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Summary of Description & Claims

Trade Secret:
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eXp7™ – an eXponential Shoe Sizing System – A shoe sizing system that increments sizes by a percentage increase instead of a fixed increment, e.g. $\frac{1}{6}$ " & $\frac{1}{3}$ cm for $\frac{1}{2}$ size increments in the Barleycorn & Paris Point systems and, $\frac{1}{2}$ cm & $\frac{3}{4}$ cm for the 5mm & $7\frac{1}{2}$ mm increments in the MondoPoint system. The increment is **7 steps per inch** around a $10\frac{1}{2}$ ", $266\frac{2}{3}$ mm foot (10" to 11", 254 to $279\frac{2}{5}$ mm) a non-linear progression that increases the increment value as size increases. Using 5% toe room the increment size at $37\frac{2}{5}$ **IT/EU** is $\frac{1}{3}$ cm ($\frac{1}{2}$ size Paris Point).

Better Fittings & Manufacturing Efficiency – Since this is a ratio based system it produces a more consistent and usable coverage of the sizes providing better fittings which may also reduce the number of sizes needed to cover the the same size range.

Consistent Widths Across The Size Range Produces Easy Last Scaling – The spacing between the Widths is also a percentage increase offering the same benefits. For the existing sizing systems the width increase step becomes larger in size for the smaller sizes relatively speaking, and vice-versa, smaller width increase step for the larger sizes. By using percentage scaling this problem is eliminated. Instead of using the fixed increment values for length and width of $\frac{1}{6}$ " & $\frac{1}{12}$ " for conventional Barleycorn or $\frac{1}{6}$ " & $\frac{1}{16}$ " for Brannock the relationship between widths is a percentage increment spread over 11 widths from approximately 33% to 44% of length providing a consistent increment between all widths across the size range. The **Length:Width:MetatarsalGirth** ratio percentages associated with the width labels are not fixed on a per label basis instead they reflect the **EU Dorothy** data for the most efficient alignment for manufacturing i.e. the center width is a line through the **Length:Width:MetatarsalGirth** graphs that overlays the data to cover the most popular sizes and the wider and narrower widths/girths are percentage increments on either side of this. Labels: **I X Slim**, **II Slim**, **III Narrow**, **IV MedNar**, **V Medium**, **VI MedWide**, **VII Wide**, **VIII X Wide**, **IX 2X Wide**, **X 3X Wide**, **XI 4X Wide**. This covers the approximate width range of the **US** widths **3A** through **5E** from ~33% to ~44% and could be adjusted to cover a narrower or wider range.

5% Toe Room, $\frac{1}{2}$ ", for a 10"/254mm **Foot** and a $10\frac{1}{2}$ "/ $266\frac{2}{3}$ mm **Last**, is used as the Origin and the minimum average amount for Barleycorn & Paris Point sizing but more could be used. For every 1 **eXp7™** size increment there is an ~1.34% length change and an ~1% width change. Within the same size width spacing is ~2.92%. The toe room allowance does not limit toe box lengthening for styling purposes rather this is the minimum toe room requirement.

Use of this technology requires that the product's dimensions are faithful to the specifications for the label.

eXponential 7spi Shoe Sizing

Women's Approximate IT/EU Continental Sizing Overlay

eXp7™	25 UK	22½ usW	× 1½ IT/EU	1.013442691 Foot.in	× 25⅔ Foot.mm	1.049868776 Last.in	× 25⅔ Last.mm
7x0	2.56	5.06	35.0	8.750	222.2	9.186	233.3
7x1	2.93	5.43	35.4	8.868	225.2	9.310	236.5
7x2	3.30	5.80	35.9	8.987	228.3	9.435	239.6
7x3	3.69	6.19	36.4	9.108	231.3	9.562	242.9
7x4	4.07	6.57	36.9	9.230	234.4	9.690	246.1
7x5	4.46	6.96	37.4	9.354	237.6	9.821	249.4
7x6	4.86	7.36	37.9	9.480	240.8	9.953	252.8
7x7	5.26	7.76	38.4	9.607	244.0	10.086	256.2
7x8	5.67	8.17	38.9	9.736	247.3	10.222	259.6
7x9	6.08	8.58	39.4	9.867	250.6	10.359	263.1
8x0	6.50	9.00	40.0	10.000	254.0	10.500	266.7
8x1	6.92	9.42	40.5	10.134	257.4	10.640	270.3
8x2	7.35	9.85	41.1	10.271	260.9	10.783	273.9
8x3	7.78	10.28	41.6	10.409	264.4	10.928	277.6
8x4	8.22	10.72	42.2	10.549	267.9	11.075	281.3
8x5	8.67	11.17	42.7	10.690	271.5	11.224	285.1
8x6	9.12	11.62	43.3	10.834	275.2	11.374	288.9
8x7	9.58	12.08	43.9	10.980	278.9	11.527	292.8
8x8	10.05	12.55	44.5	11.127	282.6	11.682	296.7
8x9	10.52	13.02	45.1	11.277	286.4	11.839	300.7
9x0	11.00	13.50	45.7	11.429	290.3	12.000	304.8

Reference values specified in mm (MondoPoint)

$$IT / EU = 1\frac{1}{2} \times \text{Last.cm} = 4 \times \text{Foot.in}$$

$$[UK|usW] = 3 \times \text{Last.in} - [25|22\frac{1}{2}]$$

$$= IT / EU \div 1.27 - [25|22\frac{1}{2}]$$

$$+5\% \text{ Toe Room Factor} = 26\frac{2}{3} \div 25\frac{2}{5} = 1.049868776$$

$$eXp7^{\text{TM}} \text{ Foot Increment Factor} = \sqrt[10]{8 \div 7} = 1.013442691$$

$$eXp7^{\text{TM}} \text{ Width Increment Factor} = \sqrt[10]{4 \div 3} = 1.029186009$$

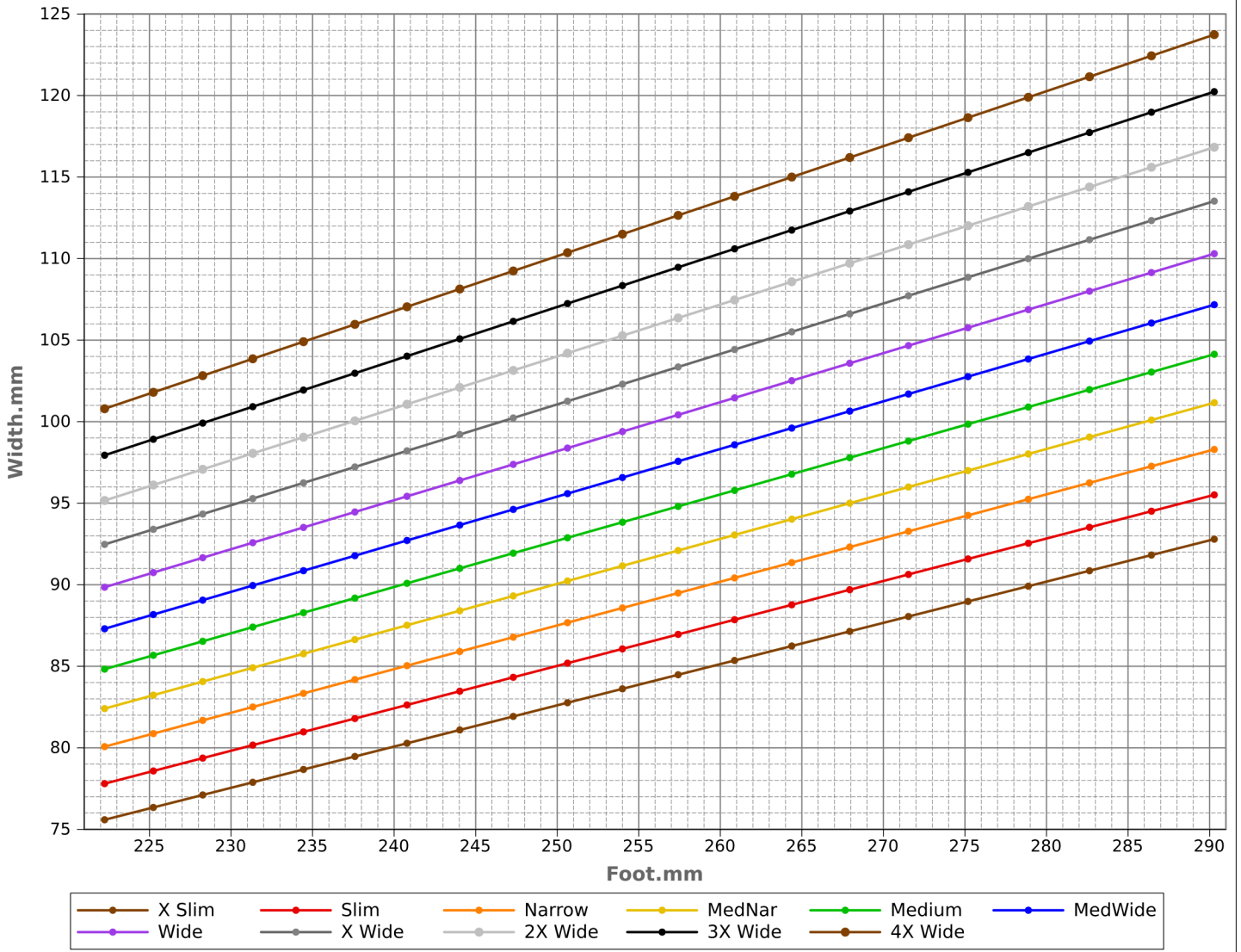
eXp7™ Width

I	II	III	IV	V	VI	VII	VIII	IX	X	XI
XS	S	N	MN	M	MW	W	XW	2XW	3XW	4XW
X Slim	Slim	Narrow	Medium Narrow	Medium	Medium Wide	Wide	X Wide	2X Wide	3X Wide	4X Wide
75.6	77.8	80.1	82.4	84.8	87.3	89.8	92.5	95.2	97.9	100.8
76.3	78.6	80.9	83.2	85.7	88.2	90.7	93.4	96.1	98.9	101.8
77.1	79.4	81.7	84.1	86.5	89.1	91.7	94.3	97.1	99.9	102.8
77.9	80.2	82.5	84.9	87.4	90.0	92.6	95.3	98.1	100.9	103.9
78.7	81.0	83.3	85.8	88.3	90.9	93.5	96.2	99.0	101.9	104.9
79.5	81.8	84.2	86.6	89.2	91.8	94.5	97.2	100.1	103.0	106.0
80.3	82.6	85.0	87.5	90.1	92.7	95.4	98.2	101.1	104.0	107.0
81.1	83.5	85.9	88.4	91.0	93.7	96.4	99.2	102.1	105.1	108.1
81.9	84.3	86.8	89.3	91.9	94.6	97.4	100.2	103.1	106.2	109.2
82.8	85.2	87.7	90.2	92.9	95.6	98.4	101.3	104.2	107.2	110.4
83.6	86.1	88.6	91.2	93.8	96.6	99.4	102.3	105.3	108.3	111.5
84.5	87.0	89.5	92.1	94.8	97.6	100.4	103.4	106.4	109.5	112.7
85.4	87.9	90.4	93.1	95.8	98.6	101.5	104.4	107.5	110.6	113.8
86.2	88.8	91.4	94.0	96.8	99.6	102.5	105.5	108.6	111.7	115.0
87.1	89.7	92.3	95.0	97.8	100.6	103.6	106.6	109.7	112.9	116.2
88.1	90.6	93.3	96.0	98.8	101.7	104.7	107.7	110.9	114.1	117.4
89.0	91.6	94.3	97.0	99.8	102.8	105.8	108.9	112.0	115.3	118.6
89.9	92.5	95.2	98.0	100.9	103.8	106.9	110.0	113.2	116.5	119.9
90.9	93.5	96.2	99.1	102.0	104.9	108.0	111.2	114.4	117.7	121.2
91.8	94.5	97.3	100.1	103.0	106.0	109.1	112.3	115.6	119.0	122.4
92.8	95.5	98.3	101.2	104.1	107.2	110.3	113.5	116.8	120.2	123.7

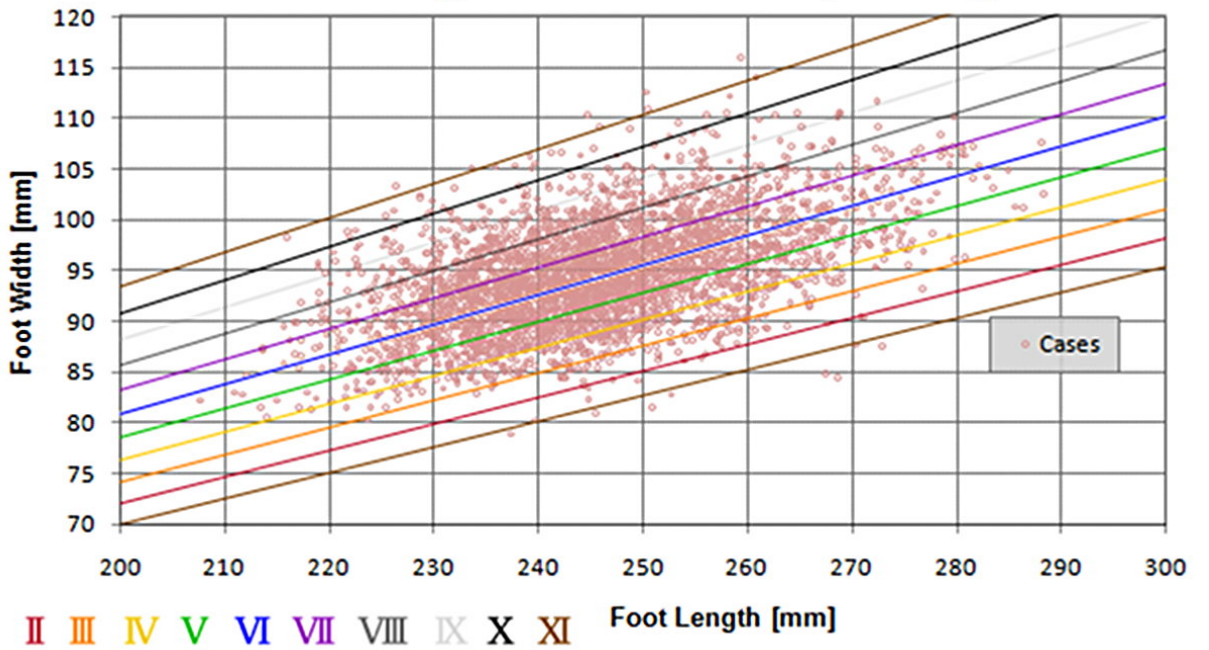
All values are in mm (MondoPoint)

All Foot measurements are taken Barefoot, with Hose or Thin Trouser Socks. If thicker socks are intended to be worn with a particular type of shoe or boot then the **Lasts** from which they are made from should have a slight increase in size made to them to compensate. A given percentage increase should be established for the type of sock to be worn for each shoe or boot design. Different increases in the **Length, Width & MetatarsalGirth** will be needed, most for the **MetatarsalGirth** and least for the **Length**.

eXp7™ Width



Foot Length vs. Foot Width (female)



EU

**Dorothy
Width
Graph
with
Overlay**

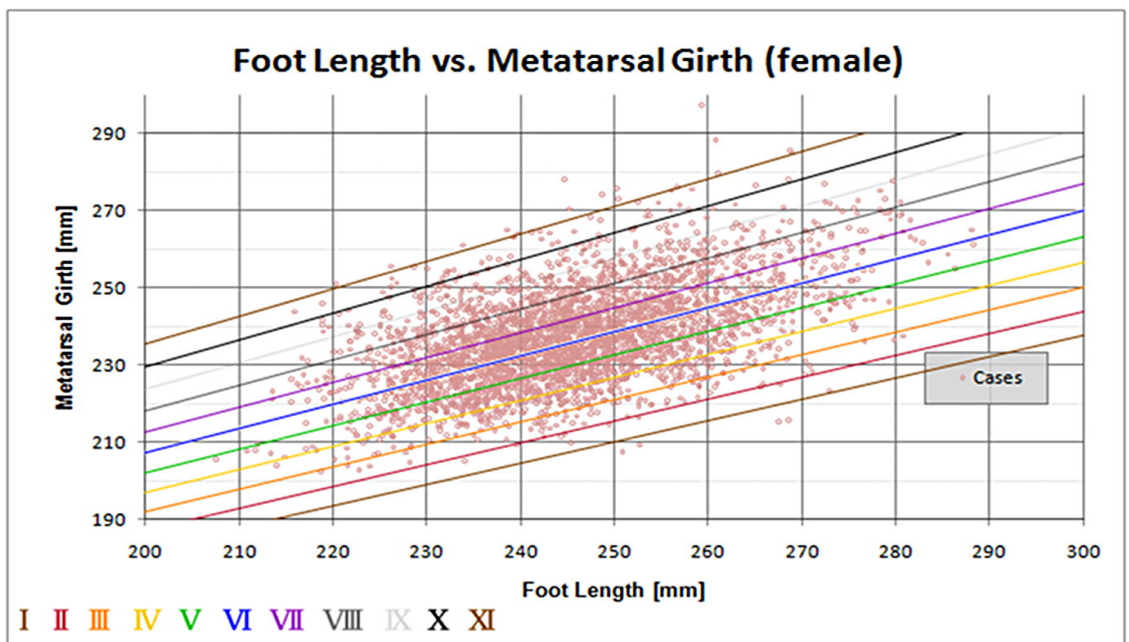
I II III IV V VI VII VIII IX X XI Foot Length [mm]

eXp7™ Girth

I	II	III	IV	V	VI	VII	VIII	IX	X	XI
XS	S	N	MN	M	MW	W	XW	2XW	3XW	4XW
X			Medium	Medium	Medium		X	2X	3X	4X
Slim	Slim	Narrow	Narrow		Wide	Wide	Wide	Wide	Wide	Wide
194.7	199.8	204.9	210.2	215.6	221.2	226.9	232.8	238.7	244.9	251.2
196.4	201.4	206.7	212.0	217.5	223.1	228.8	234.7	240.8	247.0	253.3
198.1	203.2	208.4	213.8	219.3	225.0	230.8	236.7	242.8	249.1	255.5
199.8	204.9	210.2	215.6	221.2	226.9	232.7	238.8	244.9	251.2	257.7
201.5	206.7	212.0	217.5	223.1	228.8	234.7	240.8	247.0	253.4	259.9
203.2	208.5	213.8	219.4	225.0	230.8	236.8	242.9	249.1	255.6	262.2
205.0	210.3	215.7	221.3	227.0	232.8	238.8	245.0	251.3	257.8	264.4
206.8	212.1	217.6	223.2	229.0	234.9	240.9	247.1	253.5	260.0	266.7
208.6	214.0	219.5	225.2	231.0	236.9	243.0	249.3	255.7	262.3	269.1
210.4	215.8	221.4	227.1	233.0	239.0	245.2	251.5	258.0	264.6	271.5
212.3	217.8	223.4	229.2	235.1	241.1	247.3	253.7	260.3	267.0	273.9
214.2	219.7	225.4	231.2	237.2	243.3	249.5	256.0	262.6	269.4	276.3
216.1	221.7	227.4	233.3	239.3	245.4	251.8	258.3	264.9	271.8	278.8
218.0	223.6	229.4	235.3	241.4	247.6	254.0	260.6	267.3	274.2	281.3
220.0	225.7	231.5	237.5	243.6	249.9	256.3	262.9	269.7	276.7	283.8
222.0	227.7	233.6	239.6	245.8	252.1	258.6	265.3	272.2	279.2	286.4
224.0	229.8	235.7	241.8	248.0	254.4	261.0	267.7	274.6	281.7	289.0
226.0	231.9	237.9	244.0	250.3	256.8	263.4	270.2	277.1	284.3	291.6
228.1	234.0	240.0	246.2	252.6	259.1	265.8	272.6	279.7	286.9	294.3
230.2	236.1	242.3	248.5	254.9	261.5	268.2	275.2	282.2	289.5	297.0
232.3	238.3	244.5	250.8	257.3	263.9	270.7	277.7	284.9	292.2	299.7

All values are in mm (MondoPoint)

EU
Dorothy
Metatarsal
Girth
Graph
with
Overlay



I II III IV V VI VII VIII IX X XI

eXp7™ Girth

