ROYAL BANK OF CANADA
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['.l ELNs.- RBC Struc tured t-. X \ C i Sec ur e I htt p s:// www .rb cu sn otes .com / beta/ lea rning Centre/El Ns .I I RBC Capital Markets Regional sites "' contact us I Q cli ent ce n tre IHome curre nt Offerings Existing Products Product summaries Resources Q - • ' -- EM l -'lllllr.al HOME I RESOURCES Understanding Our Products Equity Linked NotesEquity Linked Notes (ELNs) all ow clients to customize return to suit their investmentneeds. Traditional equity investments provide full exposure to the market. whether the performanceis positive or negative.ELNs provide clients with an alternative to traditional equiti es that canoffer an enhanced ret urn if th e underlying equity asset rises, and varying levels of protection if the market falls. ELNs can be li nked to a variety of underlying assets, including indices, single stocks, portfolios of shares and industry sectors, and canbe expanded to include commoditiesand currencies. senents Risks ELNs maybe suited for clients who:Wantaccess to produc ts that can be customizedt o reflect thei r return preferencesWant to limit market exposure t o match their level of risk toleranceRequire growt tl or income in their portfolioPrefer a medium term investment typically of 3 - 10 yearsA1e com forta ble wi t h the cred it ri sk o f the applica b le issuer custo mizedEquity inv estingELNsdeliver tailo red exposure to equity markets. For marketswith expected growth , clients may consider notes that provide an accelerated or boosted return. These products provide enhanced participation in the positive performance of a selected equity market For investors that require income,notes that pay fixed or conditional coupons at above-marketratesmay beappropriate.RiskToleranceELNsare created to accommodate a variety of risk tolerancelevels. Notes can be designed to provide partial or conditional downside exposure while still offeringupside return in positive markets.Flexible andTimely issuanceBased oncurrent Market conditionsELNscanbecustomizedand made available for purchase within a short time frame, typically a fewdays. Cli ents can choose to partic ipate in ELNs when it best suits their investment outloo k.Transparent, Passive and For mulaicThe return on the ELNs is t>ased on a definedpayment formula appli ed to the performanceof an underlyingasset The current

' [jELN s RSC Stru ctur ed I\ X - : 1 C I i Secu re I htt ps://w wv..rbcusnotes.co m/ beta/ Le amingCen tre/ ELNs ' - -c1e. * I© .I IRBC Cpa i at l Ma rke ts Home Cu rr fl n t Off flrings Existi ng Pro du cts Product Sum m ari fls Rfl sources Q The return on t he ELNs is based on a defined payment formula applied to the performance o f an underlying asset Th e cu rren tp erf ormancfl of thfl underlying asset can be o bserved throughout the tfl r m of th fl ELN. The return formula is pr fl-deter mined beforfl note issuance and th e return calcu lation is therefore t ransparent How it worKschoosing an Equity Linked NoteELNsare created based on t he investment preferences of clients. Investors can choose from notes with a growth or i ncome focus, based on t heir personal requ iremen ts. Cust omi zing the UPSIDE return and DOWNSIDE exposureInves tor's may cus tomize t he level of upside pal'tici patio n they wan t to an u nderlyi ng equity asset, as well as theamount of downsid e expos ure des ired. UPSIDE DOWNSIDE Growth Income eoosu-,R tum Enhanre:t Full or Partial Fi11.e dR tum R,tum Coupo n s Cond itionalCoupons Calla ble- NoExposure PartialExposull'l Condi tio naiExposure ("Bulfe r'") ("Ba rti e,..) Choo sing the Upside Return - Gro wth NotesGrowth notes are desig-ned ta enhance returns when mar ket pe rformance is positive. Booster Not es and Enh im ced Return Not es are two types of Gro wth notes. Booster Not eA Booster Note will provide a minimum retu rn at maturity ifl he performance in th e underlying equity asset at matur ity is pos itive but less than the stated Boost er Percen tage.For any posit ive performance grea ter tha n the Boo ster Percentage, the Investor will typicall y part icipate i n the full appr eciation of the underly ing equity asset at matu rit y. For any negati ve p erformance In t he u nde rlyi ng i < "<,- Upsid ePartldpalJon

, ['.l ELNs. - RBCStructured t-. X \ - ' C i Sec ure I https:// www.rbcusnotes.com/ beta/lea rningCentre/ElNs * &! .I IRBC Capital Mark et s Home current Offeri ngs Exist ing Products Product summaries Resour ces 0. Choos ing the Upside Return - Growth Notes Growth not es are designed to enhance returns when market performance is positive. Booster Notes and Enhanced Return Notes are two types of GrowthnotQs. A Booster NoteA Booster Not e will providea minimum return at maturity if the performancein the underlying equity asset at maturity is positive but less than the stated Booster Percentage.For any positive performance greater than the Booster Percent age, the investor will typically participate in the fullappreication of t he underlying equity asset at maturity.For any negative performance in the underlying equity asset, the investor will receive a return equal to the un derlying equity asset's price return at maturity, unlessthe note includes limits on downsidP Pxposurn.Emp loying a Booster strategy may be appropriate in the followingsrnnarios.AnInvestor Is moderately bullis h: Asan example, a note that offers a SO% boos ter for any return in the underlyingequity asset between o - 50%, willprovide the investor with a SO% payou t at ma t urity even if the performance of the underlying equity asset is 0.01%.This is displayed visually in the graph below.AnInvestor i s bullish but wants to maximizereturnIn the event that equity market performance ismodest: If t he underlying equity asset generates significantly positive returns. the investor partic ipates in these ret urns but also receives the booster return during modest market performance. Upside Participation Paymentat Maturity UNDERLYING PERFORMANCEPertentage change inthe 1.1nd nc e<1uitv M-$Ct For illustration purposes only. Not an actual Note. ConsiderationsInvest ors will lose some or all of t heir initial invest ment if the underlying equity asset's price return at maturity is negative, unless th e note includPs limits on downsidPPxposurP. lnvPstors do not rPcPiVPdiv i dends p a i d by t h e stocks i n t he Index. Enhanced Return Note

' [jELNs - RBC Stru ctured I\ X - a.db =_ f- C I i Secure I ll ttp s.// w 1,v w . r b cusn otes.com / beta/ Learn ingCe ntre /ELN s * I® .I IRBC Capital Markets Ho me current Offerings Exist ing Pro d ucts Product s u mmar ies Resou rces 0. Enh a n c ed Ret u rn NoteAn En hanced Retu rn Note wil l return an accelerat ed performance of an underlying equity asset if its performance is posi ti ve at maturity. For any negative performance in the underlying equity asset, the investor will receive a retu rn equal to t he underlying equit y asset' s price return at matu rity, unless the note incl udes limits on downside exposure.As an example, if an i nvestor with a l ong t ime horizon who i s l ooking for higher tha n average market retu rns purc hases a 6-year note that off ers 1.s times t he appreciat ion of an equity i ndex, the n at matur ity , fo r any posit ive retu rn i n the index, t he investor receives 1so% of such pos i t ive return. Consid erations I n vestors will lose some or all of the ir initia l invest ment if the underlying equity asset' s price return at matu rity is negative, unless the note inclu des li mit s on downs ide exposure. Investors do not receive dividends paid by t he stocks i n t he Index. °:, ' I,i.: z :';!i • Payment I Maturity U NDERLYING PERFORMANCEPn-c11ntali'11 ch nll"! in t M lndu For illustration purposes only. Not an actual Note. Choos ing the Upside Return - Income Notes .,., Income Notes offer an investor t he ability to receive fixed or condit ional income. Fixed Coupon Barrier Notes and Aut ocalla ble Notes are two types of Income Noles.Fi xed co upon Barr ier NotesThis type of note provides fixed coupon payments on a regular basis and usuall y offers conditi onal limits on downside exposure at matur ity. These notes are commonly linked to a single broad-based equity i ndex, such as the S&P soo® I nd ex, the Russell 20000> I nd ex, etc. At mat urity, as long as the index does not drop to the pre-specified barrier love the I nvesto r receives a return of principa l. If the index trades at or below the barrie r level at maturity, the investor loses pri ncipal in line with the perform ance of the index.considerationsWhile these strategies may meet i nvestors' needs for income, the lim its on downside parti ci pation offered at maturity are cond it ional on the underlying equity asset not trading below the bar ri er level shortly before maturity. It is also worth highlighting th at inve stors do not receive any addit ional retu rn based on the performance of tho underlying equity asset at matur i ty over and above the coupon payments paid throughout the term of the note. All coupons and payments at maturity are subject t o the issuer's credit and are therefore dependent on the Issuer's abil ity to pay at the time. Autoca ll able Cond iti on a l Co upo n NotesThese notes pay a condit ional coupon if the underlying market is above t he coupon barrier level on the relevant observation date. The notes are automaticallv call ed at a r ice e u al to t he or ieinal investment amou nt if t he level of the un derlv inl! e uitv asset as of the relevant observation date is

' L]EL N :s - RBC Structur ed (\ X - ! E. - a1 X f- C I i Sec ure I https:// \.vv.n.v.rbcu sno tes .co m/ beta / l e.arningCe r,tre/ ELNs * ... .I IRBCCap i ta l M ar ke ts Home current Off eri ngs Existing Product s Product s ummari es Resources QAut ocallable condit ional coupon Not esThese not es pay a conditi onal coupon if the underlyi ng market is abovethe coupon barrier level on the relevant observat ion date. The notes are automa ticall y called at a price equal to the original i nvestment amount. if t he level of the underlying equit y asset as of the relevant observation date i s equal t o or above its initi al level. If t he note i s not call ed during its term and on t he matu ri ty date the underlying equity asset is not below th e pre–determined principal barr ier level, the note returns the original i nvestment amount. However, if the underlyi ng equity asset is trading below the principal barrier level at maturity, t he investor receives t he market return and potenti ally a substantial lossof principal.considerationsWhil e these no tes may provide a greater return over traditional income -generat ing invest ments, retu rns are not guaranteed and are con dit ional on th e underlying equity asset performance. Additionally, return of principal at maturity is al so condit ional on t he underlying equit y asset performance. All coupons and payments at matu rity are subject to t he issuer's credit and are therefore dependent on th e issuer's ability to pay at the ti me. If the notes are called prior t o maturi ty, i nvestors will not receive any further coupons and may not be able t o invest the proceeds i n another product with comparable tN ms. Choosing the Level of Downside Exposure ;.. ELNs can be designe d to include a desired level of downside exposure. ELNs may provide full, partial o r conditi onal limits on downside exposure so t hat on ly the protection requi red by i nvestors is actually purchase d, which poten tially allows for greater upside partici pat ion i n t he performance of the underlying equity asset Two common forms of providing downside li mits are the Buff er an d the Barrier.BuffersBuffers offer part ial prot ection from a depreciati on in th e equity market by protecting an i nvestor from a stat ed decli ne in the performance of the underlying equity asset at maturity. For example, a note wit h a 30% buffer li mits the investor's exposure to the first 30% drop in t he underlying equity asset at matu rity. If the underlyi ng equity asset were to suffN a loss beyond 30%, the investor would only participate in the drop beyond 30%, e.g. for a drop of so% in the underlying equity asset, the investor would i ncu r a l oss reflecti ng 20% of the decli ne. Buffer strategies, when combined wit h boosters or enhanced return featu res,offer investors the abil ity to enhance returns while providing insulati on from the ini tial loss of a stat ed amo untconsiderationsWh il e this strategy man ages t he risk of a market fall , the benefits of the buffer are only real ized at maturit y. Th e i nvest or is exposed to any loss on the underlying equity asset beyond the buff er. All payments at matur ity are subject to the issuer's credit and are th erefore dependent on t he issuer's ability t o pay at t he time. Bar rier sBarriers offer protecti on that is condit ional o n t he performance of the underlying eq uity asset on t he mat urity date. For example, if a note includes a 30% barrier at maturity, as long as th e underlyi ng equity asset does not drop by 30% or more at maturity, investors will receive back their original investment If the underlying equity asset were to drop by 30% or more. i nvestors would fully participate in the drop and lose principal in line with t he drop in the underlying equity asset Thi s is unli kebuffered strategies,where investors would only partic i pate in the i ncrement al drop beyond 30%.

' C'.iELNs - RSC Structured f\ X - f- C I i Secure I h tt p s:// vvww .rbcusn o tes.co m /beta/ Lea m i ngCent r e/ ELNs * I .I I RBC CapitalM ark et s Home current Offe ri ngs Existing Pro du ct s Pro d uct s ummar ies Resources 0.underlying equity asset This is unlike buff ered strat egies, where investors would only participate in the incremental drop beyond 30%.considerationsTh e barrier does not provide for a minimum return of princi pal. In addi t ion and simila rt o the buff er above, the benefi t s of the barr ier are only realized at maturity. All payment s at maturity are subject to the issuer 's credit and are t herefo re dependent on t he issuer 's abili ty to pay at the tim e. Impor tant Infor mat ion Additional Risk ConsiderationsThis communi cation has been generat ed by RBC capi tal Markets' Global Eq u ity Linked Pro ducts and is not a research report or a product of RBC Capital Markets' Research DepartmentThese materials are for informati onal purp oses only and do not contain all informat ion t hat may be requi red to evaluat e, and do not constit ute a recommendati on with respect to, any investment Any reci pient of these mat erial s should conduct it s own independent analysi s of the matter s referred to herein. Investors must consult wit h their own advisors prior to investing. We are not providi ng you wit h any account ing. legal or tax advice in connection wit h t hese mat erials.Before a potent ial i nvestor can purchase any struct ured notes, they must have completed account opening procedures and have execut ed relevant documentati on. Prior t o investing i n a structured note, a potential investor will need to carefully review t he relevant offeri ng documents to full y understand the investment and the potentia l risks. Please revise the "Addit ional Risk Considerat ions" ta b for important risk factors t hat investors should consider in connection wit h the investments discussed on th is website.The informatio n and any analyses contained in this doc ument are taken from, or based upon, i nformati on from publ icly available sources, the completeness and accuracy of which has not been in depende ntl y verified. The informati on and any analyses in t hese materials are subject to change wit h changing market conditions.Any exampl es, calculat io ns or value ranges indicated herein are hypotheti cal and shou ld no t be construed as indicati ve of levels at which an issuer may issue a productRBC Capital Markets is the global brand name for the capit al markets busi ness of Royal Bank of Canada and its affil iates, including RBC Capital Markets, LLC (member FINRA, NYSE and SIPC); RBC Dominion Securit ies Inc. (member IIROC and CIPF}; Royal Bank of Canada - Syd ney Branch (ABN 86 076 940 880); RBC capital Markets (Hong Kong} Limited (regulated by the securit ies and Fut u res Comm issio n of Hong Ko ng and the Hong Ko ng Monetary Aut ho rity) and RBC Eu rope Limited (aut horized by the Pru dential Regulat io n Aut hor ity and regulated by th e Fi n ancial Conduct Au t ho ri ty and Pru d ent ial Reg u lat ion Aut hority.}@

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estimatedvaluedoes not represent the future value of the ELN.ELNswill not be listedon any securit ies exchange. Whi tethe relevant issuer or its affiliate willgenerallyendeavor to maintain a secondary market, they are not obligatedto do so.The issueror its affiliatemaycease anymarket-makingactivitiesat any time. Even if a secondary marketfor the ELNs develops, it may not provide significant li quidity or trade at prices advantageousto the investor.The price at which an investor maybeable to sellELNs prior to maturity, if at all, maybe at a substantial discount from the principal amount of the ELNs, even in cases where theclosing price of the undertying equity asset has appreciated since the trade date. In addition, investorswill not receive the benefit of any contingent repayment of pri ncipal if they sellELNsbefore the maturity date. The potent ial returns describedin the relevantoffering documentsassume the ELNs, which arenot designed to be short-term tradinginstruments,are held to maturity.The returnon ELNs maybe lowerthan the return an investor could earn on other investmentsduring thesame term. Even if the return on anELN is positive, it may be less than the return aninvestor could earn if it bought a conventional debt security of the relevant issuer.Investing in ELNs is not the same as owning the underlying equity asset (or any security or other component including in the underlyingequity asset) directly.For instance, investors usuallywill not recevi e or beentitled to receive any di vidend payments or other distributionson the underlyingequity asset Investors will also not nave any votingrights or any other rights that a holder of the underlyingequity asset may have.Theactivities of the relevant issueror its affiliatesmay conflict with an investor's interestsand mayadversely affect the value of the ELNs.Many economicand market factors willinfluencethe value of the ELNs, including but not limited to, interest and yield rates in the market, time to maturity of the ELNs,expected volatility of the underlying equity asset, and economic, financial, political, regulatory or judicialevents.While the off ering documents will typically contain a summaryof the expected U.S. federal income tax consequences of aninvestment in the ELNs, sign ificantaspects of the tax treat ment of the ELNs maybe complex and uncertain. Prospective investors shouldconsult with their tax advisor before investi ng in anyELN to dete rminethe effects based on their individual circumstances.

, C'.i ELNs - RIK Structured t\ X - -;;:- ill- x - 1 f- C I i Secure I htt ps:// w,;\/\v.rbcus no tes .co m/ beta/ Le arningCe ntre/ ELNs e, * I '8J I.IRBC Capita\ Markets Home Curr ent Of ferings Existing Pro ducts Product Su mmaries Resources Q Equity Linked Notes Eq uity Linked Notes (ELNs) allow clients t o cust omize ret urn to suit t heir investment needs. Tradi ti onal equity investme nts provi de full exposure to the marke t. whether the performance is positive or negati ve.ELNs provide cli ents with an alternativet o traditional equities that can offer an enhanced return if the underlying equity asset rises, and varyi ng levels of protectio n if the mar ket falls. ELNscan be Iinked to a variety of underlying assets. inc lu d in g indices, single stocks, portfolio s of shares and in dustry secto rs, and can be expanded to in clud e com modities and currencies . ELNs may bo sultod for cll onts who:Want accessto products l hal can be cust omized t o reflect their return preferencesWant to limit market eKposure to match their level of ri sk toleranceRequire Qrowl h or Income in their portfolfoPrefer a medium term lnvest mem typically of J - 10 yearsAre comfortable with the credit risk of the applicable issuer Some key r isk considerations In clu de, but a.r e not li mited, t o the following:ELNs are senior debt obli gati ons of t he issuer of t he ELN. Th erefore, ret urns are dependent on the issuer's abili ty to pay. Any secondary ma.rket prices willtypically decrea.:se i f t h e i ssuer's cn:1d i t r i s k i n creases.ELNs most often do not offer full downside protection, so investors may lose all or a par t of the ir initia l investment based on the performance of the underlying equity assetReturn formulas are pre-defined and cannot be changed during the term of the note.Returns could be less t han t radit ional debt securit ies.Returns may be capped (depending on the structure).Altho ugh i nvestors might hold a note li nked to an undertyi ng equity asset that generates divi dends, ELN investors most on en do not receive t he benefit of these dividends (depending on individual note feat ures).A secondary market for ELNs is not guaranteed. The price at which ELNs can be sold in the secondary market, if any, prior to matu rity may be at a subst ant ial discount f rom the invest or's i nitia l invest mentTypi call y, the market val ue of an ELN will on ly fully reflect the return formula at or cl ose to matur it y. Prior to mat ur ity, a variety of fact ors may cause th e market value of an ElN to be less than th e pri ncipal amount, or less than the amount that may be expected to be paid at mat urit y.Prior to invest;ng, potential investors should review the relevant offer ;ng documents for details spNiflc to the ELN offer ing. How It worKschoosingan Equity Llnkod NotoELNs are created based on t he investment preferenceso f cli ents. Investors can choo se from notes wit h a growth or income focus, based on t heir personal requiremen ts.

, Custom ized Capabilities X \ C i Secure I https:// wwv.-.rbc usnotes.com/ beta/learningCentre/CustomizedCapabilities .I I RBC Capital Markets Regional Sitesv contact us I a Client centrIeHome curre nt Offerings ExistingProducts Product summaries Resources 0. ...._ HOME I RESOURCES Customized Capabilities At RBC, the Globa l Equit y Linked Products group offersa comprehensive spectrum of Equity Linked Notes("ELNs") to sui t the needs of investment advisors, broker-dealers and their investors. We also recognize that a more customizedapproach to product design may be necessary fo r i nvesto rs with unique requirements. Our customized solutions are often used by high net worth clients with specific needs, sophisticated institutionalclients, investment advisors with a hi gh degree of autonomy, or those looking to offer bespoke solutions.For these situations, we are able to customize many aspects of an ELN. If an off -the -shelfso lution does not meet your requirements. or you havea distinct view of the market, we havethe ability to addressyour needs. We will wo rk withyo u to creat e a solut i on that fits your investment mandate. contact usGeneral Inquiriesstruc t ur ed .no t es@rbcc m.co m EAST CENTRAL WEST Brent Prowse David Barnes Dan cart er 1.844.494,4369 1,844.272.2705 1.844.494.4368 Hotline(for advisorsonly)1.844.408.7346

' [jFAQ - RIK S.truct ure<l Ne X -- 1 , . .:. -;- - x- 1 f- C I i Secure I htt ps:/ J\,vww.rb cusn o t es.co m/ beta / Leam ingCentre/FAQs El. * . I .-y, .I I RBC Capital Markets Region.al sites v contact us Home currnnt orrerlngs Existi ng Products Product summaries Ia Clie nt cent reIResourcos Q A Q What type of investors should consider purchasing RBC Structured Nat es?II RBC Str uct ur ed Notes are created for investors who are intereste d in: Th e p otenti al to ea.rn a return great er than what is avail able from traditi onal investmentsExposure to eq uity markets with the pot ential for enhanced returns with t he possibility for mitigati ng downside exposure.Exposure to equity markets that are ot herw i se difficult t a access directly.Investors who are comfo rtable with potential loss of pri ncipal, dependi ng on th e note terms.Investors who are rnm fortab le with the credit risk of the is.suer. Q What are some of t he risks associ ated with RBC St ructured Notes?II Same of the risks associat ed with RBC St ru ct ured Notes. are: All paym ent s are subject t o the issuer's credit risk.Pot ential to Lose som e or all principa l.Limited to no secondary marketPlease see "Understanding Ou r Prod ucts and the offering documents for t he specific Note for a more detailed descri pt io n of the potenti al risks. Q Are there opport unities for a client to r eceive, regular cash flows fr om an RBC Structured Note? RBC Str uctur ed Notes may provide regular m ed-payment or contingent payment cash flows. RBC cl assifies these notes as Income Notes. Peri odic payments may be cont ingent on the per1ormance of the applicable asset A A A IIQ What informati on is available to potential purchasers of RBC St ructu red Notes new issues?IJ This in format ion is availab le wit hin the Produ cts. section of the website. The pr eli min ary and fin al off ering documents are filed and available for review

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