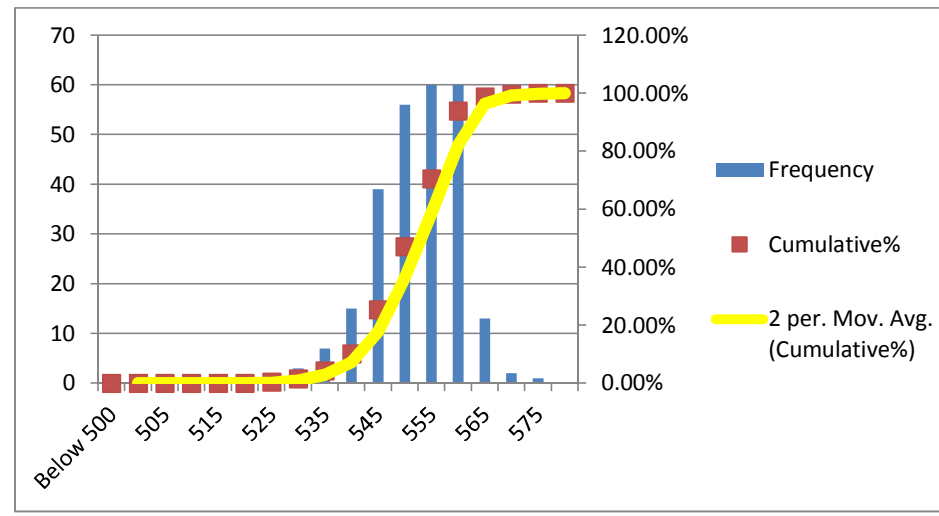


Campaign Length: 03.06.16 to 06.06.16  
 Total Production: 5822.147 MT  
 Billet Rolled: BIS-84, SML-235 & XHS-244  
 Product: Xtreme 500W (25 mm)

YIELD STRENGTH	
Mean	552.432
Median	555
Mode	560
Std. Dev.	7.956
Min	525
Max	575
Count	257

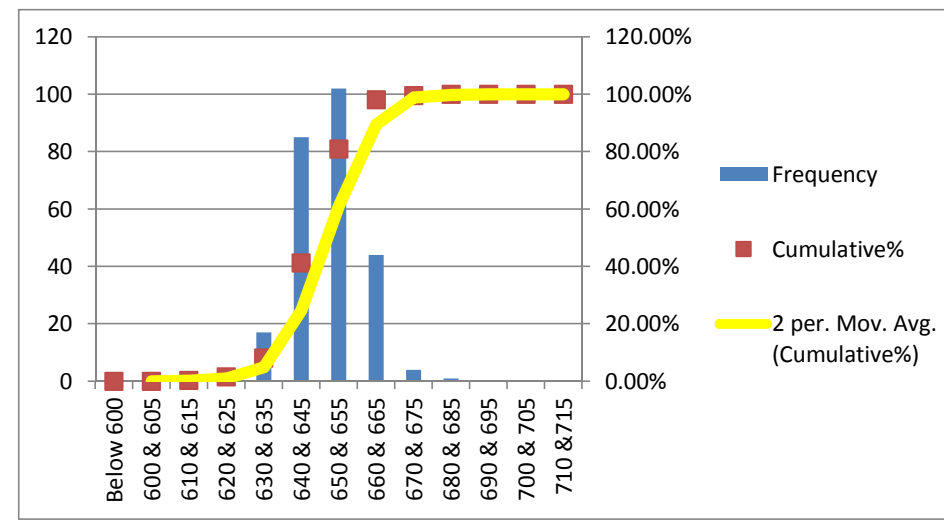
Bin	Frequency	%	Cumulative%
Below 500	0	0.00%	0.00%
500	0	0.00%	0.00%
505	0	0.00%	0.00%
510	0	0.00%	0.00%
515	0	0.00%	0.00%
520	0	0.00%	0.00%
525	1	0.39%	0.39%
530	3	1.17%	1.56%
535	7	2.72%	4.28%
540	15	5.84%	10.12%
545	39	15.18%	25.29%
550	56	21.79%	47.08%
555	60	23.35%	70.43%
560	60	23.35%	93.77%
565	13	5.06%	98.83%
570	2	0.78%	99.61%
575	1	0.39%	100.00%
Above 575	0	0.00%	100.00%
Total	257		



**MINIMUM REQUIREMENTS**  
 As per ISO 6935-2: 500 Mpa  
 As per ASTM A-615: 420 Mpa

ULTIMATE STRENGTH	
Mean	649.591
Median	650
Mode	655
Std. Dev.	9.45
Min	615
Max	680
Count	257

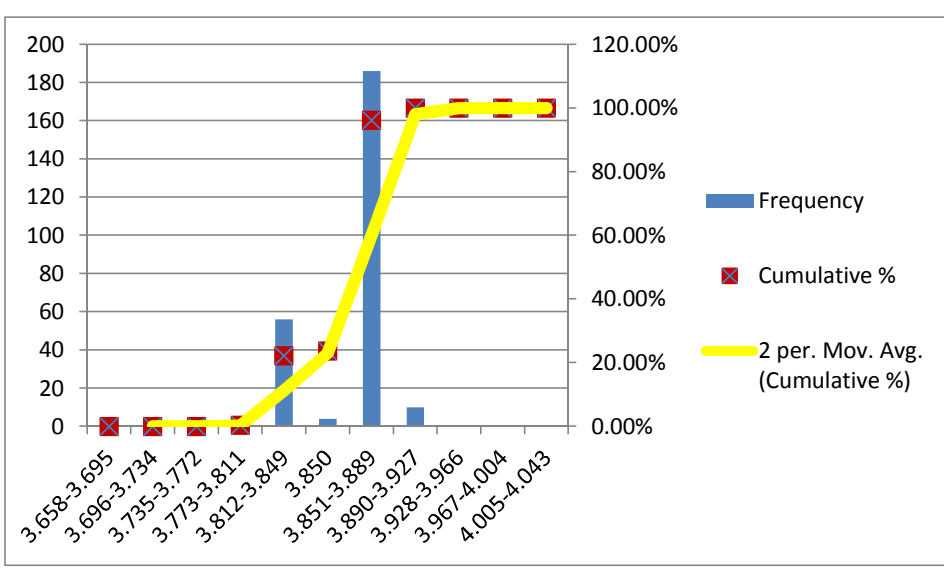
Bin	Frequency	%	Cumulative%
Below 600	0	0.00%	0.00%
600 & 605	0	0.00%	0.00%
610 & 615	1	0.39%	0.39%
620 & 625	3	1.17%	1.56%
630 & 635	17	6.61%	8.17%
640 & 645	85	33.07%	41.25%
650 & 655	102	39.69%	80.93%
660 & 665	44	17.12%	98.05%
670 & 675	4	1.56%	99.61%
680 & 685	1	0.39%	100.00%
690 & 695	0	0.00%	100.00%
700 & 705	0	0.00%	100.00%
710 & 715	0	0.00%	100.00%
720 & 725	0	0.00%	100.00%
730 & 735	0	0.00%	100.00%
Above 735	0	0.00%	100.00%
Total	257		



**MINIMUM REQUIREMENTS**  
 As per ISO 6935-2: 575 Mpa  
 As per ASTM A-615: 620 Mpa

UNIT WEIGHT	
Mean	3.863
Median	3.864
Mode	3.864
Std. Dev.	0.018
Min	3.800
Max	3.910
Count	257

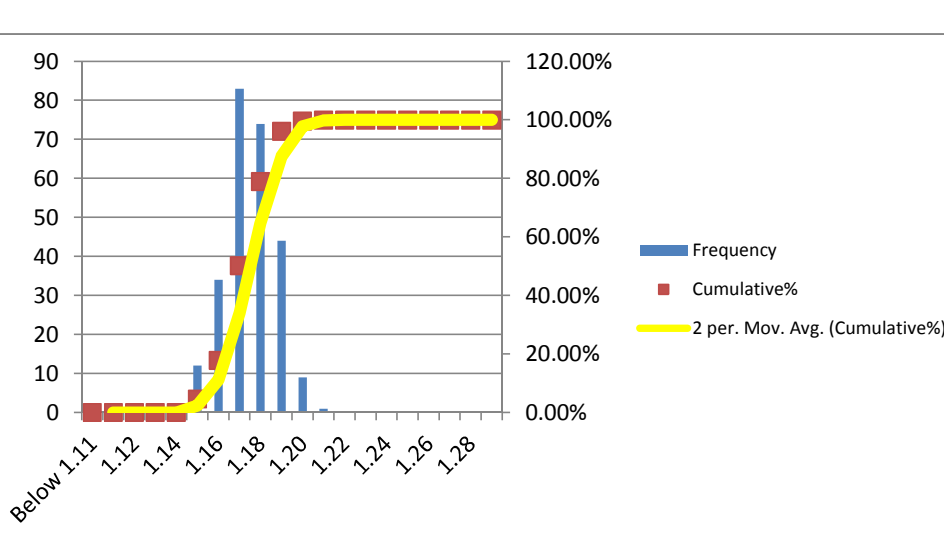
Bin	Frequency	%	Cumulative %
Less Than 3.658	0	0.00%	0.00%
3.658-3.695	0	0.00%	0.00%
3.696-3.734	0	0.00%	0.00%
3.735-3.772	0	0.00%	0.00%
3.773-3.811	1	0.39%	0.39%
3.812-3.849	56	21.79%	22.18%
3.850	4	1.56%	23.74%
3.851-3.889	186	72.37%	96.11%
3.890-3.927	10	3.89%	100.00%
3.928-3.966	0	0.00%	100.00%
3.967-4.004	0	0.00%	100.00%
4.005-4.043	0	0.00%	100.00%
Total	257		



**MINIMUM REQUIREMENTS**  
 As per ISO 6935-2: ± 4%  
 As per ASTM A-615: -6%

T/Y RATIO	
Mean	1.176
Median	1.17
Mode	1.18
Std. Dev.	0.011
Min	1.15
Max	1.21
Count	257

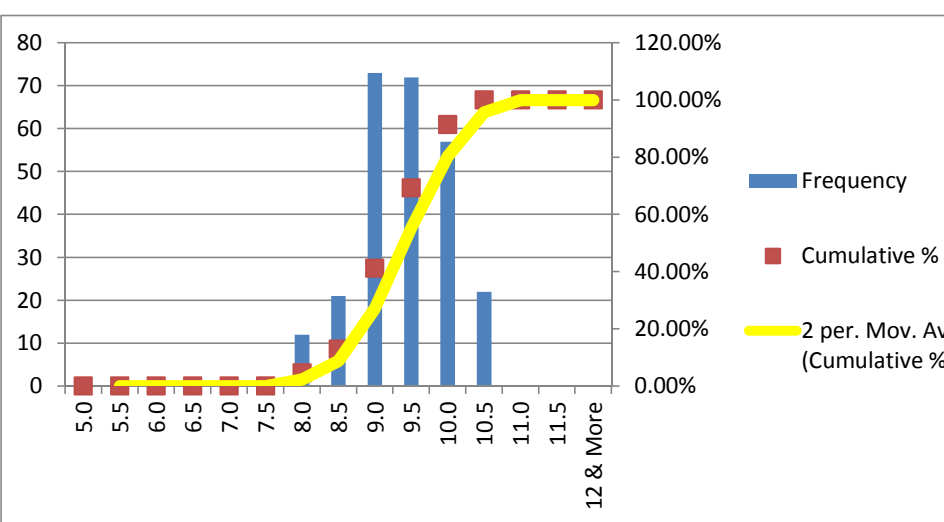
Bin	Frequency	%	Cumulative%
Below 1.11	0	0.00%	0.00%
1.11	0	0.00%	0.00%
1.12	0	0.00%	0.00%
1.13	0	0.00%	0.00%
1.14	0	0.00%	0.00%
1.15	12	4.67%	4.67%
1.16	34	13.23%	17.90%
1.17	83	32.30%	50.19%
1.18	74	28.79%	78.99%
1.19	44	17.12%	96.11%
1.20	9	3.50%	99.61%
1.21	1	0.39%	100.00%
1.22	0	0.00%	100.00%
1.23	0	0.00%	100.00%
1.24	0	0.00%	100.00%
1.25	0	0.00%	100.00%
1.26	0	0.00%	100.00%
1.27	0	0.00%	100.00%
1.28	0	0.00%	100.00%
1.29 & More	0	0.00%	100.00%
Total	257		



**MINIMUM REQUIREMENTS**  
 As per ISO 6935-2: T/Y: 1.15  
 As per ASTM A-615: Not Required

ELN. AT MAX. FORCE (Agt)(GL-200 mm)	
Mean	9.403
Median	9.5
Mode	9.0
Std. Dev.	0.625
Min	8.0
Max	10.5
Count	257

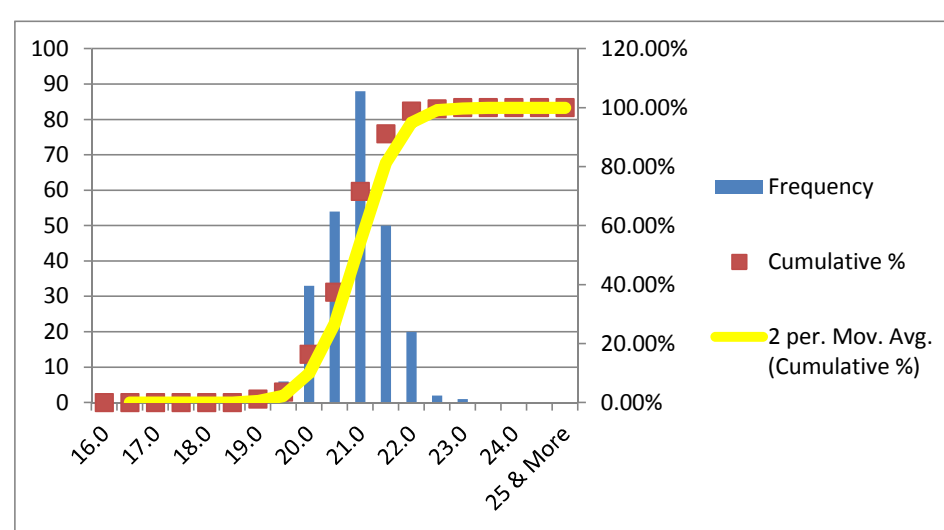
Bin	Frequency	%	Cumulative %
5.0	0	0.00%	0.00%
5.5	0	0.00%	0.00%
6.0	0	0.00%	0.00%
6.5	0	0.00%	0.00%
7.0	0	0.00%	0.00%
7.5	0	0.00%	0.00%
8.0	12	4.67%	4.67%
8.5	21	8.17%	12.84%
9.0	73	28.40%	41.25%
9.5	72	28.02%	69.26%
10.0	57	22.18%	91.44%
10.5	22	8.56%	100.00%
11.0	0	0.00%	100.00%
11.5	0	0.00%	100.00%
12 & More	0	0.00%	100.00%
Total	257		



**MINIMUM REQUIREMENTS**  
 As per ISO 6935-2: 7%  
 As per ASTM A-615: Not Required

ELN. AFTER FRACTURE (A)(GL-SD)	
Mean	20.903
Median	21.0
Mode	21.0
Std. Dev.	0.657
Min	19.0
Max	23.0
Count	257

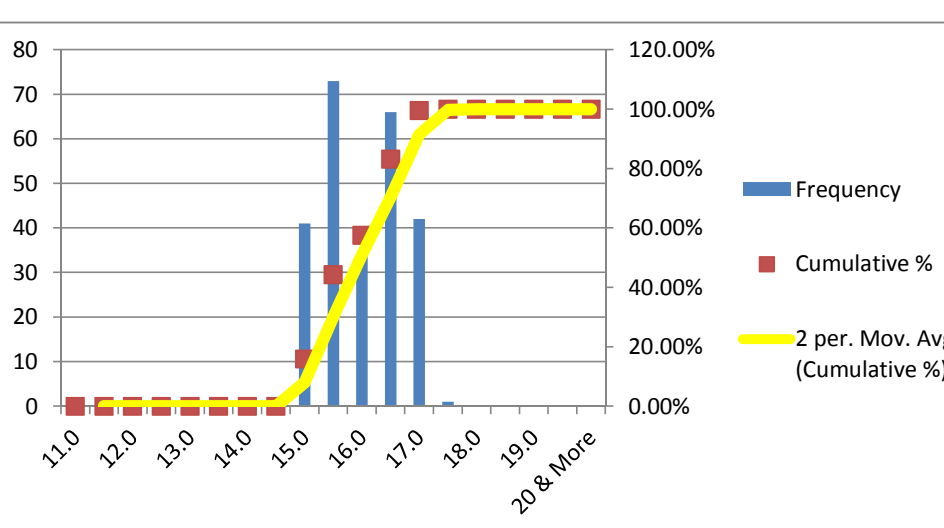
Bin	Frequency	%	Cumulative %
16.0	0	0.00%	0.00%
16.5	0	0.00%	0.00%
17.0	0	0.00%	0.00%
17.5	0	0.00%	0.00%
18.0	0	0.00%	0.00%
18.5	0	0.00%	0.00%
19.0	3	1.17%	1.17%
19.5	6	2.33%	3.50%
20.0	33	12.84%	16.34%
20.5	54	21.01%	37.35%
21.0	88	34.24%	71.60%
21.5	50	19.46%	91.05%
22.0	20	7.78%	98.83%
22.5	2	0.78%	99.61%
23.0	1	0.39%	100.00%
23.5	0	0.00%	100.00%
24.0	0	0.00%	100.00%
24.5	0	0.00%	100.00%
25 & More	0	0.00%	100.00%
Total	257		



**MINIMUM REQUIREMENTS**  
 As per ISO 6935-2: 14%

ELN. AFTER FRACTURE (A)(GL-203.2 mm)	
Mean	15.996
Median	16.0
Mode	15.5
Std. Dev.	0.685
Min	15.0
Max	17.5
Count	257

Bin	Frequency	%	Cumulative %
11.0	0	0.00%	0.00%
11.5	0	0.00%	0.00%
12.0	0	0.00%	0.00%
12.5	0	0.00%	0.00%
13.0	0	0.00%	0.00%
13.5	0	0.00%	0.00%
14.0	0	0.00%	0.00%
14.5	0	0.00%	0.00%
15.0	41	15.95%	15.95%
15.5	73	28.40%	44.36%
16.0	34	13.23%	57.59%
16.5	66	25.68%	83.27%
17.0	42	16.34%	99.61%
17.5	1	0.39%	100.00%
18.0	0	0.00%	100.00%
18.5	0	0.00%	100.00%
19.0	0	0.00%	100.00%
19.5	0	0.00%	100.00%
20 & More	0	0.00%	100.00%
Total	257		



**MINIMUM REQUIREMENTS**  
 As per ASTM A-615: 8%

**BEND TEST:**  
 ALL THE SAMPLES IN THIS CAMPAIGN PASSED THE BEND TEST MAINTAINING MANDREL DIA 5D

**MINIMUM REQUIREMENTS**  
 As per ISO 6935-2: 6D  
 As per ASTM A-615: 5D

**REBEND TEST:**  
 ALL THE SAMPLES IN THIS CAMPAIGN PASSED THE REBEND TEST MAINTAINING MANDREL DIA 7D

**MINIMUM REQUIREMENTS**  
 As per ISO 6935-2: 8D  
 As per ASTM A-615: Not Required

Nominal Diameter D	Unit Weight	Yield or Proof Strength R <sub>eh</sub>	Ultimate Tensile Strength R <sub>m</sub>	T/Y Ratio	% Total Elongation at Maximum Force A <sub>gt</sub>	% Elongation after Fracture A	% Elongation after Fracture A	Height of Transverse Rib	Height of Longitudinal Rib
(mm)	(Kg/m)	(MPa)	(MPa)		GL:200mm	GL: 203.2 mm	GL: 5D	mm	mm
25	3.844	565	670	1.19	10.5	17.0	20.5	1.70	1.40
25	3.856	550	645	1.17	9.0	15.5	21.0		
25	3.860	560	655	1.17	10.0	16.0	20.5		
25	3.861	560	665	1.19	10.5	17.0	20.5		
25	3.867	560	655	1.17	10.0	16.5	20.5		
25	3.865	555	655	1.18	10.0	16.5	21.0		
25	3.838	565	670	1.19	10.5	17.0	20.5		
25	3.800	545	635	1.17	9.0	15.5	19.5		
25	3.877	555	655	1.18	9.0	15.5	19.5		
25	3.871	565	660	1.17	10.0	17.0	21.0		
25	3.904	555	650	1.17	10.0	17.0	21.0		
25	3.854	550	635	1.15	9.0	15.5	19.5		
25	3.850	560	660	1.18	9.0	15.0	19.0		
25	3.819	560	650	1.16	9.5	16.5	20.5		
25	3.821	550	640	1.16	10.0	17.0	21.0		
25	3.819	550	640	1.16	9.0	15.0	19.0		
25	3.832	560	655	1.17	9.5	16.5	20.0		
25	3.826	555	650	1.17	9.0	15.5	19.5		
25	3.856	550	640	1.16	9.5	16.5	21.0		
25	3.879	560	650	1.16	9.0	15.0	19.0		
25	3.884	555	650	1.17	9.5	16.5	21.0		
25	3.851	550	645	1.17	9.5	16.5	21.0		
25	3.873	560	655	1.17	9.5	16.5	21.0		
25	3.877	545	640	1.17	9.5	16.5	20.0		
25	3.856	550	640	1.16	9.0	16.0	19.5		
25	3.827	560	655	1.17	9.0	16.5	20.0		
25	3.843	560	660	1.18	10.0	17.0	21.0		
25	3.850	560	655	1.17	9.0	16.5	20.5		
25	3.862	555	645	1.16	9.5	16.5	20.5		
25	3.871	560	660	1.18	10.5	17.0	21.0		
25	3.859	555	645	1.16	9.0	16.5	20.5		
25	3.864	555	640	1.15	9.0	16.0	20.0		
25	3.876	560	655	1.17	10.0	17.0	21.0		
25	3.879	560	655	1.17	10.0	17.0	21.0		
25	3.838	550	650	1.18	9.0	15.0	20.0		
25	3.841	560	655	1.17	9.5	16.0	21.0		
25	3.845	555	640	1.15	10.0	17.0	21.5		
25	3.815	560	645	1.15	10.5	16.5	20.0		
25	3.823	565	655	1.16	9.5	15.0	21.0		
25	3.829	545	650	1.19	9.5	16.5	21.5		
25	3.840	555	660	1.19	9.0	17.0	22.0		
25	3.851	530	625	1.18	10.0	15.0	21.0		
25	3.855	560	660	1.18	10.0	17.0	20.0		
25	3.862	565	655	1.16	10.5	17.0	21.0		
25	3.868	550	640	1.16	10.5	16.0	20.0		
25	3.879	560	645	1.15	9.5	16.0	20.5		
25	3.880	550	645	1.17	9.0	15.5	21.5		
25	3.883	550	650	1.18	9.0	16.5	20.0		
25	3.889	545	640	1.17	10.0	15.5	21.0		
25	3.822	555	645	1.16	8.5	16.5	21.0		
25	3.850	545	640	1.17	9.0	15.0	21.5		
25	3.905	545	645	1.18	9.5	16.5	21.0		
25	3.880	555	660	1.19	8.5	15.0	20.0		
25	3.866	560	655	1.17	8.5	16.0	21.5		
25	3.870	560	645	1.15	10.0	15.5	22.0		
25	3.848	560	660	1.18	9.5	16.5	20.5		
25	3.859	550	655	1.19	9.0	15.0	22.5		
25	3.863	560	660	1.18	9.0	16.5	23.0		
25	3.859	565	665	1.18	9.5	15.0	21.0		
25	3.815	560	655	1.17	10.0	16.5	21.0		
25	3.845	555	660	1.19	8.5	16.5	21.5		
25	3.850	545	640	1.17	8.5	15.0	20.0		
25	3.860	550	645	1.17	10.5	16.5	20.0		
25	3.878	560	660	1.18	10.5	16.5	21.5		
25	3.839	555	650	1.17	9.5	15.0	21.0		
25	3.900	560	660	1.18	9.5	17.0	20.0		
25	3.849	550	650	1.18	8.5	17.0	22.0		
25	3.865	555	655	1.18	10.0	16.5	20.5		
25	3.862	545	640	1.17	9.0	15.5	21.0		
25	3.869	540	640	1.19	9.0	15.5	21.5		
25	3.871	555	650	1.17	9.5	16.0	20.5		
25	3.875	560	655	1.17	10.0	16.5	20.5		

25	3.872	550	645	1.17	9.0	15.5	21.0	2.0	1.4
25	3.863	550	645	1.17	9.0	15.5	21.0		
25	3.864	550	640	1.16	9.0	15.5	21.0		
25	3.865	560	655	1.17	10.0	16.5	20.5		
25	3.868	550	645	1.17	9.0	15.5	21.0		
25	3.860	555	645	1.16	9.0	15.5	20.5		
25	3.865	550	650	1.18	9.5	16.0	21.0		
25	3.867	555	655	1.18	10.0	16.5	20.5		
25	3.869	555	650	1.17	9.5	16.0	20.5		
25	3.862	540	635	1.18	8.5	15.0	21.5		
25	3.859	550	645	1.17	9.0	15.5	21.0		
25	3.859	550	645	1.17	9.0	15.5	21.0		
25	3.857	545	640	1.17	9.0	15.5	21.5		
25	3.864	545	640	1.17	9.0	15.5	21.0		
25	3.863	545	640	1.17	9.0	15.5	21.0		
25	3.865	550	645	1.17	9.0	15.5	21.0		
25	3.866	550	645	1.17	9.0	15.5	21.0		
25	3.865	550	645	1.17	9.0	15.5	21.0		
25	3.842	550	650	1.18	9.5	16.0	21.0		
25	3.852	550	645	1.17	9.0	15.5	21.0		
25	3.864	545	645	1.18	9.0	15.5	21.5		
25	3.842	545	640	1.17	9.0	15.5	21.5		
25	3.863	540	635	1.18	8.5	15.0	21.5		
25	3.865	540	640	1.19	9.0	15.5	22.0		
25	3.858	550	650	1.18	9.5	16.0	21.0		
25	3.829	540	635	1.18	9.0	15.5	22.0		
25	3.841	540	635	1.18	9.0	15.5	22.0		
25	3.849	550	645	1.17	9.0	15.5	21.0		
25	3.856	545	640	1.17	9.0	15.5	21.5		
25	3.852	550	650	1.18	8.5	15.0	20.0		
25	3.863	545	640	1.17	9.0	15.5	21.0		
25	3.835	540	625	1.16	8.5	15.5	20.0		
25	3.840	550	640	1.16	9.5	17.0	20.5		
25	3.900	555	660	1.19	8.0	17.0	20.0		
25	3.849	560	655	1.17	10.0	16.0	21.5		
25	3.910	560	660	1.18	8.0	15.5	21.5		
25	3.863	560	650	1.16	9.5	16.5	20.0		
25	3.869	555	655	1.18	8.0	15.0	21.0		
25	3.873	545	645	1.18	9.5	16.0	20.5		
25	3.884	560	645	1.15	10.0	15.5	21.5		
25	3.879	555	645	1.16	10.0	17.0	20.0		
25	3.830	550	650	1.18	8.0	16.5	20.0		
25	3.849	535	630	1.18	9.5	16.5	21.5		
25	3.836	560	655	1.17	8.0	15.0	20.0		
25	3.848	540	640	1.19	9.5	17.0	21.0		
25	3.853	545	635	1.17	8.0	15.0	20.0		
25	3.855	525	620	1.18	8.5	17.0	21.5		
25	3.846	545	635	1.17	8.5	16.0	21.0		
25	3.852	545	635	1.17	9.0	15.0	20.5		
25	3.860	555	645	1.16	10.0	16.5	20.0		
25	3.864	550	645	1.17	10.0	15.5	21.0		
25	3.865	560	660	1.18	8.0	16.5	20.5		
25	3.870	550	645	1.17	9.5	17.0	20.5		
25	3.872	560	650	1.16	8.0	15.5	20.0		
25	3.833	560	650	1.16	10.0	16.5	20.0		
25	3.836	550	650	1.18	10.0	15.5	21.5		
25	3.844	545	645	1.18	9.5	17.0	20.5		
25	3.846	550	635	1.15	8.0	15.0	20.0		
25	3.851	560	655	1.17	9.5	16.5	21.5		
25	3.889	545	640	1.17	9.5	15.5	21.0		
25	3.861	535	635	1.19	9.5	15.5	21.0		
25	3.872	575	680	1.18	10.0	16.0	21.5		
25	3.877	570	665	1.17	9.5	15.5	21.5		
25	3.864	565	660	1.17	9.0	15.0	21.0		
25	3.823	565	665	1.18	9.5	15.5	21.5		
25	3.844	560	665	1.19	9.0	15.0	21.0		
25	3.871	570	665	1.17	9.5	15.5	21.5		
25	3.876	565	655	1.16	9.0	15.0	21.0		
25	3.866	565	665	1.18	9.0	15.0	21.0		
25	3.889	560	660	1.18	10.5	17.0	22.0		
25	3.884	555	650	1.17	9.0	15.0	20.5		
25	3.864	555	650	1.17	9.5	15.5	21.0		
25	3.875	550	640	1.16	10.0	16.0	21.5		
25	3.881	550	640	1.16	10.5	17.0	22.0		
25	3.864	555	650	1.17	9.0	15.0	21.0		
25	3.823	560	660	1.18	9.0	15.0	20.5		



25	3.888	555	655	1.18	10.0	17.0	22.0		
25	3.878	535	635	1.19	9.5	16.0	21.0		
25	3.875	560	660	1.18	9.5	16.5	21.5		
25	3.881	550	655	1.19	9.0	15.5	21.0		
25	3.886	550	655	1.19	9.5	16.0	21.5		
25	3.903	545	650	1.19	9.0	15.0	20.5		
25	3.870	540	645	1.19	9.0	15.0	20.5		
25	3.879	540	640	1.19	9.5	16.5	21.5		
25	3.882	550	655	1.19	10.5	17.0	22.0		
25	3.874	560	660	1.18	9.5	16.0	21.5		
25	3.880	560	665	1.19	9.5	16.0	21.5		
25	3.867	535	640	1.20	9.0	15.0	20.5		
25	3.863	540	645	1.19	9.0	15.5	21.0		
25	3.872	545	655	1.20	10.0	16.5	22.0		
25	3.882	545	640	1.17	9.0	15.5	21.0		
25	3.871	545	650	1.19	9.5	16.0	21.5		
25	3.864	545	640	1.17	9.5	16.0	22.0		
25	3.873	550	655	1.19	9.0	15.5	21.5		
25	3.881	560	670	1.20	10.0	16.5	22.0		
25	3.855	555	655	1.18	9.5	16.0	21.5		
25	3.869	545	645	1.18	9.5	16.0	21.5		
25	3.878	545	650	1.19	9.0	15.5	21.0		
25	3.882	545	640	1.17	9.0	15.5	21.0		
25	3.869	550	645	1.17	9.0	15.5	21.0		
25	3.900	565	665	1.18	9.5	16.0	21.5		
25	3.881	555	655	1.18	9.5	16.0	21.5		
25	3.873	555	655	1.18	10.0	16.5	22.0		
25	3.881	560	665	1.19	9.0	15.5	21.0		
25	3.886	555	655	1.18	9.5	16.0	21.5		
25	3.866	545	650	1.19	9.5	15.5	21.0		
25	3.875	535	640	1.20	9.5	15.5	21.0		
25	3.879	560	665	1.19	10.0	16.5	22.0		
25	3.882	560	665	1.19	10.0	16.5	22.0		
								1.85	1.25
								1.80	1.20