New SGL Drills with Through Coolant for Stainless Steel

beyond

Primary Application

The all-new B21_SGL series solid carbide drills are designed specifically for stainless steel applications, offering high performance and long tool life in high-temperature alloys and regular steel, also.

By combining unique Kennametal features, such as the all-new SGL-point-geometry with patented gashing, a unique flute design, and a best-in-class coating into one tool, the B21*SGL drill is the ultimate high-volume production tool.

Features and Benefits

New SGL Point Design

- Improved web thinning and patented gashing which migrates in a straight cutting edge, enables high cutting parameters (feeds).
- Creates controlled chips, which lead to a reliable performance.
- Improved centering capabilities for better positioning accuracy and improved hole quality.

Unique Flute Design

- Large chip-flute cross-section and small web diameter improve the chip evacuation and the capability to drill deeper holes in difficult-to-machine materials.
- The highly-polished surface ensures superior chip evacuation, even when low-pressure coolant is applied.

New KCMS15™ Beyond Grade

- A monolayer PVD AlTiN-coated fine-grain carbide with superior surface finish.
- First choice for stainless steel and high-temperature resistant materials for longer tool life.
- The coating offers high hardness and excellent abrasive and adhesive wear resistance, as well as enhanced high-temperature properties, increasing its applicability, also, to MQL machining of steel.

Specifically for stainless steel applications.

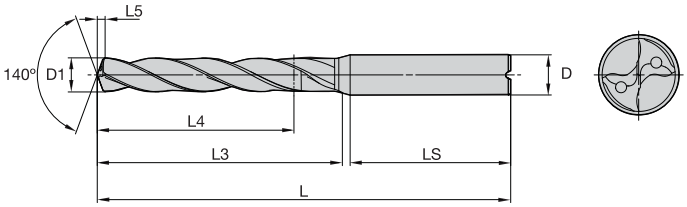


Customization

- Intermediate diameters available as semi-standards.
- Length variations and step drills available as custom solutions.
- High step diameter ratios and very complex step drill geometries are not recommended for austenitic stainless steel.
- Using Kennametal slim line hydraulic chucks is recommended if workpiece contours need to be bypassed.





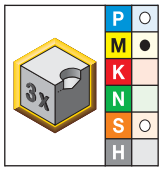


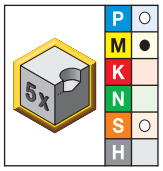
For information on L, L3, and L4 max, see the Solid Carbide Drills foldout table.

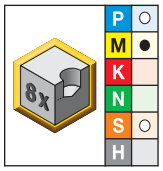


beyond

B210/B211/B212_SGL • ~3 x D/~5 x D/~8 x D





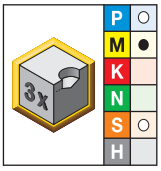


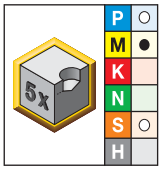
● first choice
○ alternate choice

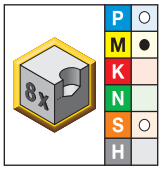
short • KCMS15	long • KCMS15	extra long • KCMS15	D1 diameter mm	in	fraction	wire size	L5	LS	D
B210Z02500SGL	–	–	2,500	.0984	–	–	0,4	28	3
B210A03000SGL	B211A03000SGL	B212A03000SGL	3,000	.1181	–	–	0,4	36	6
B210A03048SGL	B211A03048SGL	–	3,048	.1200	–	31	0,5	36	6
–	B211A03100SGL	–	3,100	.1220	–	–	0,5	36	6
B210A03175SGL	B211A03175SGL	B212A03175SGL	3,175	.1250	1/8	–	0,5	36	6
B210A03200SGL	B211A03200SGL	B212A03200SGL	3,200	.1260	–	–	0,5	36	6
B210A03264SGL	–	B212A03264SGL	3,264	.1285	–	30	0,5	36	6
B210A03300SGL	B211A03300SGL	B212A03300SGL	3,300	.1299	–	–	0,5	36	6
B210A03400SGL	B211A03400SGL	–	3,400	.1339	–	–	0,5	36	6
B210A03455SGL	B211A03455SGL	B212A03455SGL	3,455	.1360	–	–	0,5	36	6
B210A03500SGL	B211A03500SGL	B212A03500SGL	3,500	.1378	–	–	0,5	36	6
–	B211A03571SGL	B212A03571SGL	3,571	.1406	9/64	–	0,5	36	6
–	B211A03600SGL	–	3,600	.1417	–	–	0,5	36	6
–	B211A03658SGL	B212A03658SGL	3,658	.1440	–	–	0,5	36	6
–	B211A03700SGL	B212A03700SGL	3,700	.1457	–	–	0,5	36	6
B210A03700SGL	–	–	3,700	.1457	–	–	0,6	36	6
–	B211A03734SGL	–	3,734	.1470	–	26	0,6	36	6
B210A03800SGL	B211A03800SGL	B212A03800SGL	3,800	.1496	–	–	0,6	36	6
–	B211A03861SGL	–	3,861	.1520	–	24	0,6	36	6
–	B211A03900SGL	–	3,900	.1535	–	–	0,6	36	6
B210A04000SGL	B211A04000SGL	B212A04000SGL	4,000	.1575	–	–	0,6	36	6
–	B211A04039SGL	B212A04039SGL	4,039	.1590	–	–	0,6	36	6
B210A04100SGL	B211A04100SGL	B212A04100SGL	4,100	.1614	–	–	0,6	36	6
B210A04200SGL	B211A04200SGL	B212A04200SGL	4,200	.1654	–	–	0,6	36	6
–	B211A04217SGL	–	4,217	.1660	–	–	0,6	36	6
B210A04300SGL	B211A04300SGL	B212A04300SGL	4,300	.1693	–	–	0,6	36	6
–	B211A04366SGL	B212A04366SGL	4,366	.1719	–	–	0,6	36	6
B210A04366SGL	–	–	4,366	.1719	–	–	0,7	36	6
–	B211A04400SGL	–	4,400	.1732	–	–	0,7	36	6
B210A04500SGL	B211A04500SGL	B212A04500SGL	4,500	.1772	–	–	0,7	36	6
–	B211A04600SGL	–	4,600	.1811	–	–	0,7	36	6
B210A04700SGL	B211A04700SGL	B212A04700SGL	4,700	.1850	–	–	0,7	36	6

(continued)

(B210/B211/B212_SGL • ~3 x D/~5 x D/~8 x D — continued)





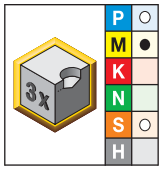


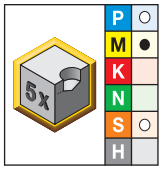
● first choice
○ alternate choice

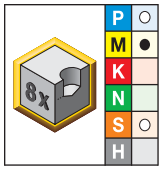
short • KCMS15	long • KCMS15	extra long • KCMS15	D1 diameter mm	in	fraction	wire size	L5	LS	D
–	B211A04763SGL	–	4,763	.1875	3/16	–	0,7	36	6
B210A04800SGL	B211A04800SGL	B212A04800SGL	4,800	.1890	–	–	0,7	36	6
–	B211A04852SGL	B212A04852SGL	4,852	.1910	–	–	0,7	36	6
B210A04900SGL	B211A04900SGL	–	4,900	.1929	–	–	0,7	36	6
B210A05000SGL	B211A05000SGL	B212A05000SGL	5,000	.1969	–	–	0,7	36	6
B210A05100SGL	B211A05100SGL	B212A05100SGL	5,100	.2008	–	–	0,8	36	6
B210A05106SGL	B211A05106SGL	–	5,106	.2010	–	–	0,8	36	6
B210A05159SGL	B211A05159SGL	–	5,159	.2031	–	–	0,8	36	6
B210A05200SGL	B211A05200SGL	B212A05200SGL	5,200	.2047	–	–	0,8	36	6
B210A05300SGL	B211A05300SGL	–	5,300	.2087	–	–	0,8	36	6
B210A05400SGL	B211A05400SGL	–	5,400	.2126	–	–	0,8	36	6
B210A05500SGL	B211A05500SGL	B212A05500SGL	5,500	.2165	–	–	0,8	36	6
–	B211A05558SGL	–	5,558	.2188	–	–	0,8	36	6
–	B211A05600SGL	–	5,600	.2205	–	–	0,8	36	6
B210A05616SGL	–	–	5,616	.2211	–	2	0,8	36	6
–	B211A05700SGL	–	5,700	.2244	–	–	0,8	36	6
B210A05800SGL	B211A05800SGL	B212A05800SGL	5,800	.2283	–	–	0,9	36	6
–	B211A05900SGL	–	5,900	.2323	–	–	0,9	36	6
B210A05954SGL	B211A05954SGL	–	5,954	.2344	15/64	–	0,9	36	6
B210A06000SGL	B211A06000SGL	B212A06000SGL	6,000	.2362	–	–	0,9	36	6
B210A06100SGL	B211A06100SGL	–	6,100	.2402	–	–	0,9	36	8
B210A06200SGL	B211A06200SGL	–	6,200	.2441	–	–	0,9	36	8
B210A06300SGL	B211A06300SGL	–	6,300	.2480	–	–	0,9	36	8
B210A06350SGL	B211A06350SGL	B212A06350SGL	6,350	.2500	1/4	–	0,9	36	8
–	B211A06400SGL	–	6,400	.2520	–	–	0,9	36	8
B210A06400SGL	–	–	6,400	.2520	–	–	1,0	36	8
B210A06500SGL	B211A06500SGL	B212A06500SGL	6,500	.2559	–	–	1,0	36	8
–	B211A06600SGL	–	6,600	.2598	–	–	1,0	36	8
–	B211A06630SGL	B212A06630SGL	6,630	.2610	–	–	1,0	36	8
B210A06700SGL	B211A06700SGL	–	6,700	.2638	–	–	1,0	36	8
B210A06800SGL	B211A06800SGL	B212A06800SGL	6,800	.2677	–	–	1,0	36	8
B210A06900SGL	B211A06900SGL	–	6,900	.2717	–	–	1,0	36	8
B210A07000SGL	B211A07000SGL	B212A07000SGL	7,000	.2756	–	–	1,0	36	8
B210A07100SGL	B211A07100SGL	–	7,100	.2795	–	–	1,1	36	8
B210A07145SGL	–	–	7,145	.2813	9/32	–	1,1	36	8
–	B211A07200SGL	–	7,200	.2835	–	–	1,1	36	8
–	B211A07300SGL	–	7,300	.2874	–	–	1,1	36	8
B210A07400SGL	B211A07400SGL	–	7,400	.2913	–	–	1,1	36	8
B210A07500SGL	B211A07500SGL	–	7,500	.2953	–	–	1,1	36	8
–	–	B212A07500SGL	7,500	.2953	–	–	1,1	74	8
–	B211A07600SGL	–	7,600	.2992	–	–	1,1	36	8
–	B211A07700SGL	–	7,700	.3031	–	–	1,1	36	8
B210A07800SGL	B211A07800SGL	B212A07800SGL	7,800	.3071	–	–	1,2	36	8
–	B211A07900SGL	–	7,900	.3110	–	–	1,2	36	8
B210A07938SGL	B211A07938SGL	–	7,938	.3125	5/16	–	1,2	36	8
B210A08000SGL	B211A08000SGL	B212A08000SGL	8,000	.3150	–	–	1,2	36	8
B210A08100SGL	B211A08100SGL	–	8,100	.3189	–	–	1,2	40	10
B210A08200SGL	B211A08200SGL	–	8,200	.3228	–	–	1,2	40	10
B210A08400SGL	B211A08400SGL	B212A08400SGL	8,400	.3307	–	–	1,2	40	10
B210A08433SGL	–	–	8,433	.3320	–	–	1,3	40	10
B210A08500SGL	B211A08500SGL	B212A08500SGL	8,500	.3346	–	–	1,3	40	10
B210A08600SGL	B211A08600SGL	–	8,600	.3386	–	–	1,3	40	10

(continued)

(B210/B211/B212_SGL • ~3 x D/~5 x D/~8 x D — continued)





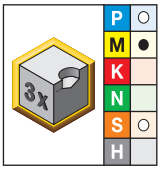


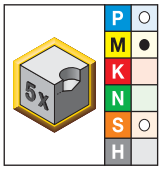
● first choice
○ alternate choice

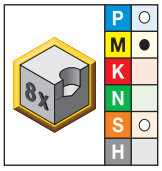
short • KCMS15	long • KCMS15	extra long • KCMS15	D1 diameter mm	in	fraction	wire size	L5	LS	D
B210A08700SGL	B211A08700SGL	–	8,700	.3425	–	–	1,3	40	10
B210A08800SGL	B211A08800SGL	B212A08800SGL	8,800	.3465	–	–	1,3	40	10
–	B211A08900SGL	–	8,900	.3504	–	–	1,3	40	10
B210A09000SGL	B211A09000SGL	B212A09000SGL	9,000	.3543	–	–	1,3	40	10
B210A09093SGL	–	–	9,093	.3580	–	–	1,4	40	10
–	B211A09100SGL	–	9,100	.3583	–	–	1,3	40	10
–	B211A09200SGL	–	9,200	.3622	–	–	1,4	40	10
–	B211A09300SGL	–	9,300	.3661	–	–	1,4	40	10
–	B211A09400SGL	–	9,400	.3701	–	–	1,4	40	10
B210A09500SGL	B211A09500SGL	B212A09500SGL	9,500	.3740	–	–	1,4	40	10
–	B211A09525SGL	–	9,525	.3750	3/8	–	1,4	40	10
–	B211A09600SGL	–	9,600	.3780	–	–	1,4	40	10
B210A09700SGL	B211A09700SGL	–	9,700	.3819	–	–	1,4	40	10
B210A09800SGL	B211A09800SGL	–	9,800	.3858	–	–	1,5	40	10
–	B211A09900SGL	–	9,900	.3898	–	–	1,5	40	10
B210A09921SGL	–	–	9,921	.3906	25/64	–	1,5	40	10
B210A10000SGL	B211A10000SGL	B212A10000SGL	10,000	.3937	–	–	1,5	40	10
–	B211A10100SGL	–	10,100	.3976	–	–	1,5	45	12
B210A10200SGL	B211A10200SGL	B212A10200SGL	10,200	.4016	–	–	1,5	45	12
–	B211A10300SGL	–	10,300	.4055	–	–	1,5	45	12
B210A10400SGL	B211A10400SGL	–	10,400	.4094	–	–	1,5	45	12
B210A10500SGL	B211A10500SGL	B212A10500SGL	10,500	.4134	–	–	1,6	45	12
–	B211A10700SGL	–	10,700	.4213	–	–	1,6	45	12
B210A10716SGL	–	–	10,716	.4219	–	–	1,6	45	12
B210A10800SGL	B211A10800SGL	–	10,800	.4252	–	–	1,6	45	12
B210A11000SGL	B211A11000SGL	B212A11000SGL	11,000	.4331	–	–	1,6	45	12
–	B211A11100SGL	–	11,100	.4370	–	–	1,6	45	12
–	B211A11113SGL	–	11,113	.4375	7/16	–	1,6	45	12
B210A11200SGL	B211A11200SGL	–	11,200	.4409	–	–	1,7	45	12
–	B211A11400SGL	–	11,400	.4488	–	–	1,7	45	12
B210A11500SGL	B211A11500SGL	–	11,500	.4528	–	–	1,7	45	12
B210A11509SGL	–	–	11,509	.4531	–	–	1,7	45	12
–	B211A11700SGL	–	11,700	.4606	–	–	1,7	45	12
–	B211A11800SGL	B212A11800SGL	11,800	.4646	–	–	1,7	45	12
B210A12000SGL	B211A12000SGL	B212A12000SGL	12,000	.4724	–	–	1,8	45	12
–	B211A12100SGL	–	12,100	.4764	–	–	1,8	45	14
B210A12200SGL	B211A12200SGL	–	12,200	.4803	–	–	1,8	45	14
–	B211A12300SGL	–	12,300	.4843	–	–	1,8	45	14
B210A12304SGL	–	–	12,304	.4844	31/64	–	1,8	45	14
B210A12500SGL	B211A12500SGL	B212A12500SGL	12,500	.4921	–	–	1,9	45	14
B210A12700SGL	B211A12700SGL	–	12,700	.5000	1/2	–	1,9	45	14
B210A12800SGL	B211A12800SGL	–	12,800	.5039	–	–	1,9	45	14
–	B211A12900SGL	–	12,900	.5079	–	–	1,9	45	14
B210A13000SGL	B211A13000SGL	B212A13000SGL	13,000	.5118	–	–	1,9	45	14
–	B211A13100SGL	–	13,100	.5157	–	–	1,9	45	14
–	B211A13200SGL	–	13,200	.5197	–	–	2,0	45	14
–	B211A13300SGL	–	13,300	.5236	–	–	2,0	45	14
B210A13495SGL	–	–	13,495	.5313	17/32	–	2,0	45	14
B210A13500SGL	B211A13500SGL	B212A13500SGL	13,500	.5315	–	–	2,0	45	14
–	B211A13800SGL	–	13,800	.5433	–	–	2,0	45	14
B210A14000SGL	B211A14000SGL	B212A14000SGL	14,000	.5512	–	–	2,1	45	14
B210A14100SGL	B211A14100SGL	–	14,100	.5551	–	–	2,1	48	16

(continued)

(B210/B211/B212_SGL • ~3 x D/~5 x D/~8 x D — continued)







● first choice
○ alternate choice

short • KCMS15	long • KCMS15	extra long • KCMS15	D1 diameter mm	D1 diameter in	D1 diameter fraction	D1 diameter wire size	L5	LS	D
B210A14200SGL	–	–	14,200	.5591	—	—	2,1	48	16
–	B211A14300SGL	–	14,300	.5630	—	—	2,1	48	16
–	B211A14400SGL	–	14,400	.5669	—	—	2,1	48	16
–	B211A14500SGL	–	14,500	.5709	—	—	2,1	48	16
B210A14500SGL	–	–	14,500	.5709	—	—	2,2	48	16
–	B211A14600SGL	–	14,600	.5748	—	—	2,2	48	16
–	B211A14800SGL	–	14,800	.5827	—	—	2,2	48	16
B210A15000SGL	B211A15000SGL	–	15,000	.5906	—	—	2,2	48	16
–	B211A15100SGL	–	15,100	.5945	—	—	2,2	48	16
–	B211A15300SGL	–	15,300	.6024	—	—	2,3	48	16
B210A15500SGL	B211A15500SGL	–	15,500	.6102	—	—	2,3	48	16
–	B211A15700SGL	–	15,700	.6181	—	—	2,3	48	16
B210A15875SGL	B211A15875SGL	–	15,875	.6250	5/8	—	2,4	48	16
B210A16000SGL	B211A16000SGL	–	16,000	.6299	—	—	2,4	48	16
–	B211A16100SGL	–	16,100	.6339	—	—	2,4	48	18
B210A16129SGL	–	–	16,129	.6350	—	—	2,4	48	18
B210A16500SGL	B211A16500SGL	–	16,500	.6496	—	—	2,4	48	18
B210A16670SGL	–	–	16,670	.6563	21/32	—	2,5	48	18
B210A17000SGL	B211A17000SGL	–	17,000	.6693	—	—	2,5	48	18
B210A17500SGL	B211A17500SGL	–	17,500	.6890	—	—	2,6	48	18
–	B211A17700SGL	–	17,700	.6969	—	—	2,6	48	18
B210A18000SGL	B211A18000SGL	–	18,000	.7087	—	—	2,7	48	18
B210A18500SGL	B211A18500SGL	–	18,500	.7283	—	—	2,7	50	20
–	B211A19000SGL	–	19,000	.7480	—	—	2,8	50	20
B210A19050SGL	–	–	19,050	.7500	3/4	—	2,8	50	20
–	B211A19159SGL	–	19,159	.7543	—	—	2,8	50	20
–	B211A19300SGL	–	19,300	.7598	—	—	2,9	50	20
B210A19500SGL	–	–	19,500	.7677	—	—	2,9	50	20
B210A20000SGL	–	–	20,000	.7874	—	—	3,0	50	20
–	B211A20500SGL	–	20,500	.8071	—	—	3,0	50	20

Tolerance • Metric

nominal size range	D1 tolerance m7	D tolerance h6
>3–6	0,004/0,016	0,000/-0,008
>6–10	0,006/0,021	0,000/-0,009
>10–18	0,007/0,025	0,000/-0,011
>18–25,4	0,008/0,029	0,000/-0,013

Tolerance • Inch

nominal size range	D1 tolerance m7	D tolerance h6
>.1181 to .2362	.0002/.0006	.0000/-.0003
>.2362 to .3937	.0002/.0008	.0000/-.0004
>.3937 to .7087	.0003/.0010	.0000/-.0004
>.7087 to 1.0000	.0003/.0011	.0000/-.0005

HP Drills • B21_SGL Series • Grade KCMS15 • Through Coolant



Material Group		Cutting Speed — vc Range — m/min min	Starting Value	max		Metric Recommended Feed Rate per Rev 3,0	4,0	6,0	8,0	10,0	12,0	16,0	20,0
P	1	110	**160**	210	mm/r	0,05–0,13	0,08–0,19	0,11–0,24	0,14–0,30	0,16–0,35	0,18–0,39	0,20–0,46	0,23–0,51
	2	130	**170**	210	mm/r	0,05–0,13	0,08–0,17	0,11–0,20	0,14–0,24	0,16–0,28	0,18–0,32	0,20–0,37	0,23–0,41
	3	110	**150**	190	mm/r	0,08–0,13	0,12–0,19	0,14–0,24	0,17–0,30	0,20–0,35	0,22–0,39	0,26–0,46	0,29–0,51
	4	80	**120**	150	mm/r	0,08–0,12	0,11–0,18	0,12–0,23	0,15–0,28	0,17–0,33	0,19–0,37	0,22–0,43	0,25–0,48
	5	60	**80**	90	mm/r	0,03–0,11	0,04–0,11	0,05–0,11	0,05–0,14	0,08–0,18	0,11–0,21	0,14–0,24	0,16–0,26
	6	70	**120**	170	mm/r	0,05–0,11	0,08–0,14	0,11–0,17	0,13–0,21	0,15–0,24	0,17–0,27	0,19–0,33	0,22–0,36
M	1	60	**80**	90	mm/r	0,05–0,14	0,06–0,15	0,08–0,17	0,10–0,19	0,12–0,21	0,13–0,22	0,16–0,25	0,18–0,27
	2	50	**70**	90	mm/r	0,05–0,14	0,06–0,15	0,08–0,17	0,10–0,19	0,12–0,21	0,13–0,22	0,16–0,25	0,18–0,27
	3	50	**60**	80	mm/r	0,05–0,14	0,06–0,15	0,08–0,17	0,10–0,19	0,12–0,21	0,13–0,22	0,16–0,25	0,18–0,27
S	1	10	**20**	30	mm/r	0,03–0,08	0,04–0,09	0,05–0,11	0,05–0,11	0,08–0,14	0,11–0,16	0,14–0,19	0,16–0,21
	2	10	**20**	30	mm/r	0,03–0,11	0,04–0,11	0,05–0,11	0,05–0,11	0,08–0,14	0,11–0,16	0,14–0,19	0,16–0,21
	3	20	**30**	40	mm/r	0,03–0,11	0,04–0,11	0,05–0,11	0,05–0,11	0,08–0,14	0,11–0,16	0,14–0,19	0,16–0,21
	4	30	**40**	50	mm/r	0,03–0,04	0,04–0,05	0,06–0,08	0,08–0,10	0,11–0,13	0,13–0,15	0,14–0,18	0,16–0,20

Material Group		Cutting Speed — vc Range — SFM min	Starting Value	max		Inch Recommended Feed Rate per Rev 1/8 .125	3/16 .188	1/4 .250	5/16 .313	3/8 .375	1/2 .500	5/8 .625	3/4 .750
P	1	360	**520**	690	IPR	.002–.005	.003–.008	.004–.009	.006–.012	.006–.014	.007–.015	.008–.018	.009–.020
	2	430	**560**	690	IPR	.002–.005	.003–.007	.004–.008	.006–.009	.006–.011	.007–.013	.008–.015	.009–.016
	3	360	**490**	620	IPR	.003–.005	.005–.008	.006–.009	.007–.012	.008–.014	.009–.015	.010–.018	.011–.020
	4	260	**390**	490	IPR	.003–.005	.004–.007	.005–.009	.006–.011	.007–.013	.008–.015	.009–.017	.010–.019
	5	200	**260**	300	IPR	.001–.004	.002–.004	.002–.004	.002–.006	.003–.007	.004–.008	.006–.009	.006–.010
	6	230	**390**	560	IPR	.002–.004	.003–.006	.004–.007	.005–.008	.006–.009	.007–.011	.008–.013	.009–.014
M	1	200	**260**	300	IPR	.002–.006	.002–.006	.003–.007	.004–.008	.005–.008	.005–.009	.006–.010	.007–.011
	2	160	**230**	300	IPR	.002–.006	.002–.006	.003–.007	.004–.008	.005–.008	.005–.009	.006–.010	.007–.011
	3	160	**200**	260	IPR	.002–.006	.002–.006	.003–.007	.004–.008	.005–.008	.005–.009	.006–.010	.007–.011
S	1	30	**70**	100	IPR	.001–.003	.002–.004	.002–.004	.002–.004	.003–.006	.004–.006	.006–.008	.006–.008
	2	30	**70**	100	IPR	.001–.004	.002–.004	.002–.004	.002–.004	.003–.006	.004–.006	.006–.008	.006–.008
	3	70	**100**	130	IPR	.001–.004	.002–.004	.002–.004	.002–.004	.003–.006	.004–.006	.006–.008	.006–.008
	4	100	**130**	160	IPR	.001–.002	.002–.002	.002–.003	.003–.004	.004–.005	.005–.006	.006–.007	.006–.008