



, QSXW	7HVW 3ODQ 3UHL[	7HVW 3ODQ 0DWHULDO 7HVW	&XUH &F DH &RQGLWLRQ
\$,75		3:& :7 /+ 57'	

7HVW SURX5 3:& :7 /+ 57'

0DWHULDO & ) 5: 1RUPDOLJDWLRQ &XUH 3O\ 7K3ONLGHVV	\$&* ,QF
7HVW 7\SH :DUS 7HQVLOH &RQGLWLRQ 57'	0DWHULDO 3URFHVV
7HVW 0HWKRG 03 \$670' 0RGXOXV 3RLVVRQ V 5DQJH &KRUG WR	/DERUDWRU\ 5HSRUW

6SHFLPHQ ,'	/HQJWK LQ	7KLFNO&MMHG 8QDWLPDWH	8QDWLPDWH 6WUHQJWK NVL 3RLVVRQ	1RWHV
\$,75 3:& :7 % /+ 57				1RW 7HVWH
\$,75 3:& :7 % /+ 57				1RW 7HVWH
\$,75 3:& :7 % /+ 57				1RW 7HVWH
\$,75 3:& :7 % /+ 57				1RW 7HVWH
\$,75 3:& :7 % /+ 57				1RW 7HVWH
\$,75 3:& :7 % /+ 57				1RW 7HVWH
\$,75 3:& :7 % /+ 57				1RW 7HVWH
\$,75 3:& :7 % /+ 57				1RW 7HVWH

0LQLPXP	
0D[LXP	
\$YHUDJH	
6WDQGDUG 'HYLDWLRQ	
&RHIILFLHQW RI 9DULDWLRQ	
1R 6SHFLPHQV	

1RWHV  
 17 1RW 7HVWHG  
 15 1R 5HVXOW  
 \*( \*DJH (UURU  
 )0 )DLOXUH 0RGH 8QDFFHSWDEOH

7HVW 3ODQ 3UHIL[  
\$,75  
7HVW \$URX

7HVW 3ODQ 0DWHULDO 7HVW  
3:& :7 /+ (7:

&XUH &\FOH &RQGLWLRQ



,QSXW 7HVW 3ODQ 3UHIL[ 7HVW 3ODQ 0DWHULDO 7HVW &XUH &\FOH &RQGLWLRQ  
\$,75 3:& )7 /+ &7'  
7HVW \$,75 3:& )7 /+ &7'  
0DWHULDO &) 5: 1RUPDOLJDWLRLQ &XUHG 3O\ 7K\ 3ONLGHVV \$&\* ,QF  
7HVW 7\SH )LOO 7HQVLOH &RQGLWLRQ &7' 0DWHULDO 3URFHVV  
7HVW 0HWKRG 03 \$670' 0RGXOXV 3RLVVRQ V 5DQJH &KRUG WR /DERUDWRU\ 5HSRUW  
6SHFLPHQ , ' /HQJWK LQ 7KLEHQHVV LQ LQ LQ  
0HDV(XURUPDOLJH V(XURUPDOLJH  
\$,75 3:& )7 % /+ &7' /\$ 1RW 7HVWH  
\$,75 3:& )7 % /+ &7' /\*0 1RW 7HVWH  
\$,75 3:& )7 % /+ &7' /\$ 1RW 7HVWH  
\$,75 3:& )7 % /+ &7' /\$% 1RW 7HVWH  
\$,75 3:& )7 % /+ &7' /\$ 1RW 7HVWH  
\$,75 3:& )7 % /+ &7' /\$ 1RW 7HVWH  
\$,75 3:& )7 % /+ &7' /\$ 1RW 7HVWH  
\$,75 3:& )7 % /+ &7' /\*7 /\$%0 1RW 7HVWH



1RWHV  
17 1RW 7HVWHG  
15 1R 5HVXOW  
\*( \*DJH (UURU  
)0 )DLOXUH 0RGH 8QDFFHSWDEOH

7HVW 3ODQ 3UHIL[ 7HVW 3ODQ 0DWHULDO 7HVW &XUH &\FOH &RQGLWLRQ  
\$,75 3:& )7 /+ 57'  
7HVW SUR,75 3:& )7 /+ 57'  
0DWHULDO



7HVW 3ODQ 3UHIL[ 7HVW 3ODQ 0DWHULDO 7HVW &XUH &\FOH &RQGLWLRQ  
\$,75 3:& )7 /+ (7:  
7HVW SUR,75 3:& )7 /+ (7:  
0DWHULDO 30LHV\_ \$&\* ,QF  
7HVW 7\SH )LOO 7HQVLOH &RQGLWLRQ 0DWHULDO 3URFHVV  
7HVW 0HWKRG 03 \$670' 0RGXOXV 3RLVVRQ V 5DQJH &KRUG WR /DERUDWRU\ 5HSRUW  
0HDV(XUR)UPDOLJH

7HVW 3ODQ 3UHIL[ 7HVW 3ODQ 0DWHULDO 7HVW &XUH &\FOH &RQGLWLRQ  
 \$,75 3:& )7 /+ (7:  
 7HVW \$,75 3:& )7 /+ (7:  
 0DWHULDO  
 7HVW 7\SH )LOO 7HQVLOH &RQGLWLRQ 30LHV\_ \$&\* ,QF  
 7HVW 0HWKRG 03 \$670' 0RGXOXV 3RLVVRQ V 5DQJH &KRUG WR /DERUDWRU\ 5HSRUW

						0HDV(XURUPDOLJH B V(XURUPDOLJH				
\$,75	3:&	)7	%	/+	(7:	7 /\$%	/*	*(	1RW	7HVWH
\$,75	3:&	)7	%	/+	(7:	% /\$7	/*	*(	1RW	7HVWH
\$,75	3:&	)7	%	/+	(7:	% /\$7	/*	17	1RW	7HVWH
\$,75	3:&	)7	%	/+	(7:	% /\$7	/*	*(	1RW	7HVWH
\$,75	3:&	)7	%	/+	(7:	% /\$7	/*	*(	1RW	7HVWH
\$,75	3:&	)7	%	/+	(7:	% /\$7	/*	*(	1RW	7HVWH
\$,75	3:&	)7	%	/+	(7:	% /\$7	/*	*(	1RW	7HVWH
\$,75	3:&	)7	%	/+	(7:	% /\$7	/*	*(	1RW	7HVWH



, QSXW	7HVW 3ODQ 3UHIL[	7HVW 3ODQ 0DWHULDO 7HVW	&XUH &F DH &RQGLWLRQ
\$,75		3:& :& /+ 57'	

7HVW SURX5 3:& :& /+ 57'

0DWHULDO & ) 5: 1RUPDOL]DWLRQ &XUH 3O\ 7K3ONLGHVV	\$&* ,QF
7HVW 7\SH :DUS &RPSUHVV&RQGLWLRQ 57'	0DWHULDO 3URFHVV
7HVW 0HWKRG 03 \$670' 0RGXOXV 3RLVVRQ V 5DQJH &KRUG WR	/DERUDWRU\ 5HSRUW

6SHFLPHQ ,'	/HQJWK LQ	7KLFNO&MMHG 8QDLPDWH	8QDLPDWH 6WUHQJWK NVL 3RLVVRQ
\$,75 3:& :& % /+ 57'			7*0
\$,75 3:& :& % /+ 57'			+*0 +
\$,75 3:& :& % /+ 57'			7*0 *(
\$,75 3:& :& % /+ 57'			%*0
\$,75 3:& :& % /+ 57'			%**
\$,75 3:& :& % /+ 57'			+*0
\$,75 3:& :& % /+ 57'			%*0
\$,75 3:& :& % /+ 57'			%, %*0 +

0LQLPXP	
0D[LXP	
\$YHUDJH	
6WDQGDUG 'HYLDWLRQ	
&RHIILFLHQW RI 9DULDWLRQ	
1R 6SHFLPHQV	

1RWHV  
 17 1RW 7HVWHG  
 15 1R 5HVXOW  
 \*( \*DJH (UURU  
 )0 )DLOXUH 0RGH 8QDFFHSWDEOH





7HVW 3ODQ 3UHIL[ 7HVW 3ODQ 0DWHULDO 7HVW &XUH &\FOH &RQGLWLRQ  
\$,75 3:& :& /+ (7:  
7HVW SUR,75 3:& :& /+ (7:  
0DWHULDO \_\_\_\_\_ 3OLHV\_ \$&\* ,QF  
7HVW 7\SH :DUS &RPSUHVV&RQGLWLRQ 0DWHULDO 3URFHVV  
7HVW 0HWKRG 03 \$670'



, QSXW	7HVW 3ODQ 3UHL[	7HVW 3ODQ 0DWHULDO 7HVW	&XUH &F DH &RGLWLRQ
\$,75		3:& )& /+ 57'	
7HVW SUR, X5 3:& )& /+ 57'			
0DWHULDO	& )	5: 1RUPDOL]DWLRQ	&XUHG 3O\ 7KIBOLGHVV
7HVW 7\SH	)LOO &RPSUHVV&RQGLWLRQ	57'	\$&* ,QF
7HVW 0HWKRG	03	\$670' 0RGXOXV 3RLVVRQ V 5DQJH	&KRUG WR /DERUDWRU\ 5HSRUW
6SHFLPHQ ,'	/HQJWK LQ	7KLFNO&MMHG 8QWL PDWH	8QWL PDWH 6WUHQJWK NVL 3RLVVRQ
\$,75	3:& )& % /+ 57'	:LGWK 7KLFNO/RDVG OE	DLOXUH 0HDV\URUPDOLHVVXURUPDOLHVV
\$,75	3:& )& % /+ 57'		%*7
\$,75	3:& )& % /+ 57'		+*0
\$,75	3:& )& % /+ 57'		+*7
\$,75	3:& )& % /+ 57'		%*0
\$,75	3:& )& % /+ 57'		%*%
\$,75	3:& )& % /+ 57'		%*0
\$,75	3:& )& % /+ 57'		%*0
\$,75	3:& )& % /+ 57'		%*0
\$,75	3:& )& % /+ 57'		%*0
0LQLPXP			
0D[LXP			
\$YHUDJH			
6WDQGDUG 'HYLDWLRQ			
&RHIILFLHQW RI 9DULDWLRQ			
1R 6SHFLPHQV			
1RWHV 17 1RW 7HVWHG )& % /+ 57' 0RGXOXV IURP WR 15 1R 5HVXOW *( *DJH (UURU )0 )DLOXUH 0RGH 8QDFFHSHWDEOH			

7HVW 3ODQ 3UHIL[ 7HVW 3ODQ 0DWHULDO 7HVW &XUH &\FOH &RQGLWLRQ  
\$,75 3:& )& /+ (7'  
7HVW SUR,75 3:& )& /+ (7'  
0DWHULDO

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7HVW 3ODQ 3UHIL[ 7HVW 3ODQ 0DWHULDO 7HVW &XUH &\FOH &RQGLWLRQ  
\$,75 3:& )& /+ (7:  
7HVW SUR,75 3:& )& /+ (7:  
0DWHULDO



, QSXW	7HVW 3ODQ 3UHL[	7HVW 3ODQ 0DWHULDO 7HVW	&XUH & \FDH & RQGLWLRQ
\$,75	3:& )& /+ (7:		
7HVW SUR, X5	3:& )& /+ (7:		
0DWHULDO & ) 5: 1RUPDOL]DWLRQ &XUH 3O\ 7K3ONLGHVV			\$&* , QF
7HVW 7\SH )LOO &RPSUHVVV&RQGLWLRQ (7:			0DWHULDO 3URFHVV
7HVW 0HWKRG 03 \$670' 0RGXOXV 3RLVVRQ V 5DQJH &KRUG WR			/DERUDWRU\ 5HSRUW
6SHFLPHQ ,'	/HQJWK LQ	7KLFNO&MMHG 8QWL PDWH	8QWL PDWH 6WUHQJWK NVL 3RLVVRQ &XUH
\$,75 3:& )& % /+ (7			+*% *( *)
\$,75 3:& )& % /+ (7			+*0 *( *)
\$,75 3:& )& % /+ (7			+*7 *( *)
\$,75 3:& )& % /+ (7			+*% *( *)
\$,75 3:& )& % /+ (7			%*0 *( *)
\$,75 3:& )& % /+ (7			+*0 *( *)
\$,75 3:& )& % /+ (7			+*0 *( *)
\$,75 3:& )& % /+ (7			+*0 *( *)
0LQLPXP			
0D[LXP			
\$YHUDJH			
6WDQGDUG 'HYLDWLRQ			
&RHIILFLHQW RI 9DULDWLRQ			
1R 6SHFLPHQV			
1RWHV			
17 1RW 7HVWHG			
15 1R 5HVXOW			
*( *DJH (UURU			
)0 )DLOXUH 0RGH 8QDFFHSWDEOH			

7HVW 3ODQ 3UHIL[ 7HVW 3ODQ 0DWHULDO 7HVW &XUH &\FOH &RQGLWLRQ  
\$,75 3:& ,36 /+ &7'  
7HVW SUR75 3:& ,36 /+ &7'  
0DWHULDO 1RUPDOLIDWLRQ&X\$HG 3O\ 7KLFNQHVV \$&\* ,QF  
7HVW 7\SH " f ,Q 3ODQH 6K&RQGLWLRQ &73OLHV \_ 0DWHULDO 3URFHVV  
7HVW 0HWKRG 03 \$670' 0RGXOXV 3RLVVRQ V 5DQJH &KRUG WDERUDWRUW  
0RGXOXV 0VL  
2IIV# 6WUDLQ 0D[LPXP 0HDVXUH

,QSXW 7HVW 3ODQ 3UHIL[ 7HVW 3ODQ 0DWHULDO 7HVW &XUH &\FOH &RQGLWLRQ  
 \$,75 3:& ,36 /+ 57'  
 7HVW SURX5 3:& ,36 /+ 57'  
 0DWHU070 &) 5: 1RUPDOLLDWLRQ &X\$HG 3O\ 7KLFNQHVV \$&\* ,QF  
 7HVW 7\SH " f ,Q 3ODQH 6KRQGLWLRQ 573OLHV \_ 0DWHULDO 3URFHVV  
 7HVW 0HWKRG 03 \$670' 0RGXOXV 3RLVVRQ V 5DQJH &KRUG ~~DERUD~~ ~~SRUW~~  
 6SHFLPHQ , ' /HQJWK LQ ` 5: 2IIV# 6WUDLQ 0D[LPXP( 0HDVXUH  
 0RGXOXV 0VL  
 \$,75 3:& ,36 % /+ 57' 17  
 \$,75 3:& ,36 % /+ 57' 17  
 \$,75 3:& ,36 % /+ 57' 17  
 \$,75 3:& ,36 % /+ 57' 17  
 \$,75 3:& ,36 % /+ 57' 17  
 \$,75 3:& ,36 % /+ 57' 17  
 \$,75 3:& ,36 % /+ 57' 17  
 \$,75 3:& ,36 % /+ 57' 17  
 \$,75 3:& ,36 % /+ 57' 17



1RWHV  
 17 1RW 7HVWHG  
 15 1R 5HVXOW  
 1\$ 1RW \$SSOLFDEOH  
 )0 )DLOXUH 0RGH 8QDFFHSDWDEOH  
 \*( \*DJH (UUR



, Q S X W	7HVW 3ODQ 3UHLI	7HVW 3ODQ	0DWHULDO	7HVW	&XUH &\FOH	&RQGLWLRQ
\$,75		3:& ,36	/+	(7:		

7HVW \$URX5 3:& ,36 /+ (7:

0DWHU 070 &)	5: 1RUPDOLDWLRQ &X\$HG 3O\ 7KLFNQHV	\$&* ,QF
7HVW 7\SH " f ,Q 3ODQH 6K&RQGLWLRQ (73OLHV		0DWHULDO 3URFHVV
7HVW 0HWKRG 03 \$670' 0RGXOXV 3RLVVRQ V 5DQJH &KRUG		WDERUDSWRUW

6SHFLPHQ ,'	/HQJWK :LQWK	LQ	7KLENOELVYDLDXU	&XUHGI 3OV	6KHDU 6WUHQJWK 0RGKOV	0VL
\$,75 3:& ,36 % /+	(7:				21V# 6WUDLQ 0D[LXP	0HDVXUH
\$,75 3:& ,36 % /+	(7:				*(	17
\$,75 3:& ,36 % /+	(7:					17
\$,75 3:& ,36 % /+	(7:					17
\$,75 3:& ,36 % /+	(7:					17
\$,75 3:& ,36 % /+	(7:					17
\$,75 3:& ,36 % /+	(7:					17

0LQLPXP						
0D[LXP						
\$YHUDJH						
6WDQGDUG 'HYLDWLRQ						
&RHILFLHQW RI 9DULDWLRQ						
1R 6SHFLPHQV						

1RWHV  
 17 1RW 7HVWHG  
 15 1R 5HVXOW  
 1\$ 1RW \$SSOLFDEOH  
 )0 )DLOXUH 0RGH 8QDFFHSWDEOH  
 \*( \*DJH (UUR

7HVW 3ODQ 3UHIL[ 7HVW 3ODQ 0DWHULDO 7HVW &XUH &\FOH &RQGLWLRQ  
\$,75 3:& 6%6 /+ 57'  
7HVW SURX5 3:& 6%6 /+ 57'  
0DWHULDO 1RUPDOL]DWLRQ &XUH 3O\ 7KLFNQ\$& ,QF  
7HVW 7\SH 6KRUW %HDP 6KHD&RQGLWLRQ 57'3OLHV \_ 0DWHULDO 3URFHVV  
7HVW 0HWKRG 03 \$670' 6SDQ W\_ /DERUDWRU\ 5HSRUW

0HDX(XUH1RUPDOL]H

\$.75 3:& 6%6 % /+ 57'  
\$.75 3:& 6%6 % /+ 57'  
\$.75 3:& 6%6 % /+ 57'  
\$.75 3:& 6%6 % /+ 57'  
\$.75 3:& 6%6 % /+ 57'  
\$.75 3:& 6%6 % /+ 57'  
\$.75 3:& 6%6 % /+ 57'  
\$.75 3:& 6%6 % /+ 57'  
\$.75 3:& 6%6 % /+ 57'

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,/6  
,/BW-€ y



, Q S X W	7HVW 3ODQ 3UHIL[	7HVW 3ODQ 0DWHULDO	7HVW	&XUH & \FOH	&RQGLWLRQ
\$,75		3:& 6%6 /+	(7:		

7HVW \$UR75 3:& 6%6 /+ (7:  
 0DWHU 070 &) 5: 1RUPDOLDWLRQ &XUH 3O\ 7KLFNQ \$V\* , QF  
 7HVW 7\SH 6KRUW %HDP 6KH&RQGLWLRQ (7 3OLHV \_ 0DWHULDO 3URFHVV  
 7HVW 0HWKRG 03 \$670' 6SDQ W \_ /DERUDWRU\ 5HSRUW

6SHFLPHQ ,'	/HQQWK	LQGWK	LQ	7K	&XUH 380 WLPDWH /RDG	80WLPDWH 6WUHQJWK NY
\$,75 3:& 6%6 % /+ (7:					7KLFNQHVV OE	0HDVXUHSRUPDGLJH
\$,75 3:& 6%6 % /+ (7:						,/6
\$,75 3:& 6%6 % /+ (7:						,/6
\$,75 3:& 6%6 % /+ (7:						,/6
\$,75 3:& 6%6 % /+ (7:						,/6
\$,75 3:& 6%6 % /+ (7:						)&&
\$,75 3:& 6%6 % /+ (7:						,/6
\$,75 3:& 6%6 % /+ (7:						,/6
\$,75 3:& 6%6 % /+ (7:						,/6

0LQLPXP  
 0DLPXP  
 \$YHUDJH  
 6WDQGDUG 'HYLDWLRQ  
 &RHIILFLHQW RI 9DULDWLRQ  
 1R 6SHFLPHQV

1RWHV  
 17 1RW 7HVWHG  
 15 1R 5HVXOW  
 )0 )DLOXUH 0RGH 8QDFFHSWDEOH

,QSXW 7HVW 3ODQ 3UHIL[ 7HVW 3ODQ 0DWHULDO 7HVW &XUH &\FOH &RQGLWLRQ  
 \$,75 3:& 6%6 /+ (7: 3:& 6%6 /+ (7:  
 7HVW \$,75 3:& 6%6 /+ (7:  
 0DWHU070 &) 5: 1RUPDOLDWLRQ &XUH 3O\ 7KLFNQ\$&\* ,QF  
 7HVW 7\SH 6KRUW %HDP 6KHD&RQGLWLRQ (7: 3OLHV \_ 0DWHULDO 3URFHVV  
 7HVW 0HWKRG 03 \$670' 6SDQ W\_\_ /DERUDWRU\ 5HSRUW  
 6SHFLPHQ , ' /HQJWK LQ )DLOXUH 0RGH 8QDFFHSWDEOH  
 \$,75 3:& 6%6 % /+ (7: ,/6  
 \$,75 3:& 6%6 % /+ (7: ,/6  
 \$,75 3:& 6%6 % /+ (7: ,/6  
 \$,75 3:& 6%6 % /+ (7: ,/6  
 \$,75 3:& 6%6 % /+ (7: ,/6  
 \$,75 3:& 6%6 % /+ (7: ,/6  
 \$,75 3:& 6%6 % /+ (7: ,/6  
 \$,75 3:& 6%6 % /+ (7: )&&  
 \$,75 3:& 6%6 % /+ (7: ,/6



1RWHV  
 17 1RW 7HVWHG  
 15 1R 5HVXOW  
 )0 )DLOXUH 0RGH 8QDFFHSWDEOH



7HVW 3ODQ 3UHIL[ 7HVW 3ODQ 0DWHULDO 7HVW &XUH &\FOH &RQGLWLRQ  
\$,75 3:& 2+7 /+ 57'  
7HVW \*URXS \$,75 3:& 2+7 /+ 57'  
0DWHULDO 1RUPDOL]DWLRQ&XISHG 3O\ 7KLFNQHVV \$&\* ,QF  
7HVW 7\SH 2SHQ +ROH 7HQVLRQ /D\X&RQGLWLRQ 573OLHV \_ 0DWHULDO 3URFHVV  
7HVW 0HWKRG 03 \$670' /DERUDWRU\ 5HSRUW

0HDVXUHRUPDOL]H

\$,75 3:& 2+7 % /+ 57'



7HVW 3ODQ 3UHIL[ 7HVW 3ODQ 0DWHULDO 7HVW &XUH &\FOH &RQGLWLRQ  
\$,75 3:& 2+7 /+ (7:  
7HVW \*URXS \$,75 3:& 2+7 /+ (7:  
0DWHULDO 1RUPDOL]DWLRQ&XISHG 3O\ 7KLFNQHVV \$&\* ,QF  
7HVW 7\SH 2SHQ +ROH 7HQVLRQ /D\X&RQGLWLRQ (73OLHV \_ 0DWHULDO 3URFHVV  
7HVW 0HWKRG 03 \$670' /DERUDWRU\ 5HSRUW

0HDVXUHRUPDOL]H



7HVW 3ODQ 3UHIL[	7HVW 3ODQ 0DWHULDO	7HVW	&XUH &\FOH &RQGLWLRQ
\$,75	3:& 2+& /+ 57'		
7HVW *URXS \$,75	3:& 2+& /+ 57'		
0DWHULDO	1RUPDOLIDWL&RQHGS 3O\ 7KLEHQHV	\$&* ,QF	
7HVW 7\SH 2SHQ +ROH &RPSUHVVL&RQHGS 3O\ 7KLEHQHV	3D\LHV_	0DWHULDO 3URFHVV	
7HVW 0HWKRG 03 \$670'		/DERUDWRU\ 5HSRUW	
	+ROH (GRGH (GJH		
	6LGH I (QG J		( 01FDU\KDUHL]H
\$,75	3:& 2+& % /+ 57'		0 /*
\$,75	3:& 2+& % /+ 57'		0 /*
\$,75	3:& 2+& % /+ 57'		





,QSXW	7HVW 3ODQ 3U	HIL	7HVW 3ODQ	ODWHULDO	7HVW	&XUH	&\FOH	&RQGLW	RQ
	\$.75		3:&	2+&	/+	(7:			

7HVW \*URXS \$.75 3:& 2+& /+ (7:

ODWHU	LD70	&)	5:	1RUPDOL	DWLRQ	HGS	30\	7KLFNQHV	\$&* ,QF
7HVW	7\SH	2SHQ	+ROH	&RPSUHVV	LRQ	DLWS	RQ	37OLHV	ODWHULDO 3URFHVV
7HVW	0HWKRG	03	\$670'						/DERUDWRU\ 5HSRUW

6SHFLPHQ ,'	/HQQJW	KLGWK	7KLFNQ	8KUHG	30\	+ROH	(GRGH	(GJH	WK	LDPHW	8OWLP	DWLRQ	WLPDWH	6WU)	DL	DK	HNVL
\$.75	3:&	2+&	% /+	(7:													0 / *
\$.75	3:&	2+&	% /+	(7:													0 / *
\$.75	3:&	2+&	% /+	(7:													0 / *
\$.75	3:&	2+&	% /+	(7:													0 / *
\$.75	3:&	2+&	% /+	(7:													0 / *
\$.75	3:&	2+&	% /+	(7:													0 / *
\$.75	3:&	2+&	% /+	(7:													0 / *
\$.75	3:&	2+&	% /+	(7:													0 / *

0LQLPXP																	
0DLPXP																	
\$YHUDJH																	
6WDQGDUG	'HYLDWLRQ																
&RHILFLHQW	RI 9DULDWLRQ																
1R	6SHFLPHQV																

1RWHV  
 17 1RW 7HVWHG RU ([FOXGHG  
 15 1R 5HVXOW  
 1\$ 1RW \$\$\$OLFDEOH  
 )0 )DLOXUH 0RGH 8QDFFHSWDEOH

7HVW 3ODQ 3UHIL[

7HVW 3ODQ 0DWHULDO 7HVW

&XUH &\FOH &RQGLWLRQ



, Q S X W		7HVW 3ODQ 3UHIL[	7HVW 3ODQ	ODWHULDO	7HVW	&XUH &\	FOH &R	QGLWLRQ																			
\$,75		3:&	,/7	/+	57'																						
7HVW \$,75 3:& ,/7 /+ 57'																											
0DWHU	ZDO	&)	5:	1RUPDOLJDWLRQ				UHG	3O\	7KLFNQHVV	\$&* ,QF																
7HVW 7\	SH	,QW	HUODPLQDU	7HQVLRQ	RDXWLRQ	537	OLHV	0DWHULDO			3URFHVV																
7HVW 00\	WKR	\$670'									/DERUDWRU\		5HSRUW														
6SHFLPHQ ,'	\$670'			6SHF 'LPHQVLRQ				8OWLPDWH SHDN					)DLO KUH														
	7KLFN	,Q	:L	QW	KL	Q	R	X	W	L	Q	\$,QJ	DJH	LQ	N	GHJ	ú	LB	OE	&%6	LQ	1	u	SVL	U	MVL	ORGH
\$,75	3:&	,/7	%	/+	57'																						
\$,75	3:&	,/7	%	/+	57'																						
\$,75	3:&	,/7	%	/+	57'																						
\$,75	3:&	,/7	%	/+	57'																						
\$,75	3:&	,/7	%	/+	57'																						
\$,75	3:&	,/7	%	/+	57'																						
0LQLPXP 0D[L PXP \$YHUDJH 6WDQGDUG 'HYLDWLRQ &RHIILFLHQW RI 9DULDWLRQ 1R 6SHFLPHQV 1RWHV 17 1RW 7HVWHG 15 1R 5HVXOW 1\$ 1RW \$SSOLFDEOH																											

, QSXW	7HVW 3ODQ 3UHIL[	7HVW 3ODQ 0DWHULDO	7HVW	&XUH &	FOH &	RQGLWLRQ
\$,75		3:& ,/7 /+	(7:			

7HVW \$,75 3:& ,/7 /+ (7:

0DWHUOZDO &)	5:	1RUPDOLDWLRQ	30\ 7KLFNQHV	\$&* ,QF
7HVW 7\SH ,QWHUODPLQDU	7HQVLRQ	ORQXWLRQ	(7OLHV	0DWHULDO 3URFHVV
7HVW 003WKR \$670'				/DERUDWRU\ 5HSRUW

6SHFLPHQ ,'	\$670'	6SHF 'LPHQVLRQV	8OWLPDWH SHDN	)DLOKUH
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	7KLFN	,Q	:LQWKLQ	QXWLRQ	\$QJH	LG	N	GHJ	u	LOE	&%6	LO <sub>1</sub>	SVL	U	NVL	ORGH
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\$,75	3:& ,/7	% /+	(7:														
\$,75	3:& ,/7	% /+	(7:														
\$,75	3:& ,/7	% /+	(7:														
\$,75	3:& ,/7	% /+	(7:														
\$,75	3:& ,/7	% /+	(7:														
\$,75	3:& ,/7	% /+	(7:														

0LQLPXP																	
0D[LXP																	
\$YHUDJH																	
6WDQGDUG 'HYLDWLRQ																	
&RHIILFLHQW RI 9DULDWLRQ																	
1R 6SHFLPHQV																	

1RWHV  
 17 1RW 7HVWHG  
 15 1R 5HVXOW  
 1\$ 1RW \$\$\$OLFDEOH

normalizing t<sub>ply</sub>  
[in]

Specimen Number	ACG Code	ACG Batch #	ACG Cure Cycle	Prepreg Lot #	Cure Cycle Batch #	Measured Impact Energy (in-lbf)	Strength [ksi]	Avg. Specimen Thickn. [in]	# Plies in Laminate	Failure Mode	Avg. t <sub>ply</sub> [in]	Strength <sub>norm</sub> [ksi]
&..%+ \$	3:&	&\$,	% /+	57'	%	/+				/ '0		
&..%+ \$	3:&	&\$,	% /+	57'	%	/+				/ '0		
&..%+ \$	3:&	&\$,	% /+	57'	%	/+				/ '0		
&..%+ \$	3:&	&\$,	% /+	57'	%	/+				/ '0		
<b>Average</b>							<b>31.709</b>			<b>Average<sub>norm</sub></b>		<b>32.322</b>
<b>Standard Dev.</b>							<b>1.067</b>			<b>Standard Dev.<sub>norm</sub></b>		<b>1.038</b>
<b>Coeff. of Var. [%]</b>							<b>3.365</b>			<b>Coeff. of Var. [%]<sub>norm</sub></b>		<b>3.213</b>
<b>Min.</b>							<b>30.183</b>			<b>Min.</b>		<b>30.909</b>
<b>Max.</b>							<b>32.672</b>			<b>Max.</b>		<b>33.344</b>
<b>Number of Spec.</b>							<b>4</b>			<b>Number of Spec.</b>		<b>4</b>

Specimen Number	ACG Code	ACG Batch #	ACG Cure Cycle	Prepreg Lot #	Cure Cycle Batch #	Measured Impact Energy (in-lbf)	Strength [ksi]	Avg. Specimen Thickn. [in]	# Plies in Laminate	Failure Mode	Avg. t <sub>ply</sub> [in]	Strength <sub>norm</sub> [ksi]
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\$YHUDJH

\$p Å

\$YHUDJH