECISION GROUP - ULTRA PROFILE BALL BEARINGS
Tolerances and Recommended Fits for Typical Applications

Dimensions in mm

Bearing Size Bore	Bearing ID's & OD's Nominal +.0000	Radial and Axial Runout		Rotating Shaft		Stationary Shaft		Bearing Internal Fit Diametral Clearance Type R & X Only	
		Inner Race	Outer Race	Shaft Diameter Nominal +/-	Housing ID Nominal +/-	Shaft Diameter Value +/-	Housing ID Value +/-	Before Installation	
	min	max							
35	-0.013	.010	.010	+0.013 / - 0.000	+0.013 / - 0.000	34.987 +0.000 / -0.013	40.987 +0.000 / -0.013	.030	.046
60	-0.013	.013	.013	+0.013 / - 0.000	+0.013 / - 0.000	59.987 +0.000 / -0.013	65.987 +0.000 / -0.013	.030	.046
70	-0.013	.015	.015	+0.013 / - 0.000	+0.013 / - 0.000	69.987 +0.000 / -0.013	75.987 +0.000 / -0.013	.030	.046
74	-0.013	.015	.015	+0.013 / - 0.000	+0.013 / - 0.000	73.987 +0.000 / -0.013	79.987 +0.000 / -0.013	.030	.046
80	-0.013	.015	.015	+0.013 / - 0.000	+0.013 / - 0.000	79.987 +0.000 / -0.013	85.987 +0.000 / -0.013	.030	.046
90	-0.013	.015	.015	+0.013 / - 0.000	+0.013 / - 0.000	89.987 +0.000 / -0.013	95.987 +0.000 / -0.013	.030	.046
100	-0.013	.015	.015	+0.013 / - 0.000	+0.013 / - 0.000	99.987 +0.000 / -0.013	105.987 +0.000 / -0.013	.030	.046
110	-0.013	.020	.020	+0.013 / - 0.000	+0.013 / - 0.000	109.987 +0.000 / -0.013	159.987 +0.000 / -0.013	.030	.046
120	-0.013	.020	.020	+0.013 / - 0.000	+0.013 / - 0.000	119.987 +0.000 / -0.013	125.987 +0.000 / -0.013	.030	.046
130	-0.013	.020	.020	+0.013 / - 0.000	+0.013 / - 0.000	129.987 +0.000 / -0.013	135.987 +0.000 / -0.013	.030	.046
140	-0.013	.025	.025	+0.013 / - 0.000	+0.013 / - 0.000	139.987 +0.000 / -0.013	145.987 +0.000 / -0.013	.030	.046
150	-0.013	.025	.025	+0.013 / - 0.000	+0.013 / - 0.000	149.987 +0.000 / -0.013	155.987 +0.000 / -0.013	.030	.046
160	-0.013	.025	.025	+0.013 / - 0.000	+0.013 / - 0.000	159.987 +0.000 / -0.013	165.987 +0.000 / -0.013	.030	.046
170	-0.013	.025	.025	+0.013 / - 0.000	+0.013 / - 0.000	169.987 +0.000 / -0.013	175.987 +0.000 / -0.013	.030	.046

Please call APG for
your local Representative
Phone: (800) 720-8865